M³

STRATEGIC DECISION-MAKING UNDER UNCERTAINTY: MODES, MODELS, & MOMENTUM

Thesis

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ABSTRACT

The M³ theory contributes to new knowledge through original research and advanced scholarship by introducing a descriptive framework for strategic decision-making in uncertain and changing environments. Aided by the introduction of a Social Realism epistemology into management literature it is differentiated its ability to present complex strategic positions as essentialist (via modes), relative (via models), and dynamic (via momentum) to plot the dynamic trajectory of innovation emergence, change, adaptation and transformation over time. At a fundamental level, the M³ theory identifies a consistent set of rules that decision-makers intentionally or unintentionally engage with or ignore to take strategic positions based on four integrated yet polarized pairs of modes: *systematic* (+S) vs. *responsive* (+R) strategies, and *conforming* (+C), vs. *differentiating* (+D) *strategies*.

Systematic strategies (+S) is the mode dedicated to increasingly sophisticated rational cognitive processes; these processes plan, purposefully compartmentalize, and regulate emotions. R*esponsive strategies* (+R) conversely, is the mode dedicated to increasingly sensitized intuitive processes; these processes are reflective, associative, action-orientated and emotionally expressive. The second pair of modes intersects with the two aforementioned modes with *conforming strategies* (+C) moving towards convergence by adapting or conveying socially perceived superior norms; these processes include the exploitation of existing power. In contrast, *differentiating strategies* (+D) represents the mode dedicated to diverging from traditional norms with empowerment for exploration. These processes include novelty-seeking, sabotage, risk-taking, experimentation, play, flexibility, discovery, and higher levels of innovation. Finally, the dynamic (momentum) component informs how strategic modes and models under uncertainty improve and adjust in sophistication under the pressure and demands of the four drives (+L).

The M³ theory is informed by three distinct but interrelated and simultaneous empirical streams of data: (i) *field data* from five ethnographic case studies, with research participant feedback loops; (ii) *the mapping of 200+ peer reviewed decision-making models*; and (iii) *prototyping* the principles in the construction of the emergent M³ theory.

Dedicated to my daughter, Io

ACKNOWLEDGEMENTS

It could be argued that the epitome of decision-making under uncertainty is selling your assets following a decade as a professional and executive in the workforce, and then packing the most important earthly possessions you can fit into two suitcases to move internationally in pursuit of a doctorate degree. The destination, a place you have only seen through the fisheye lens of the Internet.

Moving to England was indeed one of the riskiest decisions I have made without access to perfect information and resources. But as it turns out, once I was in the foreign land, that single decision to move abroad was also just the first in a long line of important decision crossroads that I would encounter over the course of my four-year doctoral student evolution. In this study it was thus not only the well documented research participants' ideas and strategies that was undergoing emergence of innovation and transformation, I as the embedded field worker was also deeply transformed as an individual and scholar by immersing in the new culture(s) with the persons I am acknowledging as an important part of this journey.

First and foremost, I want to acknowledge and thank the 40+ world-class strategists and 367+ participants (and actors) who accepted me into one of five collaborations as a participant researcher. Even though our confidentiality contract ensures your anonymity, I recognise that you made yourselves vulnerable with real-time observation and analysis when I documented our journey in real-time. Often in research like this, participants are interviewed in retrospect and allowed to hide behind rationalization and 20/20 hindsight to distort and reinterpret the journey, or they are put in an artificial lab experiment that removes chaos, or options for innovation are sterilized. I thank you deeply for trusting me and taking this risk by letting go of some control. I am proud to say that together we are making a more sizable contribution to the advancement of decision-making scholarly literature than we might have had we stuck to the safe path.

Additionally, I want to express my sincere appreciation to my doctoral supervisory team. Professor Tyrone S. Pitsis that had been advising me from day (and Year) 1, Professor Frank Mueller that started advising me in Year 2, and Doctor Andreas Giazitzoglu that joined the advising team in Year 3. Thank you for your patience and

willingness to allow me to sometimes press the boundaries on what was common and traditionally done. I can unequivocally say that this theory is better because I had to work hard to also think like each of you as a strategist and scholar.

Also, a sincere thank you to my editor, Professor Emeritus Gloria Campbell from Wartburg College. I may have only known you for a few days, but in the intensity of the days leading up to the submission deadline you were an Academic Guardian Angel. Thank you for not only for the support in taking the clarity of communication to the next level, but also lending your kindness and strength as an educator.

On a personal level, I would like to also acknowledge the global village of friends and family from around the world who enveloped this doctoral experience with love and kindness as this uncharted territory was navigated. An especially heartfelt thank you to Oma and Opa (who passed away in the days leading up to this thesis' submission battling cancer.) I didn't know that I didn't know about the love of a grandparent before getting to know you two as a team of caring grandparents. We love you two too.

Then, last but definitely not the least, I dedicate this monograph to my daughter and the inspiration behind the M^3 theory of strategic decision-making under uncertainty. I have heard murmurs of lucky financially secure British parents who use their maternity leave pause to travel the world, write a book, or change career paths. I have never heard of baby that allowed that "maternity leave timeslot" to be invested into all three those things at once, and more: continuously maintaining multiple active employment contracts to make ends meet; teaching at four different higher education institutions; traveling and/or living in four different countries with research related obligations; a Masters Certificate in Advanced Studies in Academic Practices (CASAP); then becoming a Fellow of the Higher Education Academy (FHEA); and ultimately also finishing a PhD monograph. All within the standard unit of time that is expected of all traditional doctoral students.

This would only have been possible with the most resilient (+S), loving (+C), brave (+R), curious (+D) new-borns. Every day for the past two plus years (and nine months before that) you have astutely moulded your body and temperament to my hugs. I can't wait to see what new moulds lie ahead as you and I continue to strengthen and evolve our bond with the emergence, development, adaptation and transformation of new life stages and more adventures into the unknowable future.

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LIST OF SYMBOLS AND ABBREVIATIONS

Most important reoccurring symbols and abbreviations:

+S	Systematic Strategy Modes
+R	Responsive Strategy Modes
+C	Conforming Strategy Modes
+D	Differentiating Strategy Mode
+L	Level of knowledge and complexity increase to new blueprint
+Z	Level of Zoom on the theory or model increasing detail consideration (Similar to Density as defined by Bernstein (1990)
+Q1	Quadrant 1 with Systematic and Conforming Modes
+Q2	Quadrant 2 with Responsive and Conforming Modes
+Q3	Quadrant 3 with Responsive and Differentiating Modes
+Q4	Quadrant 4 with Systematic and Differentiating Modes
C1	Collaboration 1: Corporate General Counsel
C2	Collaboration 2: Higher Education
C3	Collaboration 3: Economic Development
C4	Collaboration 4: Software Start-up
C5	Collaboration 5: Healthcare
W1	Workshop 1: Delphi Method Workshop
W2	Workshop 2: Journey Mapping Workshop
W3	Workshop 3: Design Thinking Workshop
W4	Workshop 4: Entrepreneurship Workshop
W5.1	Workshop 5.1: Customer Driven Workshop
W5.2	Workshop 5.2: U-Theory Workshop

Other symbols and abbreviations for convenient reference

B.C.	Before Christ
Ch.	Chapter
CNDS	Competing Neuro-behaviour Decision Systems
CPR	Common Pool Resource (management strategies)
HR	Human Resources
KPI	Key Performance Indicators
LCT	Legitimation Code Theory
MNC	Multi-National Corporation
MOOC	Massive Open Online Course
Gf	Fluid Intelligence
REF	Research Evaluation Framework

THE
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CHAPTER 1

INTRODUCTION

1.1. Introduction

If science is defined as "the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence" (Science Council, 2009), then what would be an antithesis? Could science also be the pursuit and understanding of the impact and response to the *unknowable*?

Initially the objective of this thesis was to get as close as possible to that elusive phenomenon of *emergence of strategic innovation* on wicked and complex problems which can only be solved in collaboration with various stakeholders intentionally moving together. The intent was to naturalistically study the initial conditions that give rise to collaborations that succeed in building momentum on an initiative for which no precedent exist.

Since the potential success of any project is unknowable or unknown at inception, what ultimately resulted was a hedged strategy of studying five international ethnographies in five different industries on the off chance one of them gains traction on the emergence of innovation. This five-pronged approach ultimately also yielded benefits and synergies beyond its intentional design to give rise to the foundation of an integrative descriptive theory M3 theory which offers a new epistemology for management literature. It offers a category spanning scaffold to practitioners and theorists alike to also identify lurking categorical blind spots of the unknowable and unknown that could hinder progress over time.

First evidence of the scholarly pursuit of wrestling with this unknowable and unknown 'dark matter' of social sciences also aptly commenced with the introduction of the concept of 'epistemology' by British philosopher James Frederick Ferrier (1854:46). To him at the time it was not just a matter of describing the approaches knowledge seekers can choose from to understand our world, but he also specifically explored Agnoiology or 'the absence of knowledge'.

In Agnoiology or Theory of Ignorance, Ferrier on the one hand claimed that there can be an ignorance of which there can be no knowledge. On the other hand, he also claimed that ignorance is a defect, and argued that there is no defect in not knowing what cannot be known by any intelligence. Critics have trouble reconciling the two stances and perceive them to be contradictory. Specifically, Haldane (1899) explains that given these two positions it therefore stands there can be an ignorance only of that of which there can be a knowledge. Therefore, the knowable alone is the ignorable.

This thesis does not perceive Ferrier's two stances to be in contradiction. Instead, it illuminates an important distinction as it applies to the body of knowledge presently at the forefront of the inter-disciplinary academic field, Agnotology, or the study of Ignorance (Gross & McGoey, 2015). Compared to historic Agnoiology, the modern Agnotology is more narrowly concerned with the study of culturally induced ignorance or doubt, particularly the publication of inaccurate or misleading scientific data (Proctor, 1995). In the context of management studies, this distinction is important. As this thesis' diversified stream of empirical data will demonstrate, even some of the most successful, educated and respected strategic decision-makers in the world, when confronted with the unknown may not always have enough resources to differentiate between unknowables and doubt or false certainty (regardless of intentional social engineering or not).

Through this study of strategic decision-making under uncertainty and the unknown, 40 strategists and over 367 additional participants and actors engaged naturalistically in wicket problem-solving that required complex collaboration and pooling of resources. In five distinct ethnographies each spanning multiple years these strategic decision-makers made themselves open and vulnerable to being wrong so that emergence, change, adaptation and transformation through innovation could also be analysed. What emerged was the creation of new knowledge through original research and advanced scholarship in the construction of the M^3 Theory coding strategic decision-making under uncertainty on the three dimensions of dominant *modes*, perceptual *models* and evolving *momentum*.

1.2. Background

Similar to how Chester Barnard (1938) imported the term "decision-making" from the lexicon of public administration into management literature to include narrower descriptions such as "resource allocation" and "policy making," so too this thesis seeks to embed "decision-making under uncertainty" into management taxonomy subsuming within it theories and models of 'emerging innovation' and 'strategy'.

'Decision-making under uncertainty' is distinctive from 'decision-making' on account of actor(s) choosing actions based on often imperfect observations, with unknown outcomes (Knight, 1921). In 1921 Frank Knight distinguished furthermore that this uncertainty is unknowable, i.e. the probability of an outcome is not possible to determine. Uncertainty is thus the antithesis of *probability*, and is yet different to *risk* because risk constitutes a situation when the probability of an outcome is possible to calculate (or is knowable). This is thus a study of strategy and innovation in the wake of the unknowable.

Innovation is often also viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. This is accomplished through more-effective products, processes, services, technologies, or business models that are readily available to markets, governments and society (Maryville, 1992). In the context of this thesis, higher levels of innovation will also be presented in relation to decision-making under uncertainty where deliberate and conscious effort is put towards opting for higher levels of uncertainty because valid arguments exist that systems can benefit from being optimally positioned for unexpected developments.

'Strategy' is commonly framed as a process synonymous to planning (Drucker, 1974; Moore, 1959; Von Clausewitz, 1976; Von Newmann and O. Morgenstern, 1944; Glueck, 1980; Porter, 1980; 1985; Schelling, 1980). However, in the context of this thesis the broader context and specifically strategy's relation to a variety of decision-making methods will be important. Therefore, strategist and decision theorist Henry Mintzberg definition will be used which describes strategy as "a pattern in a stream of decisions" (1978). This also aligns with a more updated definition by Max McKeown (2011) describing strategy as "shaping the future" and is the human

attempt to get to "desirable ends with available means" under conditions of uncertainty.

The emergence and evolution of strategy as a part of management studies will be discussed in depth in Chapter 12. One of the limitation in the evolution of management studies over the past century is how strategy and innovation have often been compartmentalized as distinct silos of information. Communicating the importance and value of re-integration of these concepts is an important component of this thesis.

To achieve this higher-level holistic view, Chapter 2 breaks down the literature into four important categories of theories. First is the most dominant classic rational decision-making under uncertainty theories. These are the strongest and most developed scientific inquiry into the field. It also strongly aligns with natural sciences and positivistic lenses for inquiry. Second is the behavioural economics decision-making under uncertainty theories. These have the second strongest basis in scientific inquiry and is closely aligned with social sciences. Social constructivism would be an example of an epistemology that closely aligns with the models that emerge from this category. Third is the improvisational decision-making under uncertainty theories. Naturalistic observation may be an example of a research lens especially well calibrated for inquiry here. And finally, is the consilience decision-making under uncertainty theories. Though extensive background was conducted on complexity theory and how it would be a well aligned method of inquiry, this thesis ultimately took a more philosophical inroad on this category and sought out a more organically social sciences approach that ultimately also subsumes complexity theory within it. Data driven codes then also revealed a pattern of polarizing modes, models and momentum by which inter-organizational collaboration develop over time and in Chapter 11 an interdisciplinary set of seminal theories and models are sought out to articulate findings using the best available terminology, models and theories available on decision-making under uncertainty to date. In Chapter 12 the lens is then inverted as 100 of the most seminal strategy theories and models are coded according to the modes, models and momentum findings from the ethnographic data.

1.3. Analytical Framework

In spite of the predominant disposition that assumes the superiority of rational models of strategic decision-making under uncertainty based on Nobel laureate awardees, business school curriculums, boards of director's deliberations, corporate consulting, think tanks, and organizational management strategy communication, this thesis' contribution seeks to transcends that of pure rational decision-making. As the G.K. Chesteron's maxim claim in the seminal Orthodoxy: "Life is a trap for logicians. Its wildness lies in wait" (Chesteron, 1908: 40). And since chaos so often triumphs over control, even centuries worth of mathematical discoveries can only do so much.

During the creation and interpretation process of constructing the new descriptive theory framework for strategic decision-making in uncertain and changing environments, both deductive and inductive methods of reasoning were in dialogue with each other. This iterative building allowed for the model to be unique in its ability to present complex strategic stances as both essentialist and relative, and can plot the dynamic trajectory of emergence, change, adaptation and transformation over time. Ultimately M^3 offers decision-makers and collaborators a methodology that can be used for comparing, developing and evolving strategic stances in uncertain environments. M^3's practical contribution furthermore also extends to academia as prototyped with this thesis to offer social science, development and evolutionary researchers, (another type of strategic decision-makers) a new tool for confronting blind spots.

After careful analysis of pure decision theory and its related disciplines across multiple fields in relation to the data that emerged, the following 'anchor models' were selected as the strongest baselines to explain the three most basic tenants of the new resulting integrative model at its broadest base.

     i.   Daniel Kahneman and Amos Tverky's work on System I and System II decision making. M^3 will be centrally building onto this theory by referring to the modes respectively as a Responsive (+R) versus Systematic (+S) strategies.

    ii.   James G. March's work on Exploration and Exploitation. M^3 will be referring to these modes respectively as a Conforming (+C) versus Differentiating (+D) strategies.

<ol type="i" start="3">
Nelson & Winter's work on Evolutionary Economics moving static modes and models to integrate dynamic elements in strategy and change (+L).

After the introduction of the empirical data in Part II of the thesis, Part III will highlight the emergent patterns of five ethnographies relative to one another. It is also at this point that three vivid representations of what constitute a mode, model and momentum will be made, as well as how the three M's relate to one another in the context of strategic decision-making under uncertainty. Because the theory was informed by the data (as oppose to being imposed from existing literature), a detailed discussion highlighting the most seminal and ground-breaking contributions from independent and interdisciplinary fields related to decision-making under uncertainty is revealed in Chapter 11 once the patterns from the data is clearly established. However, even in the review of each of these three areas none have sufficient development to date to serve as a single theory that specifically address the emergence of different types of innovation during strategic decision-making. Integration of various existing theories and models are important in constructing the M^3 theory and model.

1.4. Research Methodology

This thesis furthermore constructed and assessed the validity of the M^3 theory informed by three distinct but interrelated and simultaneous empirical streams of data:

1. *field data* from five ethnographic case studies, with research participant feedback loops;
2. *the mapping of over 200 published management frameworks and models* to the M^3 theory introduced in this thesis to review the evolution of strategic decision-making theory; and
3. *prototyping* the principles of the M^3 theory during the construction of this doctoral thesis.

Adopting and extending the epistemology of Social Realism from Sociology (Maton, 2010), the M^3 makes new theoretical contributions as it introduces management literature to a new epistemology for framing knowledge that is simultaneously

essentialist, relativist and dynamic. In reference to the cubed component, three layers of information can simultaneously be represented in the plotting of a strategic position within M^3. The layers are:

    I.   *essentialist* modes – the mapping of a static categorical position within the wider uncertain environment;

   II.   *relative* models – the mapping of a particular position in relation to another strategic stance; or

  III. *dynamic* momentum – the mapping of the movement of a strategic stance over a period of time.

1.5. Layout of the Thesis

The thesis is structured into four main parts. In the first part the approach and conceptual framework for the study are established: Following this first chapter, chapter 2 reviews the broader literature of decision-making under uncertainty theories and frames it specifically around classic rationality, behavioural economics, improvisation and consilience. This results in a high level theoretical scaffolding in anticipation of the empirical data and new integrative descriptive theoretical lens of strategic decision-making under uncertainty that follows; chapter 3 builds on the methodological implications of valuing various aspects of this framework for the ethnographic research design. It explains how the research was conducted and the resulting process of conceptual development.

Part II is the stream of empirical data. It details context and narrative on the five emerging collaborations chronicling the story of one of five emerging collaborations across multiple industries and follows their emergence, changes, developments, adaptations and transformations over the course of several years. First, in chapter 4, the field worker shares the eight snapshots along the journey of a group of Blue Chip Multi-National Corporations' (MNC) General Counsel (C1) collaborating on a new way of contracting powered by a dozen of some of the most powerful companies in the world seeking a better way to negotiate complex contracts without breaking any anti-trust laws. Then, in chapter 5 the fieldworker is appointed to an elite international university's revenue diversification steering committee (C2) as strategies for diversifying from the traditional and standard revenue model is explored. In chapter 6 the same field-worker embeds as a full-participant on a major

British metropolitan's economic development initiative (C3) bringing diverse industries, stakeholders and resources together to explore social enterprise development support platforms as a solution to local multi-generational unemployment. In chapter 7 the field-worker then chronicles the development of a software start-up (C4) from the very moments of inception when an executive was laid off. Ultimately the data section concludes with chapter 8 where the same field worker joins the advisory board of a non-profit healthcare centre (C5) focused on developing solutions for integrated medicine by signing a partnership contract with one of the most esteemed research hospitals in the US, but struggling to find the right business model for scaling.

The third part reviews the empirical data in the form of five collaborations' journey to challenge and develop the construct of the emergent innovation per the strategic decision-making under uncertainty. In chapter 9 the findings focus on the primary data from the case studies but zoom in specifically on the most vivid circumstantial parallels that happen to have emerged in these specific field for analysis along three dimensions. Each theme has significantly broader implications but the chosen examples illustrates the principle most concretely. Theme A is essentialist (modes), and was able to delve into the broad cross-section of dominant communication mediums over the extended period of idea development and transformation. Theme B is relational (models), and as formal workshops were independently facilitated in each of the five ethnographies, it juxtaposed the idea development workshops in relation to participants and strategic-decision-makers' projected strategic preferences. Theme C is the dynamic (momentum) seeking to derive insight from how different idea journeys evolved under philosophical and strategic stances projected by strategic decision-makers in the leadership. With chapter 10 the discussion of the findings in the three themes is brought full circle back to decision-making under uncertainty models and its direct implications.

Finally, in part four juxtapositions between the themes and existing literature is brought to a head. Chapter 11 explores the best seminal theories to ascertain vocabulary, model and theory that best fit the phenomena witnessed. This includes decision-making under uncertainty scholarly contributions specifically from management studies but also reaches from beyond the field in a quest to confirm, or reconfirm the phenomena using different lenses and objectives. Chapter 12

specifically takes the field of management strategy's evolution over the past one hundred years and codes the most seminal strategies according to the framework. Chapter 13 then ultimately concludes with suggested directions for further research and a vision for the next century of management studies utilizing the M3 Strategic Decision-Making under Uncertainty theory and model to illuminate the unknowable and unknown path forward.

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

Decision theory is an interdisciplinary topic, studied by not only management scholars but also economists, statisticians, psychologists, political and social scientists, and philosophers (Hansson, 2005). At its fundamentals, the discipline breaks down in a number of dimensions. First there is programmed and non-programmed decisions. This thesis only focuses on non-programmed decisions by high level strategic decision-makers and not programmed decisions by which strategic decision-makers inform subordinates on the policies and protocols that need to be conformed to. On a related dimension of certainty, risk and uncertainty, this thesis again takes an extreme point of view focusing specifically on uncertainty environments. In progressively staged levels of ambiguity, *certain environments* refer to environments and situations with implied perfect information where all relevant information to the problem is known. *Risk* refers to environment and situations with implied partial information. Some of all the relevant information to the problem is stochastic. Uncertainty, (this thesis' focus) is then the implied environment or situation with incomplete information. Some of all the relevant information to the problem is missing. (Taha, 1987: 428). This is commonly the realm in which high-level decision makers operate and specifically problem-solver addressing complex societal problems function.

First evidence of the scholarly pursuit of decision-making under uncertainty dates back to before the 6th century B.C. In reviewing one such chronological table (see Appendix A) which integrates both western and eastern philosophies, as well as purposefully showcases various academic disciplines, it becomes evident that the theories of decision making under uncertainty has been evolving in complexity century after century. Many factors can be contributing to that, but what will be specifically explored with this thesis is a better understanding on the emergence of more complex strategies and innovation. As it turns out, significant similarities exist between dealing with the abstract concept of uncertainty and applied real-world.

When a variety of perspectives from different national cultures, different historical evolutions, different disciplinary values tackles the unknown and unknowable, the resulting overlay in models and frameworks illuminates interesting and similar dominant trends as well as offers insight into blind spots that could be explored better in the future with alternative theoretical lenses.

Year	Theorist	Contribution	Field	Theory
2009	Elanor Ostrom	Mgmt. of Common Pool Resources	Economics	Consilience
2002	Daniel Kahneman	Behavioural Economics	Economics	Behavioural
2001	George A. Akerlof	Asymmetric Information	Economics	Classic Rational
2001	A. Michael Spence	Asymmetric Information	Economics	Classic Rational
2001	Joseph E. Stiglitz	Asymmetric Information	Economics	Classic Rational
1994	John C. Harsanyi	Game Theory	Economics	Classic Rational
1994	John F. Nash Jr.	Game Theory	Economics	Classic Rational
1994	Reinhard Selten	Game Theory	Economics	Classic Rational
1993	Douglass Cecil North	Institutional Change	Economics	Classic Rational
1991	Ronald Harry Coase	Nature of the Firm	Economics	Classic Rational
1986	James M. Buchanan Jr.	Public Choice Theory	Economics	Classic Rational
1981	Roger Wolcott Sperry	*Specialization of cerebral hemispheres*	Medicine	Behavioural
1978	Herbert A. Simon	Rational Decision-Making in Business	Economics	Behavioural
1972	Kenneth Joseph Arrow	Social Choice Theory	Economics	Classic Rational

Table 2.1 – A selection of Nobel Laureates with contributions to Decision-Making under Uncertainty

Over the course of this thesis over 200 seminal frameworks and models will be discussed and coded at various level of detail in relation to the theory and model being introduced. Possibly some of the more notable amongst them will include those that have also been awarded with society's esteemed Nobel Prize. For example, since 1969 almost all the Economics Nobel Laureates have been making contributions to decision-making theory, and a sizable number of awardees have included management scholars or adjacent fields focusing specifically on decision-making under uncertainty as presented in Table 2.1.

Three distinct groups of Nobel laureate theorists that will specifically be analysed in depth for the context of the strategic decision-making under uncertainty theory and model of this thesis includes:

1. *Decision-Making Modes.* Two behavioural economists, Herbert A. Simon (1978 awardee) a management scholar that challenged the idea that economic rationality is followed in managerial decision-making, and Daniel Kahneman (2002 awardee) a psychology scholar explained some of the mental shortcuts used in managerial decision-making under uncertainty. Also from beyond the traditional scope of economics Roger Wolcott Sperry (1981 awardee) in the field of Medicine also made

contributions with his work on how the specialization of cerebral hemispheres drive different types of decision-making under uncertainty.

2. *Decision-Making Models.* Elanor Ostrom (2009 awardee) an anthropologist that define eight conditions under which collaborative decision-making can have an even better outcome than defaulting to behavioural power based models in common pool resource management. Most Economic discipline recipients also contribute to rational models, but specifically valuable to rational models collaborating under uncertainty as defined in this thesis, these include the three 1994 awardees for Game Theory, and the three 2001 awardees for Asymmetric Information.

3. *Change in Decision-Making Momentum.* Kenneth Joseph Arrow (1972 awardee), Ronald Harry Coase (1991 awardee), and Douglass Cecil North (1993 awardee) all also contributed under making contributions to understanding evolutionary methods in social science.

Though this list is not intended to be exhaustive, it signals that after 47 years an integrative model connecting models and theories which had historically been presented as adversary and distributive should also be considered in an integrative way to possibly reconcile differences and divides - in the spirit of the Nobel Peace Prize category.
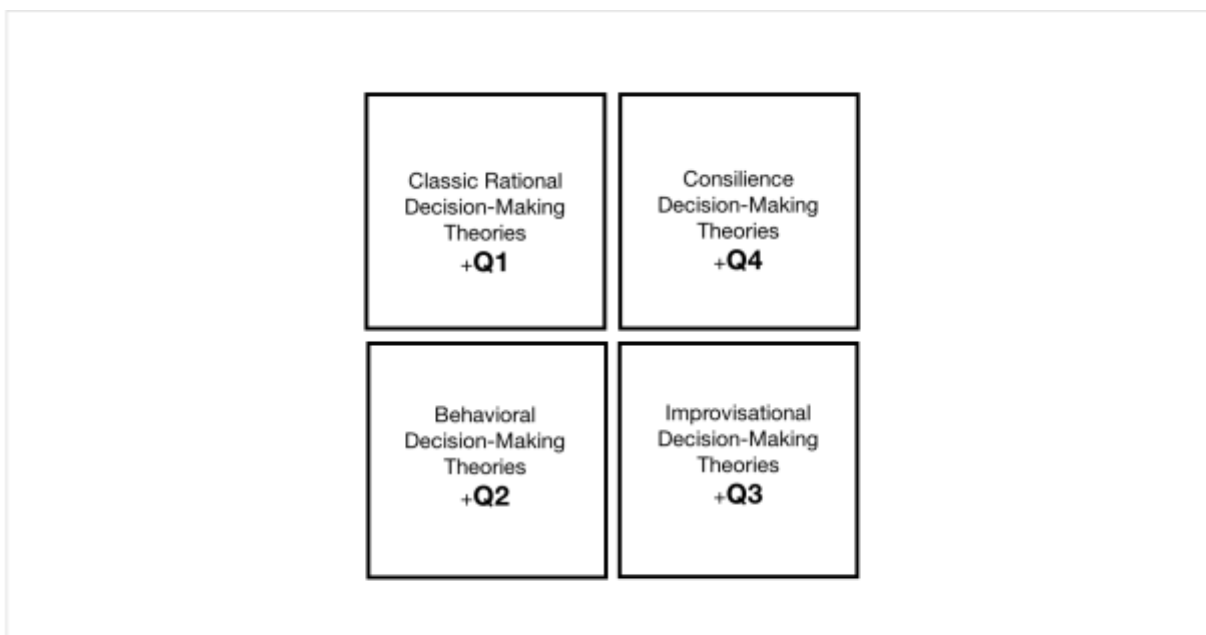
Figure 2.1. – Decision-Making under Uncertainty Theories

2.2. *Decision-Making under Uncertainty Theories*

Over the course of this thesis' development four classifications of theoretical lenses were permitted to provide a foundation on the existing landscape of decision-making under uncertainty. Though researchers (and their methodology) took sharp divides on ontological and epistemological components of what constitute truth all were accepted at the fundamental level of having made a contribution to furthering human knowledge in the field of decision making. The four lenses are as follow:

I.   *Classic Rational Decision-Making under Uncertainty Theories* (+Q1) – are concerned with making logically sound decisions by conforming to multi-step processes following a rational, orderly and linear path from problem identification through solution. These include utility functions and axioms. It also most closely aligns with risk decisions relative to uncertainty decisions. Pioneering rational decision-making under uncertainty theorists commenced with Blaise Pascal (1670) with his *Famous Wager*, and Daniel Bernoulli (1738) with the *St. Petersburg Paradox*.

II. *Behavioural Decision-Making under Uncertainty Theories* (+Q2) – recognize human decision-making's limitations with regards to available information, time, processing ability, and place a premium on the schemas and mental short cuts to prevent information overload. This includes the use of social cues and sensitivity to loyalty, trust and the pursuit of outcomes that satisfactorily are sufficient to meet a minimum qualification threshold. Pioneering behavioural decision-making theorists include Nobel laureate Herbert A. Simon (1957) who introduced the models' central tenants of *bounded-rationality* and *satisficing*, and Charles Edward Lindblom (1959) who introduced *gradualism*.

III. *Improvisational Decision-Making under Uncertainty Theories* (+Q3) – is "bringing to the surface, testing, and restructuring one's intuitive understanding of phenomena on the spot, at a time when action can still make a difference" (Weick, 1996: 147). In spite of findings (Kahneman and Tversky, 1979), that humans are generally risk averse, purposeful decision-making strategies do exist where a strategic stance is taken in pursuit of higher levels of uncertainty. Higher levels of innovation are often at the core of these

strategic stances as strategic decision makers respond in real-time to changes and information that might not be fully anticipated. It would be synonymous with what is commonly referred to in music or theatre as *improvisation*. Pioneering management scholars introducing the terminology into management literature include Moorman and Miner (1998) and Cunha, Cunha and Kamoche (1999). Improvisation is also generally accepted to include *bricolage* (Lévi-Strauss, 1967; Baker et al., 2003; Garud & Karnøe, 2003), *adaptation* (Campbell, 1969; Stein, 1989) and *serendipity* (Merton, 2002) in dealing with change and ambiguity.

IV. *Consilience Decision-Making* under Uncertainty *Theories* (+Q4) –are decision-making under uncertainty that unifies knowledge. It is the intentional and simultaneous process of creating and destroying something else of value by the same group of decision-makers. Similar to *Improvisation* models, a strategic stance of "high reward with least volatility" is left on the table, but specifically in Consilience Decision-Making Models this is because the chance of a longer-term or more important objectives are more attractive. Often the probability of success may be smaller, however, if successful, this strategy would have the capacity for an exponential impact relative to the more common linear and incremental innovation. And though 20/20 hindsight accounts of history, Hollywood and the media has mad legends out of persons demonstrating these outlier decisions, they remain rare and uncommon in bigger organizations with strong political infrastructure. There has however been a considerable uptake in recent years of strategy theorists contributing models to the development of strategic stances which are the purposefully pursuing solutions in uncertain and changing environments. In Management Studies, much of the work of Clay Christensen's (1997) *Disruptive innovation*[2] and Otto Scharmer's (1999) *Theory U* makes contributions to this quadrant. High-level *post-conventionalism ethical decision-making* (Kohlberg, 1957) would be another example. However, the word and philosophy originates as discussed in Chapter 1 outside of management studies while advocating for an

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[2] Note that there are two different types of disruptive innovation. The type where the decision-maker is simultaneously the creator and destroyer of some aspect of value if it a part of the Consilience model. The type where the decision-maker is creating value for themselves but destroying value for another (competitive) party the disruptive innovation would be classified as a part of the improvisation model.

integration of knowledge as is commonly done by innovative strategic decision-makers but discussed using different vocabulary.
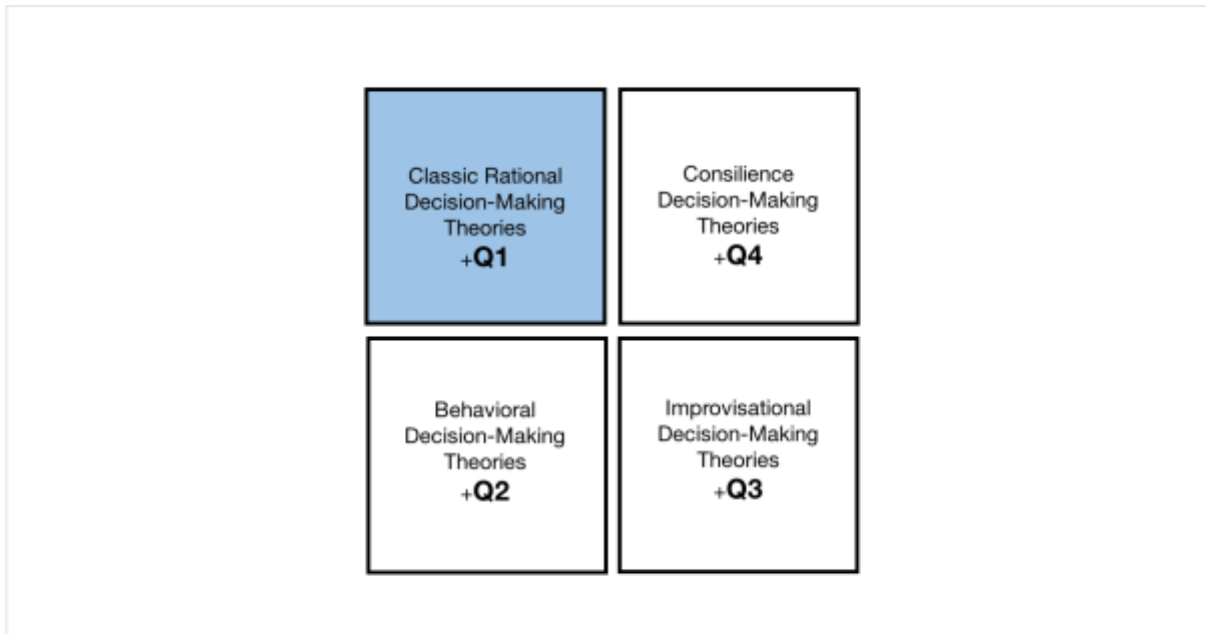
Figure 2.1.1. – Decision-Making under Uncertainty Theories: Classic Rationality

2.2.1. *Classic Rationality Theories (+Q1)*

Historically a dominant mode for framing decision-making in scholarly work had been classic rational decision-making. It's systematic and structured framework as also made it especially prevalent in management education, consulting as well as framing institutional communication. In such models, decision-makers are viewed as rational actors who are capable of quantifying probabilities and risks in a world of uncertainty. Decision-making under uncertainty then by extension ends up as objective or subjective approximated probabilities of states or utilities as a consequence of viable ranges.

The continuously expansive territory of classic rational decision-making under uncertainty theory is and has been for the past four centuries around some form of proxy probability measure on events, and maximizing the expectation of utility relative to one's uncertainty and one's preferences. Like its traditional rational decision-making counterpart models, problems are still clearly defined, extensive possible action alternatives are generated and their consequences are perceived as clear. Figure 2.1.1. provides a refresher on the Classic Rational models coded in relation to other strategies for decision-making under uncertainty.

Theory and Application

Popular application examples of rational decision-making under uncertainty includes De Finetti 's Dutch book (1974), Cox and van Fraasen's axiomatics (Cox, 1958; van Fraassen 1980), Joyce's accuracy (2009), as well as Dempster-Shafer's convex capabilities and non-additive probability belief functions (1976). Probablism encompasses Bayesian networks with its graphical models that captures probabilistic relationships between variables. Seminal contributions in expected utility include long-run optimization as well as another branch of axiomatics of Ramsey (1990). Popular application examples of expected utility encompass Markov decision processes as a method for modelling sequential problems; model uncertainty; state (1957). Most recently seminal contributions of probablism that involves cooperative decision making involving multiple interacting agents like systems for attribute-based person search, speech applications, collision avoidance, and unmanned aircraft persistent surveillance (Kochenderfer, 2015).

However, this thesis will not focus on the rational logic behind these theories as executing them merely constitutes a *programed* response of decision-making under uncertainty. In the context of this thesis it is the pursuit and understanding thought process behind the emergence of strategic and innovative problem solving under uncertainty that is the focus. Each of these mathematicians, economists and statisticians' systematic and purposeful journey and approaches in generating a theorem or equation would thus constitute strategic decision-making under uncertainty in the context of the model and theory.

As this rational quadrant lends itself well to objective thought process, it may also be one of the easier quadrants to view as standardized, quantified and measured. In principle, this thesis acknowledges serious limitations of standardized tests limiting options for true innovations when multiple choice bubble tests block out a broader spectrum of options and reduce noise by only providing a small amount of information designed to feed a specific input. However, for the purpose of empirically looking at how capacity for producing non-learned rational models have possibly changed over the past century, IQ tests are one of the better resources available.

James R. Flynn was one of many researchers to study and observe IQ tests scores for different populations over the past century. In 1994, he famously published the fact

that IQ scores increased from one generation to the next for all of the countries for which data existed (Flynn, 1994). This was dubbed the Flynn-effect. But what made Flynn's work specifically of interest to the construction and advancement of this thesis's discussion on Strategic Decision-Making under Uncertainty model, and especially its context to emergence, adaptation, change and transformation is that Flynn was also one of the first to also engage with the data using a more of a social constructivist lens.

There are various types and theories of intelligence, but in the context of strategic construction of original rational thought this thesis will anchor on specifically Fluid intelligence (Gf) as measure by tests like the Ravens, the Norwegian matrices, the Belgian Shapes test, the Jenkins test, and the Horn test. The reason for this specialized focus is because these tests are specifically constructed to emphasize problem solving and minimize a reliance on specific skills or familiarity with words and symbols. These tests on average have shown an increase of about 15 points or one standard deviation per generation (Flynn, 1994, 1987). Deary (2001) notes that it is these types of tests (i.e., "culturally reduced") on which we would not expect to see score increases if the cause of the increases was due to formal educational factors.

Arguments for world-wide nutrition, genetic evolution and society changes associated with test teaching for "time limits" (Brand, 1981) could also not account for the significant differences between generations. "The hypothesis that best fits the results is that IQ tests do not measure intelligence but rather correlate with a weak causal link to intelligence." (Flynn, 1987). Based on the presence of the effect on nonverbal tests such as the Raven's Matrices, Flynn believes that the increase is actually an increase in abstract problem solving rather than intelligence. Flynn (1994, 1999) favours environmental explanations for the increase in test scores.

Contributing to this hypothesis that more work is necessary in understanding the historic and cultural context is the work of Alexander Luria (1976). He discovered when he tested rural Russian peasants in the 1930s, pre-scientific people can't take the hypothetical seriously. That is, if you pose to them questions like, "There is snow at the North Pole; where there is snow, bears are white; what colour are bears at the North Pole?" they would say, "Well, I've only seen brown bears. And only if a person

came from the North Pole with testimony would I believe that the bears there are white."

Luria describes this worldview as "being addicted to the concrete world", not the world of hypotheticals which is especially important under uncertainty. And that of course has a big impact on a whole range of tests. If you look at Raven's, where the gains have been especially significant, the test consists of all hypothetical questions about symbols that are well removed from concrete reality. Another example of how abstract thought has changed involves classification. Luria also asked his subjects questions like, "What do dogs and rabbits have in common?" In 1900, a person would say, "You use dogs to hunt rabbits." Today you say, "They're both mammals." And that gets the question right.

What we thus gained from the longitudinal study of society's rational cognitive problem-solving is evidence of increased conforming to systematic thinking similar to those of intelligence test designers. In the past, people's minds were focused on utilitarian and responsive modes. They weren't interested in hypotheticals or in classifying things together as scholarly individuals do. But today the generations have "donned scientific spectacles." What we have is evidence of increased scientific habits of mind. An ability to attack a wider range of conceptual problems. The average person can do creative work today that they couldn't do in 1900.

In the context of this thesis' focus on collaboration and emergence of innovation this concept that has been labelled 'generational increase in IQ' thus suggests increased and possibly continued capacity for systematic innovation into the future especially with the aid of technology, computerization and Artificial Intelligence.

2.2.2. Behavioural Theories (+Q2)

A secondary, yet still dominant mode of decision-making (under uncertainty) analysis in scholarly work had been behavioural (economics) decision-making. Also known as bounded rationality this type of rationality recognizes the cognitive limitations restricting our information-processing capabilities that result from information deficiencies and over-load which compromises the decision-maker's ability to engage in a classically rational process. Nobel laureate Herbert Simon (1957) explains that this bounded rationality is in fact the most common decision-making

mode and frequently incorrect, but without it decision-making paralysis would be the most likely result. Behavioural Decision-Making models also draws on the work of Antonio Damasio (1999) with brain damaged individuals which demonstrates that in the absence of emotion it is impossible to make any decisions at all.
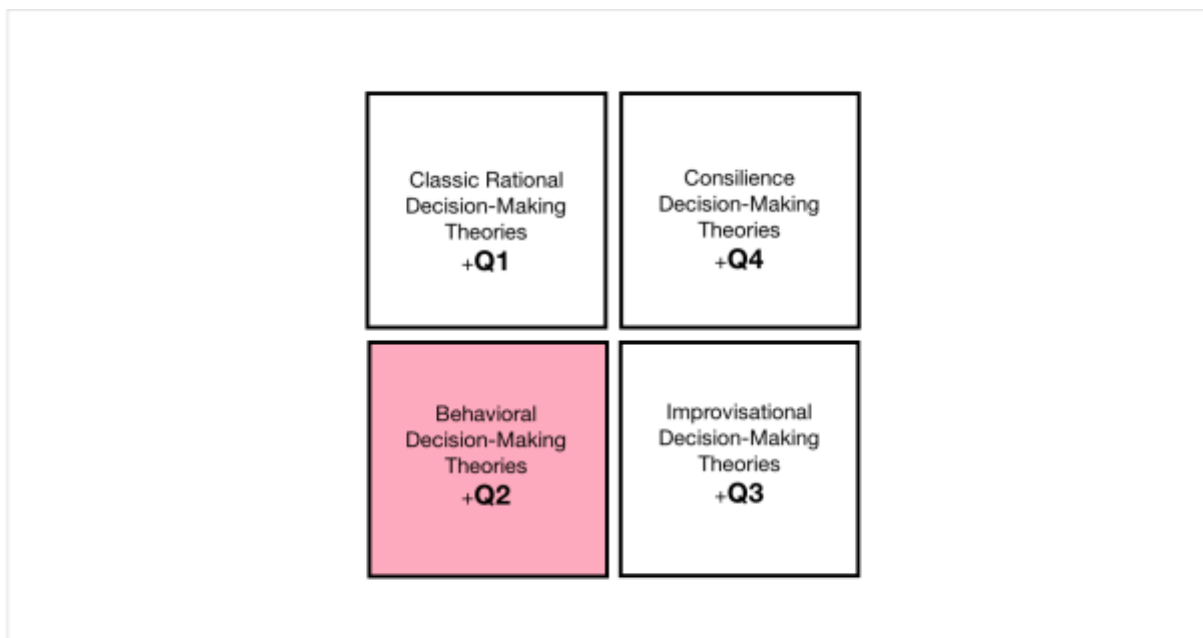
Figure 2.1.2. – Decision-Making under Uncertainty Theories: Behavioral Economics

The study of behavioural schemas or heuristics is traditionally more likely taught in the context of politics, psychology and marketing, but in recent decades it has also increasingly been included in more traditionally rational subject areas of finance and economics. Unlike Classic Rational models it does not presume rationality, fully informed actors, or complete certainty. There is thus no distinction between models classified as Behavioural Decision-making and Behavioural decision-making *under uncertainty*. Behavioural Decision-making models view decision-makers as acting only in terms of what they perceive about a given situation. Figure 2.1.2. provides a refresher on the Behavioural models coded in relation to other strategies for decision-making under uncertainty.

Theory and Application

Historically behavioural economic theories scholarly research has focused on the continually expansive dark side of behavioural decision-making that leads to mistakes and biases that often interfere with the quality of decision-making. Many of

these mistakes can be traced back to the use of heuristics. Heuristics are simplifying strategies or 'rules of thumb' used to deal with uncertainty and limited information common in problem situations. However, they can also lead to systematic errors that affect the quality and perhaps ethical implications of decisions. This includes "cold" cognitive bias such as mental noise (Hilbert, 2012) as well as "hot" motivational biases such as when beliefs are distorted by wishful thinking (Maccoun, 1998).

Over the past five decades some seminal heuristics and biases have included: *anchoring and adjustment heuristic* and *escalated commitment*. The anchoring and adjustment heuristic (Northcraft & Neale, 1987) would be an example of cognitive bias that involves assessing and event by taking an initial value from historical precedent or an outside source and then incrementally adjusting to this value to make a current assessment. For example, decision-makers could be leaving money on the table in situations where cost-plus pricing strategies are used when there is a unique point of differentiation no relationship between a product/service's value in the market and what it costs to produce it. If information about the cost is not intentionally withheld, at least initially, a pricing decision-maker is more inclined to skew their price recommendation closer to the production cost or anchor amount.

An example of a flawed motivational heuristic could be reflected in the popular adage "if at first you don't succeed, try, try again.' If instead of backing off on a decision that was previously made under less certain conditions and results in a decision-maker getting entrapped and dismissing information to change a course of action, this could constitute *escalating commitment*. This includes continuing and renewing efforts on a previously chosen course of action even though it is not working (Staw, 1981). An example of this would be when a new decision-maker hired from outside the organization turns a losing cause into a winning one because the new strategist is not emotionally vested and more capable of disentangling ego and reputation than an entrapped decision-maker unable to separate personal affect from evidence of failure.

2.3.3. Improvisational Theories (+Q3)

Improvisation Theories is not commonly associated with strategic decision-making under uncertainty literature and a part of this thesis aspires to theoretically and empirically confirm or refute the relation to the more generally accepted classic (rational) and rational decision making theories. Improvisation has been introduced

empirically into the management studies lexicon by Moorman & Miner (1998) and Cunha, Cunha & Kamoche (1999), but this study is the first to frame it in the context

Figure 2.1.3. – Decision-Making under Uncertainty Theories: Improvisational

of strategic decision-making under uncertainty models, and specifically as it categorically relates to classic rational and behavioural models. Derived from performing arts improvisation, the pronoun 'improvisational' is most commonly associated with a prolific expert in an artistic genre such jazz, rap, comedy, or public speaking capable of thinking on their feet fusing pre-planned objectives and routine with responsive information that was unknowable many moments before their execution of something novel. Often this type of decision-making brings delight to both the audience and the artist because the experience is custom created for that specific moment and is not likely to be replicated in the same way ever again. Similarly, in management studies Miner et al., (2001: 314) succinctly describes improvisation as "the deliberate and substantive fusion of the design and execution of a novel production." Figure 2.1.3. provides a refresher on the Improvisation models coded in relation to other strategies for decision-making under uncertainty.

Improvisation vs. Classic Rationality

Crossan & Sorrenti (1997), Ciborra (1999) and Alterhaug (2004) references improvisation as a form of inferior action that occurs when planning breaks down, indicating that improvisation is action without preparation or plan. This is possible,

however in the context of strategic decision-making under uncertainty this limited frame is not capturing the full potential of improvisation sought out empirically in the context of his thesis. It is however a valuable starting point for relationally unpacking opposites and extremes.

Schon (1989, 1991) expresses a valuable starting point for discussing both an opposite and extreme with his claim that the main characteristic of 'modern management thinking' on strategy to be technical rationality (TR). Up until this point in history, decision-making theories have indeed moved beyond the assertion that technical rationality is the only utility function in socio-cognitive strategy, but for the time, Schon's assertion that technical rationality was (and still is) a *dominant* and *extremity point* in the arena of classic rational strategic decision-making under uncertainty will not be contested by this thesis. Technical rationality is a rule-bound form of action that strictly follows an administrative model or procedure. This involves corporality, in which all processes are planned and rational. To work optimally, it assumes a high level of stability or insulation from external factors.

On a continuum, the polar opposite to technical rationality decisions would thus be *spontaneity* which Bergson (1944) describe as an unbreakable tie between a living body and a present-in-the becoming (as presented in Figure 2.6). Improvisation models as an aggregate can thus be described on this continuum as more rule-bound relative to spontaneity with some administrative models and procedures in place, but breaking the rules where it sees fit. Improvisation does however align closer with spontaneity (as opposed to technical rationality) in that responsive modes (as oppose to rational systematic modes) dominate the strategic decision-making under uncertainty. To work optimally, improvisation thus assumes a lower level of stability and in a competitive landscape assumes superior abilities to strategically harness (unexpected) external factors.

Improvisation vs. Bounded Rationality

After the counterpoint review of technical rationality and spontaneity it becomes unequivocal that the phenomena of improvisation are more aligned with responsiveness as opposed to systematic strategy modes. One may even go as far as to challenge Crites, (1971) and Purser & Petranker (2005)'s opinion that improvisation

is "thinking" *in* the present *on* the present. The time-bound component may be relatively true, however, in comparison to technical rationality, is it possible that what improvisation really entails is more of a "feeling and acting" than a "thinking and acting"? And if so how would the extreme responsive and controlled feeling be different from the extreme responsive and differentiating?

A couple of clues can help theoretically distinguishing between behavioural and improvisation models. First and most important are findings include that of Kahneman and Tversky, (1979), that humans are generally risk averse. The generality of this risk aversion is important because even thought their findings suggest most situations would statistically be prone to favour decisions where uncertainty and ambiguity can be minimized, outliers and example of differentiators will exist. These outliers should not be neglected because their actions stand to have big impact.

A second key concerns once again drawing upon insight derived from referencing spontaneity as an extreme example. In a more recent publication Dehlin (2013: 237) describes improvisation as "cemented in the everyday mash of spontaneity, creativity, emotionality, irreversibility and sociality." To him it is spontaneous and hermeneutical sense making via external action. Of the descriptive words he used, most applies to responsiveness. However, two words stand out as *not* readily aligning with conforming or differentiating. 'Sociality' aligns better with conforming as opposed to differentiating, and 'creativity' aligns stronger with differentiating compared to conforming. It can thereby be derived that spontaneous responses that conforms to social expectations would more likely be behavioural decision models, whereas creative spontaneity may have stronger internal, physiological emotional desires to seek out novelty or be contrarian.

Theory and Application

This thesis recognizes that historically technical rationality has been perceived to be at the centre of the strategy universe, but is working on increasing the body of empirical evidence that expansions on this framework is needed. Some of the best work produced up until now on improvisation include specifically recognizing the strategic value that can be derive from uncertainty. This includes:

- Vera and Rodriguez-Lopez (2007) both offer low structuration and improvisation as good compliments to planning.
- Baker et. al (2003) describes it as the convergence of design and execution phases.
- Moorman and Miner (1998) suggest that there are cases when the composition and execution of an action converge in time so that, in the limit, they occur simultaneously.
- Hmielesky & Corbett (2006) reports the complimentary nature in a new product development case study.
- MacCormack, Verganti & Iansiti (2001) explains where there is both an increasing need of combined flexibility and efficiency, planning plays a central role.
- Stockstrom & Herstatt (2008) noted that preliminary planning's positive influence on project achievement but also that it may become a constraint in reacting to changes - which is supposed to be improvisations' forte.

Also, in addressing prospect theory's empirical evidence from controlled experiments that decision-makers are generally risk-averse (Kahneman and Tversky, 1979) and that ambiguity and uncertainty are not pleasant long-states to exist in without resolution, this thesis calls for the exploration of outliers. In understanding the deviance samples of strategic decision-making entrepreneurs, engineers, artists, scientists that do not conform (sometimes at great peril) but seek to explore new boundaries great contributions could be made to strategic decision-making under uncertainty. One of the easiest starting points would involve integrating theories and models from innovation into the strategic decision-making under uncertainty knowledge base.

2.2.4. Consilience Theories (+Q4)

Consilience models are the fourth and final category of strategic decision-making under uncertainty this thesis seeks to investigate in conjunction with the established models. Unlike Improvisation models there is no single word uniting the models and theory in management literature at this time. The first scholar to propose the concept in relation to dealing with the epistemological framing for dealing with knowledge was British philosopher William Whewell in 1840 who defined 'consilience of

inductions' as a process that takes place when induction, obtained from once class of facts coincides with an induction obtained from another different class. Thus, consilience is a test of the truth of the theory in which it occurs (Whewell, 1840: 74).
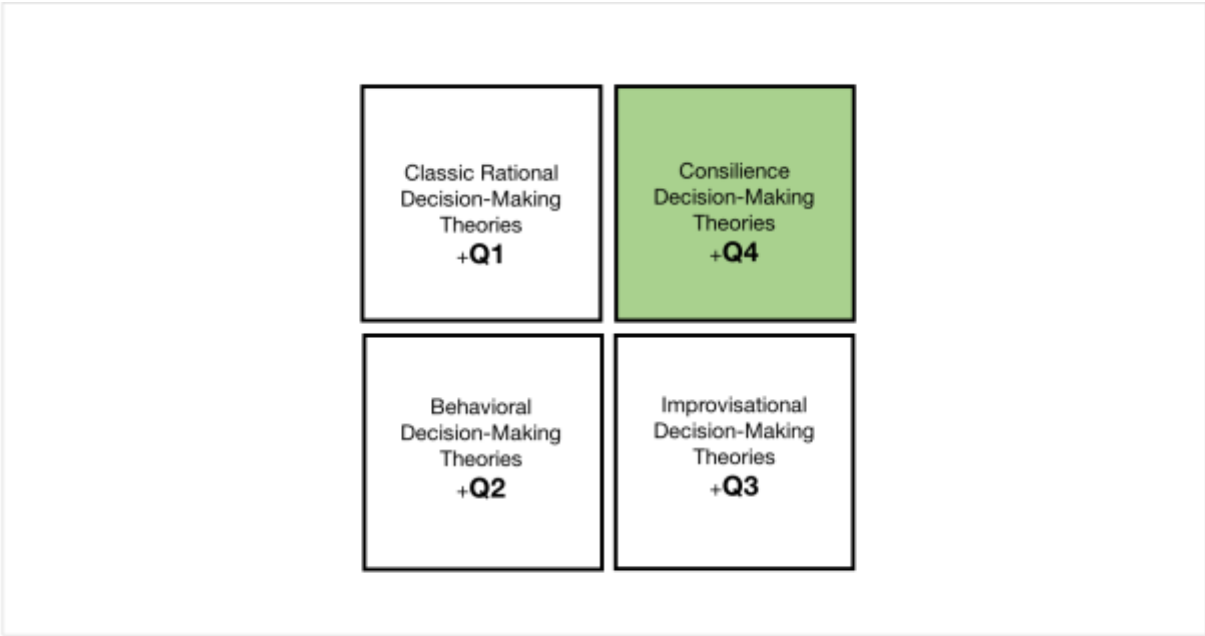
Figure 2.1.4. – Decision-Making under Uncertainty Theories: Consilience

In the context of Strategic Decision-Making under Uncertainty, Consilience Models are thus not perfect confluence of knowledge alignment models but rather collaborative problem-solving vehicles where different vantage points are considered an asset. Traditional power models perceive differentiation as a liability, noise, waste that needs to be 'corrected' with traditional hierarchal power, social conformity, waste management that induces stakeholders to conform. Consilience seeks to build and manage the platforms where such differences can be an asset during strategic decision-making under uncertainty.

Some of the changes in society that highlights the importance of this quadrant is that decision-makers are facing a new kind of challenge that did not exist half a century ago. Specifically, in management barriers of entry is continuously lowered, a glut of information streams is demanding attention, as well as the various waves of disruptive change has the capacity to redefine the context of organizations and markets. One wave has to do with the rise of the Internet based "new" economy and its driving force, the process of digitization (Castells, 1998; Kelly 1998). A second has to do with the rise of new relational patterns and their underlying driving forces: the processes of globalization (of markets, institutions, products), mass customization (of

products, people, and their careers), and increasingly networked structures and web shaped relationship patterns (Castells, 1996). Responding to newer types of challenges thus introduces the need for more complex solution systems and a longer time-horizon vision (+S).

Using specifically strategy theory and models, innovative Consilience decision-models will be compared and contrasted with each of the other three models to clarify Consilience models as a distinct category of strategic decision-making under uncertainty that this thesis seeks to empirically capture. Figure 2.1.4. provides a refresher on the Consilience models coded in relation to other strategies for decision-making under uncertainty.

Consilience vs. Classic Rationality Theories and Models

Looking at Consilience decision-making as categorically different from classic rationality decision-making theories it may be most useful to start with similarities. Graphic representations highlight their adjacent approximations and the fact that both share a systematic drive towards progress, development and evolution. However, where classic rationality conforms to replicating best practices and thought processes that can be internally controlled, Consilience decision-making models ventures into high-risk and uncertain territories, crossing boundaries and maximizing potential for creativity.

Drawing from negotiation strategy theories may be especially helpful in illuminating the difference in approach and possible outcomes to strategic decision-making under uncertainty. On the one hand is Distributive Negotiation which focuses on positions staked out or declared by the parties involved, each of whom is trying to claim certain proportions of the available pie. On the other hand, is Integrative negotiation or principled negotiations. This approach focuses on the merits of the issues, and the parties involved trying to enlarge the available pie rather than stake claims to certain portions of it (Fisher and Ury, 1983).

It is also ultimately the work of innovation researchers that provides the best insight into illuminating the details of this category in discussion of 'lower-risk strategic innovation' and 'higher-risk strategic innovation' as decision-makers decide where

and how to invest their time and energy for what they perceive to be the best return. In a two-part discussion of Pisano's (2015) Innovation Landscape map (Figure 2.2) the first part will focus specifically on which he refers to as "innovation that requires new technical competencies."
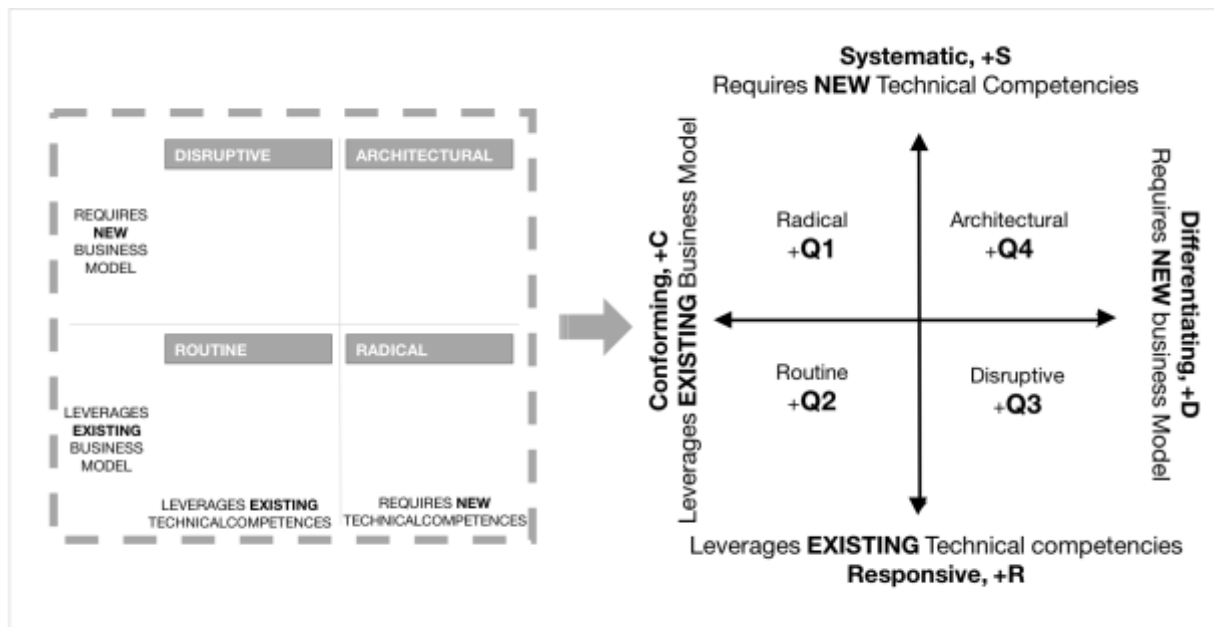
Figure 2.5 – Pisano (2015) Innovation Landscape Map mapped onto the Model

Pisano labels innovation that conforms to an existing business model but systematically seeks to improve the technology to solve problems as *radical innovation*. A significantly more glamorous term than 'classic rationality' or 'technical rationality' which we also commonly used, but still driving at the same points. Here the challenge is purely technological. The emergence of genetic engineering and biotechnology in the 1970s and 1980s as an approach to drug discovery, is an example. Established pharmaceutical companies with decades of experience in chemically synthesized drugs faced a major hurdle in building competences in molecular biology. But drugs derived from biotechnology were a good fit with the companies' business models, which called for heavy investment in R&D, funded by a few high-margin products.

What makes the *classic rational innovation* (or radical innovation) different from the *Consilience* innovation (or architectural innovation) is that the latter simultaneously takes on technological and business model challenges simultaneously. An example is digital photography. For companies such as Kodak and Polaroid, entering the digital world meant mastering completely new competences in solid-state electronics,

camera design, software, and display technology. It also meant finding a way to earn profits from cameras rather than from "disposables" (film, paper, processing chemicals, and services). As one might imagine, architectural innovations are the most challenging for incumbents to pursue.

Consilience vs. Behavioural Theories and Models

Both Consilience and Behavioural decision-making strategic stances are concerned with the human collective as opposed to more inward facing individualist forms of innovation. And as this collective is concerned with innovation and strategic decision-making under uncertainty it ultimately boils down to power. The British philosopher, Bertrand Russell, defined power simply as the ability to produce intended effects (1986). But how the two different strategic stances go about harnessing and channelling power is significantly different.

Old Power Values	New Power Values
Managerialism, institutionalism, representative governance	Informal, opt-in decision making; self-organization, networked governance
Exclusivity, competition, authority, resource consolidation	Open source collaboration, crowd wisdom, sharing
Discretion, confidentiality, separation between private and public spheres	Radical transparency
Professionalism, specialization	Do-it-ourselves, "maker culture"
Long-term affiliation and loyalty, less overall participation	Short-term, conditional affiliation; more overall participation

Table 2.2 – Old Power and New Power values (Heimans and Timms, 2014)

Hermans & Timms (2014) identifies two types of power. They equate *old power* to a currency. It is held by few. Once gained, it is jealously guarded, and the powerful have a substantial store of it to spend. It is closed, inaccessible, and leader-driven. It downloads, and it captures. *New power,* on the other hand, operates differently. It is more like a current. It is made by many. It is open, participatory, and peer-driven. It uploads, and it distributes. Like water or electricity, it's most forceful when it surges. The goal with new power is not to hoard it but to channel it.
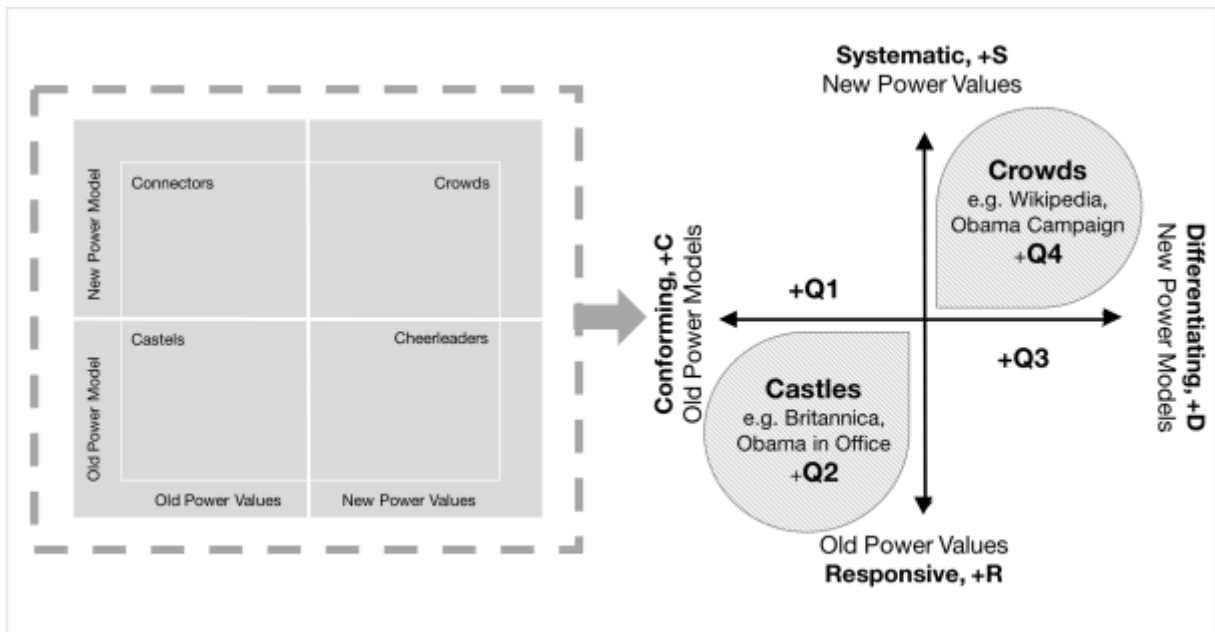
Figure 2.6 – Hermans & Timms (2014) Old and New power in collaborations mapped onto the Model

As pictured in Figure 2.3 relaying this old and new power can be expressed in both business models and values. To maintain simplicity in contrasting Behavioural and Consilience decision-making models, only the purest form of old power (pertaining to both values and business models) and new power (pertaining to both values and business models) will be unpacked.

Herman & Timms (2014) labels the quintessential combination of old business models and values as *Castles*. US President Obama, the ruler of the free world's pragmatic politics can be categorized as a *Castle* because the presidency traditionally has a strategy of exclusivity and has executive powers to legislate certain types of policies from the top down. It is also renowned for secrecy and aggressive protection of information. Fascist dictators would be an even more extreme version of old power. This high level of control wielded by the top strategic decision-makers thus results in pressure to conform and especially in the US a kneejerk responsiveness to like or dislike a policy not based on careful systematic study of its content, but a bias party affiliation predisposition causes for it to traditionally operate under a responsive modes of strategic socio-cognition.

Likewise, the quintessential combination of new business models and values is labelled *Crowds*. Using the example of President Obama before he came to formal power his record breaking campaign was also Consilience by leveraging the power of

the crowd when it came to campaign donations and grassroots efforts. This is where established peer-driven players, like Wikipedia, Etsy, and Bitcoin, and newer sharing-economy start-ups, like Lyft and Sidecar would be categorized. This quadrant also includes distributed activist groups and radically open education models. Based on these innovators' break from traditional power that diverges and the capacity to quadratically scale.

Consilience vs. Improvisation Theories and Models

Both Consilience and Improvisation Models are thus on the differentiation and exploration side of innovative strategic decision-making under uncertainty. Both thriving strategically under higher levels of uncertainty. The model's 'textbook answer' for how each occupy opposite ends of the same continuum thus boils down to Improvisation being the more responsive category and Consilience the more systematic and hyper rational category of strategic decision-making under uncertainty.

Apart from often relating improvisation to planning, improvisation is also often related to time (Moorman & Miner, 1995; Vera & Crossan, 2004; Weick, 1993; Crossan, Cuhna, Vera & Cunha, 2005). The next question would then be, if illuminating the differences between Improvisation and Consilience's disposition towards time can be observed? Here it is especially important to distinguish between different ways time can be viewed (e.g. objectively, subjectively, event horizons.) In this specific instance, we are contrasting the definition of time referred by its most common application as defined by Lee & Liebenau as:

> "Homogenous and divisible in structure, linear and uniform in its flow, objective and absolute, that is, existing independent of objects and events, measurable (or quantifiable), and as singular, with one and only one 'correct time'" (Lee & Liebenau, 1999: 1037)

For disambiguation, clock-time is distinct from machine-time defined by computing capacities (Adams, 1995), social-time define by unbounded field of dure´e and kairos (Jaques, 1982), epochal-times defined by events (Bluedorn, 2002).

With respect to clock-time the research, Crossan, Cunha, Vera & Cunha's (2005) resulted in a 2 x 2 matrix pictured in Figure 2.4 A. Having already established that relatively to conforming strategies, differentiating strategies operates under

conditions of higher uncertainty, and that the highest possible clock-time pressure would result in spontaneous physiological improvisation, and spontaneous social responses in bounded rationality, we can deduct the rest as depicted in Figure 2.4.
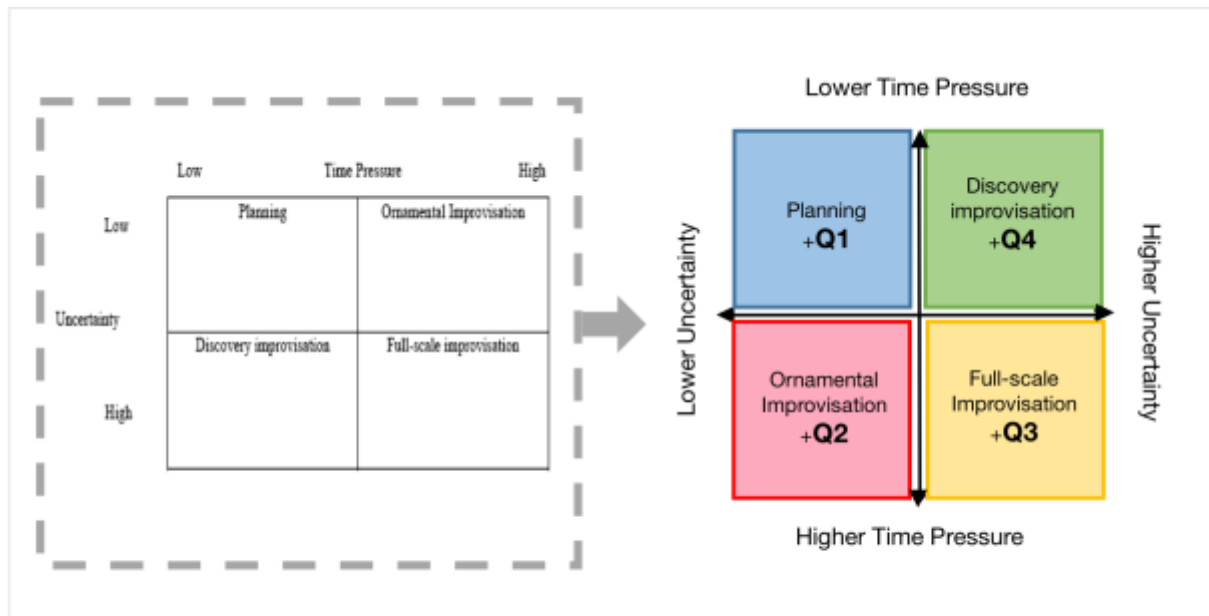
Figure 2.4. – Crossan, Cuhna, Vera and Cunha (2005) Scenarios of Improvisation in Organizations mapped as Decision-Making under Uncertainty categories

The term *Full-scale improvisation* in the context of this figure would be a scenario characterized by physiological spontaneity (as opposed to social spontaneity) and high creativity. It strongly aligns with what we have referred to as the baseline for improvisation. In this extremity, it would be the most challenging strategic stance because it makes planning impossible when time is scarce and the environment is undecipherable. These circumstances characterize crisis situations and rapidly changing environments. Firms that persist in planning under these conditions find themselves frustrated by the simultaneous pressure to act and the inability to understand what is going on around them (e.g., Roux-Dufort & Vidaillet, 2003). Once strategic decision-makers select the improvisation strategic stance, (Weick, 1998a: 59) characterize the next steps as "wading into situations with fallible knowledge, secure in the belief that they can recombine that knowledge by shifting their fallibilities around. Faith in their ability to 'make do' infuses confidence into their balance of knowledge and doubt."

As a point for quality control reference, the term *Ornamental* Improvisation is the context of this figure would then be a scenario characterized by social spontaneity (as opposed to physiological spontaneity) and low creativity. It strongly aligns with what we have referred to as the baseline for behavioural models. It is one of the more common strategic stances often embodied by followers. The word Ornamental used in this context to describe improvised behaviour that results from minor adjustments to a routine (Moorman & Miner, 1998b; Preston, 1991; Weick, 1998b). The environmental cues are clear, and firms need only structure their response quickly. High spontaneity and a strong influence of prior routines and experience. Moorman and Miner (1995) provide examples of this scenario when they describe how product development teams improvise new marketing campaigns in response to clients' or competitors' feedback on previous efforts.

Neither of the ornamental or full-scale improvisation discussions are fundamentally adding new knowledge or awareness to the concepts that this thesis is labelling improvisation or behavioural strategic models and theories. Nor would discussing explicitly how 'planning' aligns with Technical Rationality or classic rational decision-making under uncertainty. That point has been made and discussed thoroughly to this point. However, seeing the concepts reappear and making sense in its descriptions and relational comparative qualities (even when different keywords are used) do serve as independent affirmation when theorist from different fields converge and agree while pursuing different goals and using vocabularies. Where the Crossan, Cunha, Vera and Cunha (2005) does however make fundamental contributions is in the context of 'discover improvisation' or what this model is referring to as a consilience strategic decision-making stance.

Per Crossan, Cunha, Vera and Cunha (2005) another common improvisational scenario is that of "discovery improvisation," in which uncertainty, not time, is the problem. However, even if there is time for it, systematic planning comparative to that of technical rationality is unlikely to occur. The reason is because there is too little or too much information. So, instead of planning and then acting, decision makers do a different type of 'improvisation'. Here the decision makers rely on a low level of spontaneity or responsiveness, so the processes are predominantly systematic. However, what makes this systematic approach different from its planning rich

counterpart is that in the context of strategy it still constitutes a high level of creativity, and a rich combination of past knowledge.

In the context of Consilience, strategic stances decision-makers act first and then make retrospective sense of their experience in order to act again. This type of decision-making often occurs in product development experiments, especially with software and pharmaceutical drugs. Experiments usually involve an iterative cycle of steps to design, build, run, and analyse (Thomke, 1998). But as environmental turbulence increases, these steps start to overlap and occur simultaneously (e.g., Eisenhardt & Tabrizi, 1995; Iansiti, 1995; Leonard, 1995). One of the most famous commercial examples of this may be the development of the Postit® note (Peters & Waterman, 1982). Using a "failed" glue to make temporary placeholders on sheet music demonstrates great creativity. In this example, there was a low level of spontaneity, low time pressure, and a high degree of uncertainty regarding the application and commercialization of the product—processes that required decision-makers to take actions and learn from the outcomes.

Theory and Application

Ultimately the theories connecting back to consilience models and theories are the most disjointed. This is partially due to its complex collective nature as it pertains to decision-makers and stakeholders when traditional power structures cannot be assumed. The strategic decision-maker's point of view and time-horizon is thus paramount. Take for example the concept of disruptive innovation (Christensen, 1997) defined as a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors. Taken from the Consilience strategic decision-maker(s) point of view, the time-horizon would be long and most likely involves the strategic decision-maker taking the risk of intentionally cannibalizing its own market with a new technology because as time goes by it has capacity to produce technology cheaper and more accessible market solutions *while* pursuing a new wider market. Though a revenue streams may be associated with this, a decision to take this strategic risk may also be in service of protect the higher end market from competitor entry. In the case of technology quadratic scaling is likely to be involved for example

if the strategic decision-makers at the helm of Britannica Encyclopaedias also launched Wikipedia.

However, it is important to recognize that for the purpose of this strategic decision-making under uncertainty thesis there are two distinct classifications of *disruptive innovation*. The most commonly framed type (also illustrated above) is if strategic decision-makers are transferring existing solutions from one market to a new unrelated market. This is more likely to be considered to be improvising decision-making which may also include imitators, patent trolls or purchasers of an orphan technology. Commercially this happens when start-ups like Netlix tries to compete with Blockbuster by sending DVDs though the mail, and Uber tries to compete with traditional taxi services by introducing a two-sided market app. This second type of disruptive innovation is more likely to occur when strategic decision-makers calculatedly risk cannibalizing their own market with a new technology and model. Here the more mature Netflix's decision to pursue streaming video after successfully launching in the mailed DVD model, and later again the same type of decision was made to pursue original content production in conjunction with the streaming video.

New technological paradigms seldom spring full-blown from the minds of their inventors, and when they do, as in the case of Arthur Clarke's vision of communications satellites, the visionary is unlikely to be the person who makes the technological dream come true especially as complexity and uncertainty increases. This does however happen as in the case with Intel and the low-end microprocessor as well as Netflix moving from mail order to streaming services over the past two decades.

2.3. Conclusion

Ultimately each of the four discussed categories of decision-making under uncertainty theories and models is shooting roots not only in management literature, but also appear to be growing in adjacent fields concerned with decision-making under uncertainty. In some instances, the vocabulary is shared but in some in others it appears to have sprouted from unrelated origins. Fundamentally it however appears to converge on very similar principles with shared themes. Each of the four quadrants have produced and fruitfully verified extensive variations of models and

proven their unique contributions to the field of knowledge (all be it in more isolated categories and under keywords not central to decision-making).

What is however novel being two things: i) first there is an overlay of these models in relation to the aforementioned core drives; and ii), the integration of models to the right of the y-axis more commonly associated with *innovation* (as oppose to decision-making) while the models towards the left of the y-axis more commonly associated with *decision-making* (as opposed to innovation) is within this taxonomy classified in relation to each other on a single continuum.

These two novel contributions combined are especially valuable in the context of this thesis as it extends a greater overarching theory with nested models in informing the broader point of view on decision-making under uncertainty and ultimately paves the way for a next iteration on the construction of the resulting strategic decision-making under uncertainty model.

Finally, in linking the decision-making drives and decision-making and innovation combination models to the concept of emergence, change, adaptation and transformation, yet further integration of management concepts will be needed. For the purpose of this model the academic literature base of change management and strategy will be the core important contributors to evolve the strategic decision-making under uncertainty theory and model to yet another level of sophistication. In the next chapter a research methodology will be discussed that is capable of integrating as much of these different theoretical lenses as possible in a meaningful and synergistic way.

CHAPTER 3

RESEARCH METHODOLOGY, METHODS, AND ANALYSIS

3.1. Introduction

As has been gradually emerging from chapter 2's theoretical lenses (and even more vividly in retrospect) gathering data on systematic aspects of strategic socio-cognition was not going to be good enough. In gathering empirical data on strategic decision-making under uncertainty, space needs to intentionally be created for the unexpected and dealing with unforeseen elements in real-time. It was thus imperative to design a methodology that is capable of picking up unexpected peripheral data that was not 'in the plan.'

In the terminology of the dominant theories, the descriptive framework needed to be able to integrate both rationality and behavioural, both qualitative and quantitative. This expectation also started to limit the types of viable research methodologies. And considering that the initial research question focusing specifically on how the ideas emerges, develops, changes, adapts and transforms over times the methodology needed to be robust in the type of data that it included for consideration. Chapter 3 unpacks the research methodology, methods and analysis used in the construction, verification and refinement of the M³.

3.2. Methodological Principles and Research Design

A central premise in selecting the best methodological principles to facilitate model construction revolved around the fact that to truly allow social realism an opportunity to emerge from the ground up in management research, it needed to not be too narrow an approach. Specifically, the research methodology needed to allow a researcher to work on integrating multiple theories. To that criterion Blalock (1991) offers a clear and definitive path: qualitative research. His argument being, that the deductive nature of quantitative processes forces the researcher to work within a single theory rather than to challenge or extend it.

3.2.1. *The Extension on the Choice of Qualitative Research*

Bryman's (1993) discussion of qualitative research also illuminates the weakness of qualitative research that needs to be proactively addressed in the context of this specific thesis. He defines qualitative research as an approach concerned with the social world, and looks to explain and analyse the culture and behaviour of [persons], from the point of view of thesis being studied. Yet in the construct of social realism there remains a need for also considering the objective functions of absolute truth as distinctive from relative truth. To this challenge Maton (2010) Young (2011) asserts that epistemologically social realism does not preclude qualitative research from also including objective quantitative measures. Minchiello et al (1990) furthermore distinguished between the Conceptual and Methodological choice of qualitative and quantitative research. Methodologically this thesis ultimately choses to rely on a bold and expansive, yet robust methodological approach that is also no less of a systemic than quantitative research (Miles and Huberman, 1994; Eldabi et.al., 2002).

Eldabi et al's (2002) and many others' assertion that the contextual understanding of qualitative research providing a systematic, empirical strategy for answering questions about people in their own bounded social context, yet the direct and in-depth pursuit of knowledge of a research setting or set culture still provides some limitations in the context of inter-organizational collaborations where the lines of the Bourdieu 's (1997) subject 'field' is more blurred. In many respects during idea development in the context of inter-organizational deliberations new rules of the game gets drawn up in the process of collaborating. The researcher and strategic decision-maker (participant) in such a context thus have a similar learning curve stepping into a new working culture.

The advantage of viewing behaviour is context of a social setting does however seem to provide a greater depth of understanding, allowing greater flexibility. This is also important as decision-making locals move around and increasingly information technology become a social setting in which ideas conceived and developed. Strauss and Corbin (1990) furthermore claim that qualitative methods can give the intricate details of phenomena that are not easy to express with quantitative methods. In this specific thesis, however both qualitative and quantitative representation are needed to make progress on complex concepts.

This specific thesis strives to further the growing recognition that a 'holistic real-world answer to real world problems' is the way, but unlike Newman (1991) and Tesch's (1990) claims, this thesis does not preclude quantitative context from also proving necessary context.

What is however a concern being that Qualitative methods produce a wealth of detailed data on a small number of [phenomena] (Patton, 1991). Generally speaking, Glaser & Strauss' (1967) solution is to focus the qualitative research on that which is usually the most "adequate" and "efficient" way to obtain the type of information required, while contending with the difficulties of an empirical situation.

The fact that qualitative research takes a less planned approach (Eldabi et al, 2002) is ultimately one of the most important and attractive qualities in the context of naturally researching decision-making under uncertainty. The fact that it has more of a preference towards judgmental and expert knowledge rather than hard data is less attractive. In this thesis, extensive effort will be put forth to patch the holes of qualitative research with quantitative supporting materials across the multitude of case studies. Also, formal logic of deductive reasoning combined with induction will be used to explore categorical, relative as well as dynamic trajectory patterns to inform model, and theory development of strategic decision-making under uncertainty, as well as practical application in management and research.

3.2.2. Research Paradigm

A second implication of using qualitative rather than quantitative research as a keystone in the development of the strategic decision-making under uncertainty model concerns directing effort towards descriptive versus prescriptive model building (Brazerman, 2006).

P*rescriptive models (or normative models)* provide mathematical models that help decision-makers act more rationally by developing and proving methods for making optimal decisions which takes an omnipotent decision-making scientist and creator with controlled and designed experimental conditions, this specific thesis would not be able to make a strong direct contribution to prescriptive models during this specific thesis. It would however seek advance and explore knowledge to inform

future such models as the theory construct is indeed built upon positivist principles of decision-making. But in its primarily qualitative design this would entail more of a supportive contribution.

Conversely, building a *descriptive model* (or *positive model building*) for decision-making under uncertainty also considers the bounded ways in which decisions are actually made (Bazerman, 2006: 6-7). It entails decision theory concerned with describing observed behaviours under the assumption that the decision-making agents are behaving under some consistent rules. Highly regarded descriptive decision-making models have been especially successful in making sense of the gaps in rational models. To name just a few, game theory decision-making pioneers' Von Neumann & Morgenstern (1944) used descriptive model building axioms with behavioural violations of the expected utility hypothesis to produce the Von Neumann-Morgenstern axioms, Laibson (1997) used an explicitly functional form of time-inconsistent utility functions to produce his Quasi-Hyperbolic Discounting. Amos Tversky's (1972) used consistent behavioural rules to derive a procedural framework for his Elimination by Aspects Model.

3.2.3. *Epistemology and Ontology*

Within the research paradigm of qualitative descriptive models, a valuable next level of clarification can be derived from also addressing *epistemology* and *ontology* (Guba, 1990). Both concerned with the philosophy of knowledge, epistemology answers *"How does one know?"*, while ontology is about describing things and their relationships to answer the question: *"What is used to know?"*

Epistemology

Epistemology thus describes the approaches we can chose to understand our world. As established in Chapter 2 an important contribution this thesis is attempting to make to management literature is the introduction of social realism as a viable epistemology that combines essentialist and relativist philosophies of knowledge.

Social realism builds on the 'field' theories of Pierre Bourdieu (1994, 1996) and 'code' theory of Basil Bernstein (1977, 1990), and emerged from discussions among a range of sociologists in the field of education in the late 1990s and early 2000. (Maton &

Moore, 2010). It highlights knowledge as the basis of education as a social field of practice arguing that the choice between essentialism and relativism is false: we can say that knowledge is historically and socially situational and shaped by struggles among social groups without saying this also means knowledge is equal and its status is merely a reflection of social power. Social realism acknowledges that knowledge changes and is shaped by relations of power but maintains that this is not the whole story. Not all knowledge claims are equal - some are more epistemologically powerful and offer better explanations than others (Moore, 2009). Exploring the collective procedures whereby judgments of the comparative value of knowledge claims are made by academics or teachers has thus been a central and ongoing focus of social realist research.

This thesis makes the case that the social realist principles of collective construction on knowledge claims can also be applied outside the field of education. Especially relevant to management studies it especially offers value in constructing a vocabulary, framework and research tools for gaining insight on emergent innovation. Social realism claims that different forms of knowledge have effects for intellectual practices: knowledge may be social but it is also real. Against knowledge-blindness afflicting existing accounts of social change more generally, social realism brings the forms taken by knowledge into view and an excellent vehicle for demonstrating that would be emergent innovation.

A central (and first) example of a social realist framework is Legitimation Code Theory (LCT) (Maton, 2013). LCT is less a set of claims about the nature or purpose of knowledge and more a conceptual toolkit for research. The framework allows research to get beneath the surface features of empirical situations to explore their organizing principles or 'codes'. A useful analogy is to think of the genetic code that lies behind all our differences and similarities such as height, weight and so on. LCT aims to get at the genetic code of practices, in order to reveal the fundamental 'rules of the game' or basis of achievement ('legitimation') of different contexts, the way they develop over time, what they enable or constrain, and how they relate to the dispositions actors bring to those contexts. Strategic Decision-Making under Uncertainty Model codes are thus the second theory to emerge out of the social realist epistemology and the first in the discipline of Management Studies.

Ontology

Building onto the epistemology that a dichotomous relationship need not exist between knowledge being simultaneously absolute and relative, the philosophical position of the ontology then presses forward on *what is the nature of reality*. Buber (1958), an existentialist, espouses the belief that people cannot understand others the way they understand objects, but rather, human understanding requires a relationship of openness, participation and empathy. Its point of differentiation from the Cartesian method of analysis is marked by the fact that the world is not seen objects, sets of objects, and objects acting and reacting upon one another. Instead it is a "descriptive psychology" of intentions presented in an objective or interpretive, non-judgmental framework.

Yet in the context of this thesis the ontology is even more complex than compartmentalizing a world of people vs. a world of objects. Specifically, in the world of ideas driven by a philosophy of strategic stances with a predominant predisposition towards decision-making under uncertainty. To this, one solution is to turn to the work of Edmund Husserl (1859–1938) founder of modern phenomenology.

Husserl (1970) defined phenomenology as a nature of inquiry primarily concerned with the systematic reflection on and study of the structures of consciousness and the phenomena that appear in acts of consciousness. Focusing attention on the deeply embedded frameworks of tacitly known, taken-for-granted assumptions through which humans make sense of their lives (Yanow, 2006:15).

Further aiding in the qualitative research alignment discussed in section 4.2.1, and the descriptive decision model alignment in 4.2.2, Phenomenology is a branch of philosophy different from others in that it tends to be a one of the few branches of qualitative research that when focusing on topics usually regarded as subjective (conscious experiences such as judgments, perceptions and emotions) it is approached more objectively. It is thus well suited for this study's non-judgmental analysis of what happens in the critical first phases of innovation. Per alignment with the second section, in this alignment of objective pursuit of knowledge that includes

subjective subject areas phenomenology still seeks to be more descriptive (rather than prescriptive).

Predicated on the work of Husserl (1970), a transcendental phenomenologist, this thesis will thus build on the phenomenological foundation involved theorizing about how knowledge comes into being. Using the phenomenology terminology these experienced strategic decision-makers would then be regarded as *persons*, not *individuals*. This is because persons can be understood through the unique ways they reflect the society they live in. It is further believed that analysing human behaviour naturalistically when there are not enough resources for perfect information, collectives' decision-making under uncertainty can provide a greater understanding. And because phenomenology is considered to be oriented on discovery, research methods are less restricting. Assumptions are grouped through a process called phenomenological epoche, and data sources are referred to as capta.

3.3. The Research Process

Having established methodological principles that support and augment each other leaves resolving to a research process that tracks idea emergence, change, development, adaptation and transformation. To accomplish that a research process is needed that is truly socially responsive and behavioural, holistically natural and can be observed in relation to changing information relative to its real-time context.

3.3.1. *Methodology*

In answering "*How should the research study go about finding out knowledge?*" one of the first methodological iterations to emerge was Mintzberg's doctoral thesis which also happened to be a seminal 'structural observation' leading to a new model on the ten roles of a manager (1974). Using naturalistic research methods, he embedded for one week with five different executive decision makers to document their 368 verbal interactions (observations) and 890 correspondence artefacts (archived material) which they came in contact with over the time of observation. Though this methodology provided a strong starting point an exact duplication was not going to serve the best interest of this specific model construction because it did not meet all the necessary criteria.

As unpacked earlier in Chapter 3, in meeting the objective of constructing a descriptive model on strategic decision-making under uncertainty, research data or capta needed to allow for uncertainty and ambiguity so that it could be observed if and when strategic decision makers purposefully opt for uncertainty because they perceive they would be able to benefit from it. However, because this purposeful choice would sometimes be rational and sometime be happening below the threshold of awareness, the methodological option needed to be inclusive of both rational and behavioural research data markers.

Since the focus is specifically on high quality outcomes a purist view focusing exclusively on *interviews with expert* strategists engaged practically with decision-makers under uncertainty would offer assurances of quality data. However, in light of interviews' limitation as it applies distorting behaviours or rationalized reconstructivism in hindsight it may be a weaker option in gathering data on bounded rationality. Also, since some behaviour happen below the threshold of awareness, by definition, some of the deep bounded rationality this research would be very interested in analysing will have pre-verbal qualities which means the individual experiencing it may not be capable of observing and articulating insights about it themselves. Doing interviews with peers may improve this, but the social phenomenon of group think would still be limiting the level of insight that could be derived and still limit the quality of System II data.

A thoughtful and thorough review of *archived materials* leading up to a revolutionary idea's implementation could possibly have the same assurances of a high project being analysed, but is still unlikely to resolve the data discussed earlier associated with System II decision-making on account that documented materials is biased towards rationality and System I decision-making processes as well. Archived documents that could be retrieved for sharing would furthermore cluster towards the formal as opposed to informal which would result in emergent properties in the earlier 'draft' versions of ideas not being as accessible as the more mature and finalized iteration of an idea. Thus, even if high quality audio and audio-visual behavioural data are available, it would skew towards formal interaction processes and leave gaps on informal and pre-planned dynamics around an idea.

To address the *behavioural blind spot* that may be a concern in interview based research methods, and the *out-of-the-spotlight blind spot* that may be a concern in curated archived materials first-person observations does provide a solution. However, because first-person observations are more behavioural and informal and may have a *rationality and formality blind spot*, this model construction stand to benefit most from an integrated research method with data from first-person observations as well as interviews, archived materials: ethnography.

Emergence of Ethnography

With roots in Anthropology, Malinowski (1915) practiced and coined the formal concept of ethnographic research methods as the colonized 'other culture' in a natural laboratory "doing science". Around the same time the Chicago School of Sociology (1920) also helped ethnography gain scientific method status momentum as it focused on the 'other culture' in terms of class thus looking at urban poverty, deviance, and subcultures. In today's management studies framework, the process of contracting, and especially joint ventures, mergers and forming alliances is also a cultural practice, it thus makes sense to study emergent inter-organizational collaborations from an ethnographic point of view.

Initially the emphasis was on naturalism, the fly on the wall. Being unnoticed was equated with being truthful and reliable. 'Being there' it was argued, lead to authenticity of direct knowledge, and 'telling it like it is' produced an unvarnished journalistic truth. Based on descriptions like these it becomes evident how the genre was competing for validity by using the positivism rule book to establish itself, and makes it apparent how far this research method has come over the past century.

It was around the 1970 that ethnography as a social science practice increasingly started getting questioned by academics. And even though Max Weber (1864-1920) was dead for almost half a century by this time, the legacy of his work has had a profound influence on ethnographic methodology and theoretical thinking. Through the lens of the positivist values it is not hard to scorch holes in the fabric of ethnographies as a relative, biased person's perception of truth, quality of informants, manipulation by those with agendas, and the chronicles of an immersion experience. Geertz's (1973: 261) rebuttal to such critique was that the study of culture is "not an

experimental science in search of laws" but "an interpretive one in search of meaning." This led to a paradigm shift in what is truly the valid question to be asking, and Geertz helped frame that it is not about replication, but positioning and subjectivity that makes up the strength of this research method. It relies on our engaged selves as the instrument of knowing. Or in the words of Ortner (1995) "Ethnography…has always meant the attempt to understand another life world using the self – or as much of it as possible – as the instrument of knowing."

Today ethnographic research holds its own, in its own space by making clear the unique contribution that it makes to knowledge by tackling some of the limitations of exclusively quantitative research methods not concerned with depth and context. Also, though initially conceived outside the field of Management, ethnographic research has most recently received special attention specifically in the business world as corporations with increasing access to big data recognize its limits and start turning towards context rich ethnographic research to understand and market value propositions better by exploring consumer subcultures' needs, fears, and desires. (Anderson, 2009).

Confessional Ethnography

Using a single full-participant fieldworker committing to confessional ethnography (Van Maanen, 1988) or vulnerable writing (Behar 1996) a balance of the subjective and objective world is explored to fully immerse in both the rational and affective components associated with dealing with uncertainty. This unifying constant furthermore serves as a data point for comparisons across the different case studies' collaborations and increased the relative value of each case study relative to the full-participant (Barbour, 2014). This is also consistent with the principles of social realism where essentialism and relativism can and do combine in the construct of knowledge and truth. At no point are any responsive subjective impulses as participant-observer supposed to be misconstrued as critical ethnography. In Part II it serves as a consistent lens for data to be reviewed later in the context of the internal and external uncertain environment from which it sprung. It is the intent of this ethnographic study that the subjective and objective items be balanced in aggregate but the specific placement of high concentrations of rational vs. affective responses also represent data.

Ethnography Snapshots

In the context of this specific thesis the ethnographic narrative is presented similar to the 'portrait' style pioneered by Willis (1981) and Foley (1990). Each collaboration's development unfolds with the rich description of the most important eight 'snapshots' of each collaboration. Each snapshot revealing in detail the conditions under which the central idea underwent a pivotal or iterative transformation, (or in some instances boldly reinforced an existing stance) when the space was created to theoretically allow for change over the course of multiple years.

Each snapshot utilizes different communication mediums and had different members of a leadership collective present. All these will be pointed out in relation to the context of the bigger picture. Special focus will be put on including the answering generally accepted ethnographic questions like the following:

1. Layout of the space or room
2. Specific objects or physical elements in the space
3. Discussion on the people involved
4. Clues to signify participants and actors' statuses and roles
5. Decision-makers and their influencers general actions or the communicated intent of their actions.
6. Explicit structures, rules, or norms govern the situation
7. Attire
8. Affect
9. Communication mediums and methods
10. Specific verbal and non-verbal communication of participants and actors

3.3.2. *Data Sources*

As explored earlier, ethnographic methodologies rely on three type data sources: i) observations, ii) interviews (or conversations) and iii) archived material.

Observations

Observational methods refer to data gathering techniques that focus on experience as they unfold' (Grove and Fisk, 1992:218). It includes physical actions, verbal and

expressive behaviours and spatial relations, using multiple senses to maximize findings (O'Leary, 2004; Zikmund et. al, 2013).

Observations provides 'real world' insight (Grove and Fisk, 1992:218) and produce more complete accounts of decision makers' experiences (Eriksson and Kovalainen, 2008; Keans, 2010). Specifically, in pursuit of knowledge on the early phases of innovation ethnographer field workers should observe, first hand, innovations in their own 'natural' setting (Myers, 2013:137, Marshall & Rossmann, 1995) and not just rely on 20/20 hindsight and rationalized accounts.

Surveillance can range from covert and unobtrusive (O'Leary, 2004: 87) to full participant. In the context of this specific ethnography it was appropriate and necessary to the data collection phase to immerse the field worker fully. Observations were also unstructured (or set by strategic decision-maker or facilitator's agenda) and allowed for the 'recording of the unplanned and/or unexpected' (O'Leary, 2004: 173)

Fayol (1916), considered by many as the Father of Management, introduced the first theory on management by documenting his observations over the course of 30 years embedded in a single corporation in France. Others followed suit as Carlson (1951) developed the diary method to study the work characteristics of nine Swedish managing directors. It entailed each individual detailing and logging personal activities. Subsequent users have legitimized the approach, notably Stewart (1967) where 160 top and middle managers of British Companies described their work for four weeks. She then analysed the differences between their work.

Sayles (1964) studied the work content of middle and lower-management level decision makers in a single large US corporation. He used what was referred to as an 'anthropological' approach. Sayles move freely in the company collecting whatever information struck him as important. Guest (1956)'s strategic decision makers were foremen. 56 US foremen were observed during one of their eight-hour-shifts. Each of their activities were recorded for analysis.

Hodgson, Levinson and Zaleznik (1965) analysed the strategic decision makers at a top US hospital. By zeroing in on the relationship between three top executives they could investigate in particular the ways in which work and socio-emotional roles were

divided between the three managers. Even Whyte (1955)'s embedment with a street gang ultimately allowed Homans (1950) to analyse how the strategic decision makers of a street gang share some interesting similarities of job content with corporate managers.

Collis and Hussey (2003) however contents that observations in itself is not enough. They criticise that the observations are just assumptions from afar whereby visibility and hearing is constrained to result in inaccurate analysis of situations. To this concern this thesis included extensive interviews and archived material to corroborate ideas and provide context.

Interviews (Conversations)

Specifically, hen observations are combined with interviews the chances of misinterpretations of actions, decisions and bigger picture objectives are dramatically reduced (Bryman & Bell, 2007; Froggatt, 2001; Dumay & Qu, 2011; Silverman, 2005). Interviews have rich potential to enhance the observations during an ethnography on account that it specifically offers insight into the rationalization which is a critical component of this model. Charmaz (2006: 142) may have intended to be cautionary when he also defines interviews as potentially bleak with respect to absolute true as he explains the limitations of interviews as "retrospective accounts subject to reconstruction in view of present exigencies and purposes". However, in the context of decision-making under uncertainty such reconstruction with purposes was in fact important information and was captured conversationally by the full-participant field worker amongst the chaos and uncertainty of the project state time throughout the development of each of the ethnographic case studies.

With participants' consent interviews were either recorded for audio-visual, just audio, or handwritten notes depending on what suited the situation and what interfered the least with the interviewee's focus on the project. (Glaser and Strauss, 2009). A red research diary was carried in readiness to record developments in situ, recoding location, time and interpretation of scenarios to provide an overview of the concept development at that moment (Silverman, 2005). This red research diary also became a reference text during analysis of interviews, to aid verbal data collected from interviews (Kearns, 2010). Reflective field notes were also documented

retrospectively with hours or days processing time to reflect critically on patterns and anomalies.

With concern to the 'interviewer-effect' (Denscombe, 2010: 178) this thesis accepts and also discloses the fieldworker's relevant affective and philosophical predispositions by including the ethnographic data as a confessional ethnography. The reason it is deemed data as oppose to noise or contaminant in this specific thesis, is because affect and philosophy is speculated to have an impact on decision-making under uncertainty. Where possible this information was also captured and recorded on other participants in the leadership collective. This affective disposition also serviced as a constant for comparative purposes between the different collaborations against which data can be measured.

What was however important was that the full-participant field worker stay open and interested in hearing and integrating when other participants said something that ran contrary to expectations and to sincerely respond to ensure clarity in understanding an alternative point of view. Recorded and transcribed interviews was helpful in serving that function. Interviewees were given the chance to speak freely about behaviours, beliefs, events and perceptions in relation to the research topic as well as non-related topics. Overall the research data is created and grounded in these lived experiences of decision-making, which are now exposed and explained.

After a prolonged lag time of the full-participant field worker being removed from the collaboration a final set of semi-structured interviews were completed with key participants to reflect on the idea development period retrospectively. This final interview was directed by the emerging concepts from the narrative. Involving strategic selection of informants and interviews protocols were more structured (Glaser & Strauss, 1967; Charmaz, 2006). For this end, 40 pivotal decision makers were selected across the five collaborations aiming to saturate data and authentically sustain the resulted new model for strategic decision-making under uncertainty (Glaser & Strauss, 1967).

Archived Material

Secondary data sources also have a 'rich potential' to enhance an intensive investigation (Crowton, 1998: 427). Despite concerns that secondary data may be historical and unspecific, these limitations are overcome by triangulating inferences with various forms of primary research in ethnographies.

In the context of decision-maker research Neustadt (1960) may be an exemplary example of having used no observation but rather a combination of archived materials and interviews to study presidential strategic decision-makers Roosevelt, Truman, and Eisenhower. Through the lens of secondary sources - documents and interviews with their collaborators and subordinates - he generated his data to make a meaning contribution to knowledge.

In the context of this thesis archived Material also allows for the use of verbatim quotes be it from documents or recorded audio-visual, and in the modern context of research analysis research have increasingly more access to informal backstage interactions via email, voicemail and text message archives.

3.3.3. Sample

Ethnography challenges the value of a representative sample. There are detractors who still advocates that qualitative research could ask for a representation sample of the population under research. However, Gerring (2006: 709) makes the point that though case studies are not representative samples of a broader population, they nonetheless are reflections of larger phenomena. Yin (1994, 2009) also offers a solution by differentiating between statistical and analytical generalization. The latter would thus apply to case studies where convergent evidence is sought analogous to using multiple experiments to duplicate the results from previous work.

Instead of following the principles of statistical random sampling, this specific case study approach benefits from identifying positive deviance sample (Tuhus-Dubrow 2009; Sternin and Choo, 2000) of exceptional experienced strategic decision-makers and first movers if we want to analyse innovation that has never happened before. Indeed, it is researching their process and intentions as the project evolve with entering and exiting partners. Purposeful sampling selects participants which meet

particular conditions to provide research specific data and this is thus a characteristic of qualitative studies (Patton, 2002). Purposeful sampling was also safe as the gate keepers where known and reliable and so their judgement was trusted. (Eriksson and Kovalainen, 2004)

In the context of analysing emergent innovation, a criterion of seven qualities were identified and shared with an intermediary one year before the model was conceived. The objective of the email was to identify a singular exemplary inter-organizational case study that hit as many as possible of the following criteria:

1. **Timeline:** We are hoping the project would commence within the next few months and that quantifiable results would be reviewable from the negotiation 12 months later
2. **Three (or more) stakeholders together at the table**: the logic behind this is very much in line with what you said about not having one powerful entity dominates the discussion but to maximize the chances of seeing a truly collaborative and innovative problem solving process unfold.
3. **Familiarity:** if at least one of the stakeholders don't have extensive experience working with the others that would give us insight into early stage processes.
4. **At least one stakeholder from the technology sector**: As you pointed out that is not necessarily where the innovation is strongest with your example of pharmaceutical and oil companies. But they may still be the alpha movers in networked communication structures due to their core competency in IT?
5. **International:** As we discussed, rich info may be gained from different cultures having different core objectives and approaches to be able to look at their conformity evolution shapes over time.
6. **Higher profile:** if possible something with a fishbowl visibility that may get public scrutiny (voters or stockholders) would be helpful to see how the difference in public and private conversations. You mentioned public sector deals and that may be ideal if one of the stakeholders is a government entity
7. **Location:** Purely for logistical and cost saving purposes we hope the in-person deal could be based in London if we were to spend approximately two months embedded…

Medium:	Email
Sender:	Fieldworker
Receiver:	Association President
Date:	28 June, 2013

In the months that followed the fieldworker started engaging with one collaboration after another keeping options open because emerging collaborations are shrouded in uncertainty as to their sustainability. A few months later the ethics paperwork was started and submitted for the collaboration deemed most viable (Collaboration 1), but one year later ethics paperwork was in place to analyse any Collaboration amongst 4 options. Six months later a fifth collaboration was also added. Ultimately each of the expert strategist collaborations maintained a prolonged period of development and underwent multiple iterations over the course of multiple years. Also, worth noting is

the fact that none of the collaborations' data had been discarded and all five collaborations were instrumental in the construction of the strategic decision-making under uncertainty model of this thesis.

One year after the seven point criteria was established the Ethics paperwork was in place summarizing the emergent innovation qualities at that specific point in time as:

> **[...] Collaboration 1: [Blue Chip Corporate General Council Idea]**
> In this project, I will be observing lawyers of IT suppliers, and customers as they try to develop a framework for collaborative contracting for complex projects. [...]
>
> **Collaboration 2: [Research Intensive University Idea]**
> This project brings together senior level management from [various universities and] departments with the objective of diversifying beyond the core undergraduate education focus and strengthening the university offering specifically as it pertains to post-graduate education (e.g. MOOCs, the launch of a Professional and Executive Development Centre, and alternative Post graduate taught programs).
>
> **Collaboration 3: [Economic Development Idea]**
> This is a project partly funded by a [City] Council and [a] University. It brings together approximately 50 individuals and organizations from the private, public and third sectors in order to create a prototype design of an enterprise city as part of [City] Council's strategic plan.
>
> **Collaboration 4: [Software Start-up Idea]**
> A start-up company is in the process of building collaborative relationships and material of value for offer to university Health and Safety departments, and to ultimately commercially launch a suite of videos and an ePlatform to be used by Small to Medium enterprises in the building and manufacturing sector....
>
> **Collaboration 5: [Corporate Wellness and Healthcare's Idea]**
> Start-up company that signed a license to partner with [one of the top research hospitals in the world] to commercialize a training program looking at healthcare solutions with a new integrated medicine dimension. Developed by world renowned doctors and psychologists, it has been illustrated to be successful with 60+ case studies and 150,000 participants over the past 6 years.

Medium:	Ethics Approval Request Form
Sender:	Fieldworker
Receiver:	Newcastle University Faculty of Humanities and Social Sciences
Date:	10 June, 2014 (21 January 2015 C5 addendum)

All five collaborations share and differentiate on a number of characteristics that make the sum of the parts even more valuable than what they are as individual case studies. In terms of the unifying characteristics, they offer a mode for comparative analysis:

- **Accomplished strategic decision-makers:** all strategic decision-makers are seasoned and accomplished at the top of their industries in England or the

US even though embarking on a collaboration and innovation that is shrouded in ambiguity and uncertainty. It also carries some sort of penalty for failure.

- **Collaborating Competitors:** All collaborations were collaborating with their industry competitors in an attempt to achieve something that none of them would be capable of accomplishing alone.

- **Contemporaries**: all of the initiatives launched between 2012 and 2013 by most standards of what would be defined as the genesis.

- **Nationality**: all the collaborations have British or US roots but include multiple nationalities amongst the collaborators.

- **Public-Private partnerships**: each of the partnerships depend on understanding and integrating the benefits and drawbacks of public as well as private offer to the other.

- **Full-Participant** in each of the collaborations the field worker was a full participant immersed to serve as an authentic, natural partner serving the collaborative team in solving the problem set by leadership collaborative.

Differentiating characteristics would include some of the factors that may help us understand divergent approaches used in strategic initiative shrouded in ambiguity and uncertainty:

- **Industries**: From professionally trained lawyers, academics, seasoned civil servants to turnaround king executives, to healthcare professionals, a diverse collection of professional industry background was represented.

- **Organization**: From publicly traded corporations, to elite education institutions, to sizable governing municipalities to the contrast of a software and non-profit start-up, each collaboration embodies a different set of organization values.

- **Approaches to risk**: from highly risk adverse dispositions collaborating by hiding behind an intermediary for anonymity, non-disclosure agreements, and no-compete contracts to competitors disclosing strategies for success and disclosing vulnerabilities like the company may not survive if it does not receive a cash infusion within the next 90 days.

- **Approaches to financial investment:** The initiatives represent various levels of cash and resource investment. The investment also came from a variety of sources internal to the organization, external to the organization, as well as individuals' personal pockets.

- **Approaches to rationality**: rationality was bounded in a number of different ways depending on the project included but not limited to: time, resource allocation, human resource selection, partner exclusion, not seeking true reasons for why some stakeholder partners abandon the cause.
- **Approaches to social norms**: on the one hand, some decision-makers were conscientiously researching what peers are doing so that they are not left behind whereas others had no interest in researching or assessing what others are doing and wanted to march to the beat of their own drum.

The success of securing Collaboration 1's participation was the result of obtaining the support of the aforementioned CEO of a high profile international non-profit acting as intermediary. Collaboration 2 was a result of the principal researcher's educator interest in Massive Open Online Courses and university administration strategy. Collaboration 3 started out as an attempt to earn money based on a proven track record as a successful economic development practitioner and grant writer. The project proved unsuccessful with respect to providing financial assistance. Collaboration 4 was the result of a laid off executive's request to assist in the initial stages of setting up a company. Collaboration 5 was the result of a request to join a non-profit advisory board. The field worker received no financial compensation for the services to any of the collaborations.

Beyond Collaboration 1, the intention behind initial participating in collaboration 2 through 5 was not designed for inclusion in a doctoral thesis but rather personal interest in certain types of collaborative initiatives with capacity to facilitate fundamental industry shifts. To that end, conversations and observations were documented in field notes almost daily over the course of a year plus, and archive material were preserved. It was mostly after long-term involvement in this combination of projects that the value of seeing the collaborations relative to each other became apparent. Patterns of collaborative emergent properties became clearer (and changed) over time. Permission for including the full formal and informal narrative of all five initiatives was thus a journey made official only after the Newcastle University Ethics Review committee approved the continually evolving research design and all participants signed off.

3.3.4. Summary

The strategic decision-making under uncertainty model is informed by five full-participant ethnographies that shares many aspirational and high standard qualities, but also demonstrates clear philosophical differences in how they go about accomplishing objectives across industries. And just like a rich diversity of professional strategists' fields were brought together with the collaborations, so too a concerted effort was made to capture not only formal but also informal data, rationalized and behavioural accounts, and the ambiguity of decision-making under uncertainty did not only naturalistically occur during the development of the industry solution, but also the research processes can benefit from remaining open to being surprised during the data and pattern discovery process.

3.4. Construction of Well-Informed Impressions

Well-informed impressions are the basis of this thesis with cross-checking, multiple data sources, and participant checks. The first component of the well-informed impressions includes the cross-checking data sources on as much of the continuum of public and private data sources could be viably secured. That includes considerable effort was put into securing both formal and informal data on each collaboration. On the formal end of the spectrum would be reports, minutes, agendas, press releases, presentation decks, edited videos and websites. On the more informal side it included conversations over drinks, napkin and whiteboard scribbles. It also includes rolling camera footage between takes and impulsive reactions to unexpected texts amidst tending to unrelated matters. Another dimension on the same spectrum of public and private socio-cognitive expression is the formal dissociative pedagogies that fundamentally underlie universally used workshops regardless if researchers, facilitators, participants, or strategic decision-makers recognized the relatedness to the stakeholder or participant group, or the collaborative approach leveraged up to the workshop date. Similarly, another other extreme type of the impersonal researcher non-effect spectrum would be the highly curated one-to-one emails (sometimes referencing past offline conversations) or videographer interactions that was facilitated outside my presence but that I was able to gain access to ultimately. Unbeknownst at the time this rich diversity of media used in communication captured ultimately lead to important discoveries on the dominant modes that ultimately facilitate different types strategic decision-making under uncertainty. Similarly, unbeknownst at the time, coincidental use of externally conceived and

designed workshops by all collaborations allowed for pure cognitive external reference point to compare intra-group socio-cognition in terms of comparative models.

The second component of the well-informed impressions included participant participation in the construction of the strategic socio-cognitive factors. On Collaboration 1 and 2 the strategic decision-makers were not informed when the fundamental four dimensions emerged out of the data towards the end of the period over which data was collected. On Collaborations 3 and 4 key strategic decision-makers were informed immediately as the four fundamental components of the strategy modes emerged approximately half way through the period of observation. On Collaboration 5 key strategic decision-makers were informed of the fundamental codes and throughout the initiative's development the codes were used as generally accepted terminology to discuss various ways to advance the project.

The third component of the well-informed impressions included giving multiple strategic decision-makers from each of the five collaborations an opportunity the opportunity to weigh in on the written summary of the project. In the process of closing the feedback loop key strategic decision-makers were invited to correct content details, recommend alternative important focus points as well as weigh in on the dominant strategic models if they felt comfortable weighing in. A sample of the theory summary on strategic models in laymen terms is included in Appendix C.

In response, each of the five collaborations had two or more key strategic decision-makers independently corroborate accuracy of the content as well as the snapshots picked as the strongest representation of the development of the initiative. As expected the more politically sensitized Collaboration (3) had a single individual that requested changing and augmenting data on exact words quoted. None of the changes materially changed the data from the point of view of the thesis. The request was honoured. The act of requesting words to be changed that had been captured in audio also demonstrates the political sensitivity in managing the perceptions and (intended) accuracy of the decision-maker.

All participants that attempted to code their own or their project's strategic stance coded in 100% alignment with what the thesis researcher had already written

(unbeknownst to the participants at the time). Answers represented each of the four strategy quadrants furthermore supporting the validity and reliability claim.

Finally, the theory was workshopped throughout its development to over one hundred independent, impartial stakeholders to see if they would code scenarios or strategy models in a similar way. Of the 10% who articulated an opinion shared a similar position with positions and insight that ultimately helped further refine the theory.

Fundamentally there is not an expectation that all participants on every project would be able to code their or other behaviour, but on account of having used a deviance sample of exceptional and experienced strategists this specific thesis was able to benefit from the self- and other-insight of looking at the strategies on a more abstract and conceptual level.

3.5. The Analysis of Data

A central tenant of the ethnographic data analysis relied on identifying a phenomenon, describing it, and seeing how our concepts interconnect' (Dey, 1993:31). The ethnographic write-up aimed to produce "thick description" (Geertz, 1973) with sufficient details in the narrative descriptions of relevant events, gatherings, rituals, public and private, flow of conversation as well as 'interviews' and archived material to produce 'snapshots' of the most critical points in the five collaborations' developments. Additionally, it included details on space usage, analyses on tone, and quantification of data.

In response to Francis (1992) and Myers' (2013) concerns that ethnography is vulnerable to personal interpretation and observer bias, a rigorous 24 step analysis plan was implemented. By triangulating not only data sources, but also cross-referencing with participants, theorists, researchers and practitioners unrelated to the project, chances of data distortions and interpretations were minimized:

> *Step 1: Fieldworker amasses data (+R, +D)*
> In the context of the full-participant and confessional ethnography the
> fieldworker first and foremost captured and reported with full transparency

the primary and secondary data in terms of both affect and rationality; formal and informal contact; structured and unstructured engagement, as well as the fieldworker paying attention to the public and private world of which they specifically were not explicitly involved in. Deliverables included, but were not limited to, hand written notes, field notes, transcriptions, audio-visual and audio recordings, photographs, scanned documents, texts, emails, letters, board proceedings, approved minutes, budgets reports, research reports, doodles on napkins.

Step 2: Fieldworker frames data for analysis (+R, +C)
The fieldworker in the context of full immersion then also took responsibility for linking the data together to ensure that it would be meaningful from an outsider point of view. This entailed the integrated universal research calendar, reflective stances of accounts after some time has passed and more context was available. This entails the higher level reflective field notes, and narrative passages, reflective transcriptions with visual context of the more important snapshots in a project's development.

Step 3: Researcher reads and codes data (+S, +C)
With complete disregard to the fieldworker's feelings, the researcher then embarked on an increasingly systematic framework and started looking for similarities, differences, points of tension, snapshots of progress. These were documented in an excel spreadsheet allowing for gaps and colour maps, chaos, dead ends, and identification of missing pieces. Text segments were flagged and labelled for potential use in the narrative.

Step 4: Researcher cross-examination (+S, +D)
The researcher then proceeded to deconstruct the codes built up, listed potential blind spots that the fieldworker may not have noticed in the moment and private worlds that may not have been explored or may not have had access to. Inquiries addressed at the fieldworker's headnotes on experiences not documented formally were also brought to the surface because data or information that may seemed unimportant at the time could ultimately be of value. Hard questions were also asked that may have been embarrassing to confront by the field worker.

In this specific theory's development, the fieldworker was also challenged in the final collaboration (C5) (after the model had been constructed out of data from the first four collaborations) to explain the model to participants and use it as a structure and vocabulary to discuss potential business models from which the emergent development and transformative phases would be benchmarked.

But this cross-examination did not only happen in dialogue with the field worker, it also happens in dialogue with seminal theorists during the literature review - with published theories when the theory was represented for the application and elaboration of the new conceptual framework in a discourse analysis of the empirical descriptions. In the words of Bernstein (1996: 140-141) to excavate the field worker's field the theory was 'ignored' at first to concentrate instead on exploring the empirical object in order to develop a language of description appropriate to this specific object. At the end of step 4 however the model had re-engaged with historical theories.

Step 5: Fieldworker constructs the narrative report (+R, +D)
In the first cyclical transformative step of resolving and balancing conflicting tension, the responsive fieldworker (+R) integrated the research analyst's (+S) systematic framework to construct the ethnographic narrative. Using the researcher's snapshots highlights, flags, questions, and adding headnotes, the fieldworker reengaged with the data to assemble a narrative that contains the necessary details, but also reconstructs the gaps in the narrative so that a third person reader who was not present should be able to make sense of the linear progression of the central idea's emergence, development, change, adaptation and transformation.

Step 6: Fieldworker constructs reviewable narrative draft (+R, +C)
In the second transformative step the fieldworker increased self-awareness recognizing that their actions, affect, decisions and predispositions will be judged by not only third-party but also in consecutive steps by participants. That which had no bearing on the theory is removed. This was also the draft at which grammar, punctuation and spelling were considered.

Step 7: Researcher sets evaluation criteria on quality (+S, +C)

The researcher also investigated and identified critical components and standards for the narrative to be adhered to produce an ethnography at the highest possible quality levels. Appendix X.1 discusses the criteria on quality in detail first observing general quality criteria for ethnographies but also includes a custom six-point framework specifically for confessional ethnographies in the context of social realism. The six dimensions include: reliability (Hammersly, 1992:67; Kirk & Miller, 1986:19), validity (Hammersly, 1992:67; Kirk & Miller, 1986:19), juxtaposition (Golden-Biddle & Locke, 2007; Marcus & Fischer; 1986), moderation (Van Maanen, 1998:93), interlacing (Whythe, 1996), minimalism (Behar, 1996:13) and dialogic qualities.

Step 8-11: Participants review data & codes (+S, +R, +C, +D)

Albas and Albas (1988) developed a method of inspection that adds an additional level of research due diligence that research collaborating with high functioning participants can leverage to improve the integrity of their research. It involves engaging in a healthy two-way conversation with the research participants themselves after initial theory or model drafts are in place:

> They explain their major categories to certain participants they have studied and then inquire whether and to what extent these categories fit each participant's experience. (Albas and Albas, 1988 quoted in Charmaz, 2006:111).

A semi structured list of questions during a final interview gives key participants space to go through their own personal process of transforming the snapshots and narrative that they had been a part of with items they deem important in their unique personal truth (+R, +D), socio-political projection (+R, +C), factual corroboration or reframe with supporting evidence (+S, +C) and unique substantiated immortal contribution to the idea and/or research (+S, +D).

Steps 12-15: Researcher integrates participant feedback (+S, +R, +C, +D)

Per the criteria set out in the ethics section, the researcher finally makes the decision as to which changes augments the narrative in Part II, refutes the analysis in Part III and make the necessary adjustments to respect and balance

both the essentialist and relative elements of truth and knowledge construction to the best of their ability.

Steps 16-19: Non-participant strategic decision-makers review model & theory (+S, +R, +C, +D)
Similarly, strategic decision-makers unfamiliar with the specificities of the five collaborative case studies, as well as academic experts in heterogeneous professional contexts were then asked to test drive the new emergent theory as applied to their personal philosophy of facilitating emergent innovation inside their sphere of influence. (Charmaz, 2006.). The goal would be to assess if the model passes their own personal litmus test.

Steps 20-23: Researcher integrates non-participant feedback (+S, +R, +C, +D)
Even though these stakeholders' input would be in the form of interviews, presentations or abbreviated written synopsis, they would not be included as empirical evidence in Part II of this thesis. Impact of their insight may be applied in Part I by the inclusion of theory and background literature from recommended published peer reviewed scholarly articles. In part II it may be unattributed and applied to the categorization or treatment of data. However, it is in Part III that their contribution is expected to truly shine as this thesis is based on a problem-field approach, the practical implications of the emergent theory is paramount.

Steps 24: Transformed Theory in practice (+S, +R, +C, +D)
The final documented step of analysis in the Phase I iteration of the theory leave control of the collaboration where conception took place and allows the work to be responded (+D) and evaluated (+S) by other strategic decision-makers be it in practice or in academic research.

The analysis undertaken in the research was designed to enable a creative and perpetual dialogue between theory and data. I was also designed to facilitate a healthy dialogue between the different types of data, and stakeholders' reflections upon that data and theory. One could describe the theory's evolution over the analysis of 24 steps to be analogous to transformation a child experience during maturation as depicted in figure 3.2.
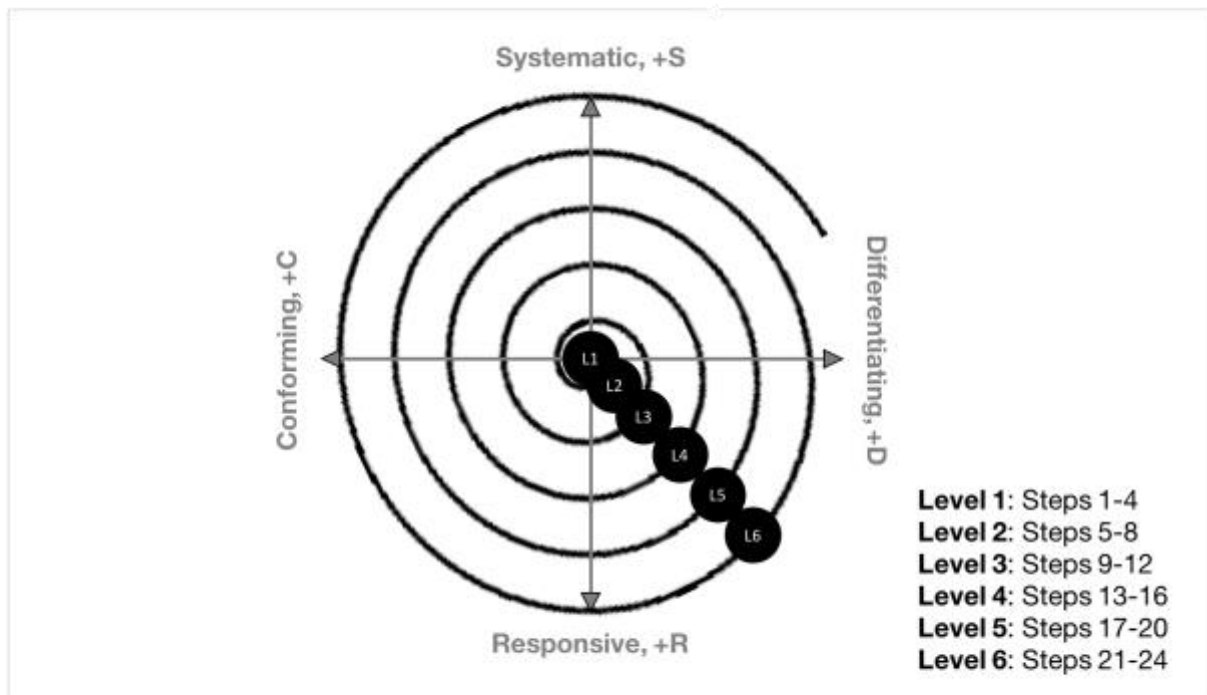
Figure 3.1 – Analysis of Data Steps 1 through 24
(presented along dimensions that would later also become the prototype of M³)

Summary of analysis of data as theory transforms under the pressure or different levels of complexity and drives:

Steps 1 – 7: Early childhood - a theory's protected phase shaped predominantly by highly vested paternal dynamics and drives;

Steps 8 – 15: Formative years - a theory's formative years shaped by semi-insular one-way scholastic literature reviews and participant drives;

Steps 16 – 23: Adolescence - a theory's more experimental and daring phase with critical academic reflections and practitioner debate drives; and ultimately,

Step 24 and beyond: Adulthood - a theory us charged with standing on its own merits and making its own way in the least protected part of the journey of making a meaningful contribution in the world.

Ultimately this metaphor has its limitations but the important takeaway is how various stages of development built onto each other with increasing complexity and sophistication during a long-term process of skill development.

3.5. Limitations

Participant (+R) vs. Observer (+S) role tensions

As a full participant, the field worker was considered a strategic partner in the idea emergence, development, change, adaptation and transformation of all five collaborations. It is commonly stated that this type of immersion has its drawbacks as on a rational level it can distort and influence project data and outcomes, and on an affective level it can distort perceptions of reality. To this argument this thesis offers two retorts: On a rational level, full active participant emersion this benefitted the study by allowed for higher levels of access to observations, interviews and archive material as well as ultimately trust. In the majority of the collaborations the field worker committed to the functional process outcome in the interest of the collaboration regardless of having been granted research access to also study the process around the idea transformation. The researcher had therefor already established a set persona, sincere interest and made professional contributions to the collaboration before the onset of it being identified a potential case study in most cases. On an affective level this fully active participant level also benefitted the study as it allowed for a first-person confessional account. Having the single-person in-depth reference point as a constant comparison increases the value of perceived relative themes evaluations. It also stands to reason that the degree to which this one individual field worker was able to influence and effect project development (with a fairly constant philosophy on change management and a dominant strategic stance) constitutes meaningful data for analysis in itself.

Scientific (+D) vs. Ethical (+C) objectives tension

Possibly a more relevant a concern would involve conforming to the deontological ethical rules of Newcastle University's Ethics Review Board while maintaining the highest possible level of scientific truthfulness in capturing the naturalistic emergence, change, development, adaptation and transformation of complex ideas. To that end this thesis aspired to "abide by standards of professionalism and honesty; our efforts must strive to earn the respect and trust of both research participant and the public at large" (Ruane, 2005: 16)

Inherent rights of participants have been considered with privacy, respect, equal treatment and informed consent. Informed consent was obtained and the right to refuse and a confidentiality agreement was in place (Bedard and Grendron, 2008). Remaining truthful about the intent about the research was of no concern in this specific thesis. Tracking the transformative properties of an idea was also not a conflict with the objectives of the fieldworker sincerely and truthfully committing to objectives of the idea development as a part of a greater leadership collective.

What was however a source of tension in this specific deontological ethical construct was that each of the collaboration's ideas had already emerged and matured to a point of general viability because the detailed ethics paperwork required a high degree of specificity. Though this ethics administrative restriction may have precluded some *observations* from being included as data for scientific analysis, this did however not preclude *archives of historic documents* (as secondary data) from being used, nor *interviews* (as primary data) about historic moments in the development of the idea, and rescued valuable scientific data from being discarded. The Ethics Board approved the first four collaborations' inclusion June 2014, and the final collaboration's inclusion January 2015. Yet, in Part II each of the collaborations will present each collaboration's unique point of engagement by the field worker which is different from this ethics approval date and truthfully constitutes Day 1 in the journey specific to the fieldworker entering the arena as a full participant. Scientifically this represents the most truthful snapshots about the idea's evolutionary journey that could be presented and constructed out of the scope of permitted data.

Participants (+C) vs. Actors (+D) tensions

A second deontological challenged balance between conforming to rules and remaining scientifically truthful involve the estimated 367 of participants and actors naturally and unexpectedly encountered along a journey of five inter-organizational relationships in development. In some contained environments, the solutions were simple. For example, in the most extreme scientifically and ethically ideal setup, Collaboration 3's gatekeepers allowed the use of audio-visual recording technology and workshop attendees' received the information and consent form in their welcoming packet. They were fully aware that they were being recorded and observed

as a part of a research process on emerging innovation and had the option to opt out. Nobody opted out. However, in Collaboration 2, a very similar workshop setup, gatekeepers did *not* approve the use audio-visual recording technology for this specific research study (but did approve its use for institutional research). They did however approve the use of handwritten notes and research participant consent was provided. They also made workshop outcome report available to this thesis afterwards. And then there was yet a more extreme version of a similar scenario with dramatically different social-political rules that needed to be considered. For example, in Collaboration 4, a Health & Safety Board of Directors 'workshopped' entering into an inter-organizational partnership with the software start-up. In this example though it may have been ethically appropriate to include a form to request the use of board deliberations in the pursuit of capturing data for the emergence or adaptations of an idea during potential partnership discussions. However, it would have been wholly inappropriate to put this research study's ethics interests ahead of the focus of the board on potentially forging a partnership with the start-up. To address these and similar concerns interviews and archived documents were once again deployed to re-construct the snapshots of importance to maintain the highest possible level of scientific integrity. Furthermore, concerted effort was put forth to respect and anonymize geographic areas, organizations, and departments. Specifically, for individuals, role descriptors were used instead of names and non-relevant specifics were generalized while important context were maintained (Denscombe, 2010: 339; Maxwell and Beattie, 2004). This applied to both research participants as well as the important naturalistic actors who were instrumental in shaping the trajectory of ideas but were not actual research participants.

Public (+R, +C) & (+S, +D) vs. Private (+S, +C & +R, +D) level data access tensions

This also leads onto the limitation of not having identical access to observations, interviews and archived materials for comparative purposes. Especially in light of the fact that communication mediums were included amongst the themes makes this limitation worth addressing.

To address this limitation, concerted effort was put forth to first obtain at least some representative samples of more individualized one-on-one archived material which did not include the field worker as a participant as was especially the case in

Collaborations 1 (e.g. email correspondence) and Collaboration 4 (e.g. audio visual informational interviews with experts). As it turned out both of these collaborations were driven more by smaller one-on-one dynamics relative to the other collaborations. A second method for addressing this limitation (and getting the necessary information because Collaboration 1 & 4 was driven less by communal interactions) included formal and informal conversations periodically over the course of the project development. In more formal collaborations with bigger organizations like Collaborations 1 & 2 this would include a 3-hour drive in the car on the way to an off-site project development meeting about instructional cultural constructs of executive management with intermediary decision-maker facilitators (C2), or almost monthly 20-30-minute telephone calls and/or emails with 5 questions about the one-on-one access (C1). And in more informal collaborations with smaller organizations or start-ups where trust levels increased over time it included temporary password access to an organization general info email account to observe patterns in one-on-one conversations (C4) after the email server service had been discontinued and listening and observing teleconference conversations as a non-participant (C5).

Socio-Political Observation (+S, +D) vs. Intended Projection Tensions (+R, +C)
Finally, when working with world-class expert strategists and specifically studying their socio-political interactions, a layer of complexity is added when it is also important to close the feedback loop. This is important both ethically and scientifically, but also offers concerns that need to be recognized and addressed especially if the field worker's perceptions of the participants' behaviours are: a) what participants believe they projects, or b) not the intended socio-political behaviour they wish to see represented in writing.

Addressing the discrepancy between field worker and participant perception on behaviours is not too complicated in the context of this research undertaking. If during the process of closing the feedback loop, the fieldworker is rationally convinced that their perceptions need to be adjusted, then either faulty notes or memories get corrected or improved, or they get duped on something they were not very sure of in the first place. However, if the field worker does not agree the parallel data can be placed alongside for the reader to decide.

Addressing the issue of socio-political representation can be more cumbersome. If the researcher can improve the socio-political to also represent the decision-maker in the light they wish to be presented without changing data or findings another layer of valuable data has been added. However, if the wishful participant representation conflicts with the field worker's perception of the data and thus contaminates the research findings then due consideration should be put forth to remove the information all together out of respect for the expert. In such a situation, it should however be explicitly mentioned that data has been removed. Collaborations with the greatest risk of this conflict would include collaborations with a more responsive stance that is especially politically astute like Collaboration 2 and 3.

3.6. Conclusion

Contrary to the dominant modes in which emergent innovations are studied, this thesis is not framing it as extension of individual creativity nor experimental design in controlled environments. Instead Chapter 3 unpacks how the problem based framing research led to the methodology of naturalistic full-participant confessional ethnography over five collaborative case studies of experienced strategists embarking on the development of a new (potentially transformation) idea. It also specifically addresses how and why both rationally and behaviourally rich data sources were included for analysis, and openness to ambiguity was intentionally maintained to remain true to strategic decision-making under uncertainty conditions that strategic practitioners (and many researchers) naturally encounter.

First the methodological implications of the working framework for the research design was drawn up. By allowing for collective representations of innovation to be collected within the context of a dynamic morphogenetic analysis, it was argued, the more iterative mode of conceptual theory development could be employed which would also parallel the strategic practitioner (and researcher's) dialogue between theory and data. The goal was ultimately to evolve a collection of theories, keywords, frameworks, concepts and language of description to take the study of emergent innovation to the next level.

Chapter 3 also unpacked a rigorous 24 step analysis process used not only in the triangulation of data (observations, interviews and archived materials), but also

leveraged diverse stakeholder vantage points on the research data to inform the construction of the strategic decision-making model and theory.

Concluding Part I, the successive Chapter 4 will discuss and model as construct informed by the evolution of strategy theories and models over the course of the last century of strategy theory development. It will specifically look at emergence of new concepts informing the transformation of the field in its attempt to inform and contribute to practitioners positioning organizations in stronger positions for stronger decision-making under uncertainty and specifically dealing with the environmental emergence of the second industrial Consilience in mass manufacturing as well as the emergence of the third industrial Consilience of the digital and information age challenging the integration and consideration of additional constructs in the concept uncertainty.

PART II

EMPERICAL DATA

CHAPTER 4

COLLABORATION 1

THE BLUE CHIP
GENERAL COUNSEL CONTRACTING INITIATIVE

I officially joined the project days after it was conceived by an International Association President (an ex-MNC executive) and the corporate legal counsel of one of the most renowned financial companies in the world. I got the invitation from the Association President over the phone while he was on layover in London's Heathrow on his way to Finland and Switzerland. My Day 1 on this project was Wednesday, October 18, 2013.

Over the year that this temporary collaboration was in full focus the intent was that I keep in touch with key strategists electronically to monitor the evolution of the how central tenants emerge and then physically be present and record all aspect possible without being intrusive at the two-day workshop where twenty or so members of the team come together to hash through the questions regarding standardization of complex contacts and standardizing their terms. Though numerically the contact does add up to more than twelve points of contact over the course of a year the distribution, formats, mediums and intensity took a surprising turn from the expected. Part of the reason for the changes from the initially conceived collaboration strategies was indeed centrally important to this thesis as the collaboration was observed planning for higher levels of efficiency, and contending with stretch goals on timing and level or partnership collaboration not meeting their initial high standards. What however did not change was the impressive list of some of the powerful MNC from a diverse cross-section of sectors that was at the table on day 1 included: banking and finance, pharmaceuticals, oil and gas, and consumer packaged goods. There was also little doubt that telecommunications and major computing companies would ultimately join. (Which was indeed the case). It was very important to the international non-profit serving as an intermediary that the specific companies' anonymity be protected.

Relative to the other four collaborations the contact on this collaboration changed most from what was expected. The contact medium for me and the participants were

highly centred around technology that bridges international divides and cuts down on costs. The duration to complete the specified initial goals took the shortest amount of time. It is also amongst the top collaborations where trust and expectation management was best managed.

The year 2013 marked a higher point in the economic recovery, but a lower point in the populous perception of publicly traded blue chip companies. Internationally the energy surrounding the grassroots 'Occupy Wall Street' movement had started to subside, only for its media coverage slot to be supplanted by an avalanche of news stories about unscrupulous corporate ethics with actions varying from international money laundering to embezzling CEOs.

It may not have been as a result, but rather an extension of the situation, that strategic decision-makers in multi-national corporations (MNC) were more generously allotting resources and opening up to institutional change from the nexus of their general counsel departments. At least, this was the opinion of legal counsel at one of the strongest banks in the world and he made this speculative statement to a room of his peers. No-one in the room openly signalled they thought otherwise. The internal landscape was primed for change.

In deciding what and how an investment in change should be brought about for MNC, Collaboration 1 (C1) followed the journey of a group of diverse MNC general counsel lawyers banding together in spite of the fact that they are often also advisories during boardroom negotiations and on Walls Street for investment capital. As in-house counsel, it was the day-to-day responsibility of these highly educated legal professionals to negotiate the best multi-million dollar contracts for some of the world's biggest companies. Periodically these lawyers came together to earn continuing education credit, spar on solutions that emerged in the industry, and socialize. Interestingly though the problem framing of Collaboration 1 did not address the most pressing external public perceptions of the time. Instead, like all the other collaborations in this thesis, the focus was on how technology was changing the corporate landscape. In the context of this collaboration the objective was standardizing the processes surrounding complex Information Technology (IT) contracts.

Snapshot 1: Power Voices on and off the Conference Call
Day 10

I had to hit the ground running. The first significant snapshot on the project was Day 10. I cannot claim it was visually riveting. The international teleconference call did, however, paint a high definition picture for the project's strategic stance at emergent stages of the project. A newcomer it seemed as though it was just another international project chat by a diverse collection of professionals located on different continents. Nobody was particularly concerned with orchestrating the complexities of international time zones and country dial-in codes because all that had been automated or self-selected with streamlined software. In this snapshot, the people on the other side of the line included: The Association President dialling in from Sweden, an Association Senior Director from the US, an Association Associate from UK and one of the project participants from France.

There were, however, two very powerful presences in the discussion who were not actually live on the line. Throughout the conference call their philosophical positions and objectives with the project reverberated through what was said. Powerful Influencer 1 was Corporate Counsel of an International Bank who was referred to before in the introductory paragraph. During the conference call, he was presented to be the grand architect of the project. Powerful Influencer II was a respected academic with specialties in contract law and experience in facilitating integration discussions. My role as a second academic researcher did not appear to impact the discussion. In the literature of the collaboration brokering intermediary International Association I discovered that the presence of academics was in fact often projected as a sign of prestige and impartiality which was often communicated to its members as having cache.

During the conference call conversation, I did not speak much. I was thankful they could not see me sitting on the living room couch feverishly scribbling down a daunting array of information into my red research notebook. This allowed me to play catch-up with their fast pace as I jotted down the dense jargon and alphabet soup of contract law acronyms for later review.

The most important information to be collected from this teleconference call concerned the strategic stance. It was clear that the strategic approach was to not reinvent the wheel, but instead to duplicate a process designed and tested by Microsoft's Corporate Lawyers, and University of Chicago academics. The previous year Microsoft pursued very similar objectives when it sponsored a two-day workshop facilitated by Corporate Contract Law Experts at the University of Chicago. During this workshop MNC corporation general counsel were invited to partake in discussions where complex contract templates were anonymized, pricing information and identifier information were obscured and the content was shared to focus on the terms that are generally considered universal. For the new International Association's version of the workshop the time and place was yet to be determined. The price for participation was however set: $8,000.

Over the course of the conference call six summary points emerged:

1 *Long-term Objective*. Take relational contracting to the next level as it applies to negotiating complex IT software contracts to be flexible enough to adapt with the changes of the uncertainty of the environment

2 *Shorter-term Objective*. Create a template of IT model principles so that negotiation can set a default and focus energy towards the variables what would be unique per project

3 *Project participants*. At the point of the conference call Collaboration 1 had two MNCs that formally committed, and four were close to committing. The group was an impressively diverse cross-section of industries. None of the marked potential collaborators were software providers.

4 *Next milestone*. The grand architect of the project was to host a professional development gathering for corporate general counsel in London at his corporate headquarters. Thirty minutes were budgeted for a short presentation and discussion on how complex contracting can be improved.

5 *Association President goals*. He set the stretch goal of acquiring nine more official project partners at $8 000 (pay to play).

6 *Association VP Assessment of the situation*. She had a generally positive and boots-on-the-ground informed disposition. She shared context and anecdotes of how corporate lawyers thus far had been responding to the collaborative objective. Many who were interested did not necessarily respond by becoming a paying partner but were interested in the outcomes of the study.

The conference call fit neatly into a considerate one-hour timeslot.

Snapshot 2: The 'How do you eat and Elephant' Debate
Day 20

On the day before Day 20 of joining the collaboration I travelled by train to one of the tallest and shiniest towers in London's Canary Wharf Financial District. The objective was to negotiate access to nine more project partners. One of the Snapshot 1 conference call participants was going to be in the room (apart from me) – The Association Associate who was supposed to deliver the 10-minute presentation. However, this would also be the first time I meet Powerful Influencer I whose presence was evident on the conference call though it was not accompanied by a live voice (the project's architect). It was his headquarters that was hosting the gathering of in-house general counsel seeking continuing education credit with this daylong event.

The brisk morning traffic and formalized security rituals in the lobby of the blue chip Multi-National Corporation rivalled that of an international airport with hundreds of people coming and going. Once my passport cleared security, I received security tags to travel up to the sixth floor on the glass elevator (with yet another security officer). In and around the conference room, some thirty formally suited corporate lawyers with ties and even a few bowties stood chit-chatting politely with an early morning beverage in one hand. On the dominant meeting room wall hung a classic still life landscape painting in an elaborate frame. The wall to the exterior was a floor to ceiling glass window with partially closed blinds. The room was sizable enough to comfortably accommodate six round tables each with six chairs. I picked a seat on the left front table to allow me the best possible vantage point. Over the span of the early morning confectionaries, the Association's presenter as well as four lawyers joined me.

Before the presentation the Associate presenter scanned the lawyers' employers in the spiral bound agenda. I remember his opening remarks being that one third of the companies present in that room were already members of the Association (which is not exclusively for legal professionals). Almost as if on cue one of the two female lawyers in the room pitched in. "I just want to add that I am a member and [the

Association] is a truly great asset to [our company]. If you are not a member, I would recommend you look into it."

The presentation went well. The discussion that followed was partially facilitated by the Association Associate and strongly influenced by the Powerful Influencer I (architect and host). Of specific interest to this thesis was the room discussion that followed. Especially interesting was the respectful push backs from two or three of the attending lawyers. But these were not your typical pushback. Instead of challenging the objectives, values or the ethics in the coordination of contract negotiation, dissenting lawyers wanted to know why the project was not more ambitious. "We see the need for the bigger overall objective, why are you focused on the smaller short-term objective of model principles," challenged one respondent. "I am sure more people would be interested in working on the big picture objective or getting involved once that is the central focus" challenged another respondent. The Powerful Influencer I host stood his ground: "Yes, but how do you eat an elephant? One bite at a time."

It was not until after lunch that the group began to focus on banter about the speculative high price of the painting on the dominant wall of the room. At this point the group was more warmed up. In a respectful taunt, it also became apparent how Powerful Influencer I was revered by his peers (and not only respected as the host). At one point, he was called 'the highest paid person in the room' to which another lawyer responded, 'it's actually highest paid in this company now!" The room erupted in laughter.

Whether that ranking was true or not, he effortlessly commanded respect of those in the room in both informal conversational banter and formal debate. It is also in retrospect that I realized he was one of the first attendees to take his suit jacket off, roll up his sleeves and chat back and forth by leaning back in his chair and putting his elbows out and his hands behind his head. It was only *after* lunch that I realized some other attendees had also started to follow suit. Silk-lined suit jackets were getting draped over empty chair backs and dress shirt sleeves were being rolled up for a more collaborative work appearance. It was also after a few hours had passed that presenters would address the room while leaning or backwards bumping against

walls or pillars, or adopting a classier version of the Captain Morgan stance with an elevated foot on the crossbar of a chair while they 'chatted' with the rest of the group.

When visiting in smaller informal triad or quad group discussions with the lawyers over breaks this projection of a collegiate spirit was also pervasive. These corporate rivals did indeed speak to each other in very respectful, yet playful ways. They confessionally practiced relational repairs by reminiscing on past negotiation projects where they took a hard-line stance on something they personally (project to) have thought was an unreasonable ask. The in-house lawyers openly envied and idealized others' single company careers (and vice versa), plus they even shared frustrations like the new wave of offshore corporate negotiations to solicit peer advice. Duos and triads also debated the merit of the proposed collaboration project of this thesis. And time and time again I observed them re-arrive at the dominant room discussion: they could see merit in the long-term objective, but the short-term objective and investing money to be a partner now might not be a reality for their company.

At the conclusion of the day the Association Associate closed the feedback loop with an email to key stakeholders from the Snapshot 1 teleconference call who were not at the event. He described the same observations I made at the formal group and small group level as follow:

> "The meeting at [the blue chip MNC] went very well. The audience got very engaged in the subject. One push-back (from [another blue chip MNC]) was: if we know that most disputes, claims, problems are around scope, goals, requirements, why focus on the 'legal terms' of the contract, are we not aiming at the wrong target. [The project Architect] and I answered that if negotiators tell us that they ACTUALLY focus on the 'legal terms' then we have to move their focus, by reducing the time spent on the 'legal terms'. Equally, we do need to (as a profession) simultaneously work on helping people to be better at working on scope, goals, requirements. [...] Two people showed a lot of interest in joining the project [...]"
>
> Association Associate
> Day 20

Snapshot 3: The compartmentalizing email
Day 46

By Day 46 of my participation the how the International Association's workshop would be different from the Microsoft workshop template became more defined more defined. Who or when over the changes were made over the preceding 26 days was not in my field of vision when interacting via email. Once again it was a more faceless

electronic medium of email that was used as the communication channel in which the message was conveyed to me.

As an intermediary, the Association could and wanted to keep the separation between the buyer and service provider side much clearer. Additionally, it was confirmed that it was not just the partnership ambition that was stated to be sizable, but also the timeline was very aggressive which had ripple effects on subsequent strategic stances.

> "We are looking to engage more from the buy side at the moment and then hoping to engage the sell-side thereafter. We'd like to have the project deliverables completed in Q1 of 2014 although that may be optimistic – it will depend upon the engagement of additional participants for the project."

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Association's Senior Director
Day 46

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Snapshot 4: Buyer-side principles documented
Day 195

> "Attached please find the talking points along with the Technology Services Principles for [The Association]'s IT Standards Project. These principles were developed by a team of our project participants from the "buy-side" perspective and we are now in the process of seeking comments from the "sell-side" community. Once we receive that, we will revisit the proposed principles. "

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Association Senior Director
Day 232

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May 1, 2014 marked the official conclusion of the IT Standards buyer side principles document. In the tight run-up to the first quarter 2014 deadline and goal of 15 partners, both stretch goals had been slightly relaxed and in the process of getting as close as possible to the stated goals one noteworthy alteration was made to the Microsoft workshop templates: instead of hosting a two-day workshop where the partners worked through the principles in-person, the intermediary association assessed that enough trust existed between the MNC partners to conduct the 'workshop' long-distance over technology. In a phone interview with the Association Senior Director a few days later we spoke about the communication mediums used. She explained that they (she) had been relying primarily on online correspondence, but it took a lot of prodding and probing: "...some conference calls, some phone calls, and in-person meetings, but *hundreds* of emails".

Ultimately the IT-buyer side partners constituted half of what the team was aiming for as the initial six committed, and only two more joined in the last few months. The new strategic stance of using asynchronous emails also considerably decreased the expected expenses compared to a workshop. Ultimately, however, the Association President explained one partner did drop out "due to funding reasons."

Snapshot 5: The launch of seller-side principles
Day 217

Three weeks after the Buyer-side process concluded, the Seller-side discussion commenced. In reviewing the back and forth email correspondence between one 'prospect' IT service provider and the intermediary Association leadership a few patterns emerge.

First there is evidence of offline one-on-one conversations that predated the formal email ask for partnership. Second, in this instance the correspondence and confirmation of commitment occurs fast over the course of four back and forth replies. Third, the conversation that starts on a midday on a Friday continues through into the weekend and into afterhours. Fourth, personal touches like addressing the person by their first name are evident as well as linguistic warmth signals. A fifth and final observation is that all members on the Association's relay team are not copied into everything automatically. It starts as a personal conversation between the Association president and Assistant General Counsel and ultimately builds up to a carbon copying in of the Association's Senior Director. Towards the end of the weekend the conversation concludes with the Association's Senior Director not carbon copying in the Association President on the finer details of the talking points.

In observing the dynamics of the chosen communication medium, it is fundamentally apparent that even though email was used as compared to a more data rich face-to-face channel, the detail and precision of email does also provide helpful proof for systematic and controlled thinking that would be harder to absorb had the dynamic been more abstract and conversational. However, this means a need for deliberate effort to be put towards circumventing what could be perceived as detached efficiency coldness.

> "[Blue Chip MNC] will be one of three 'pilot' suppliers to review these proposals and thereby inform and influence next steps. The pilots have been selected based on our perception of the more reasonable and balanced companies in the sector!

<div align="right">

Association President
Day 217

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Snapshot 6: Opening the telecommunications line
Day 250

One of the important conversations to discuss the broader context of a cryptic email received a few days earlier was initially set to take place with the Association's Senior Director on Day 235. However, development in Istanbul, Turkey resulted in another cryptic email stating "Training is running longer. Will need to reschedule." email. It was not until Day 250 after the Association's annual European conference that that things could be clarified. An interesting surprise twist was also in store.

We started out crossing our 't"s and dotting our 'i"s on the Information Technology project, establishing the context details specifically associated with the seminal emails of the previous two snapshots. The updated timeline set the goal on wrapping up the buyer-side input during the next month or two. However, somewhere in the middle of that discussion emerged an unexpected new thread. The Association was about to start a second similar project. This was not unexpected as by now I have heard several MNC in-house counsel express an interest in going wider than the contracting principles, but that was not the direction the project was moving. In fact, a new industry sector was being pursued: Telecommunications (and IT was now officially referred to as the pilot). Also, this round, instead of returning to the Microsoft blueprint that this project was initially built on, the team was planning on repeating this Delphi email communication strategy that emerged even though the association articulated "we have trouble getting the partners to collaborate."

The phone call lasted 30 minutes.

Snapshot 7: Coffee with the president
Day 255

On Day 255, after over 75 emails and several hours of being in or on a phone line with him, I finally got a chance to have coffee with the Association President.

Of the dozens of emails, not all pertained to this specific project. The Workshop where we connected in-person was in fact one of the many other new projects he was considering launching. The list of potential initiatives was impressive, long, diverse and unique - which is why I am not offering details as identifiers.

His short, cryptic, and to the point emails sold and pitched ideas without elaborate fanfare or details that could be construed as excessive. In some instances, this writing style meant a recipient missed some high viability ideas as was the case when the Association President pitched a book project in an email I was copied in on. It was several weeks later when I asked the Advisory Board Member (to whom the question was addressed) if he and the Association President were pursuing the publishing project because it sounded promising to me. The Advisory Board member had no reference of what I was talking about but revisited the email. Ultimately the team successfully closed on the book project with one of the leading publishing companies in the world.

In-person the Association President and I talked not only about the IT complex contacting project at hand, but also the Telecommunications project that was to follow the same DNA blueprint. In conversation, it turned out a third more distant mutation of the same concept was also getting ready to launch in the energy industry. At the point of the conversation he was so immersed in that third iteration that he could recall the dates of the energy industry conferences EMEX in October and Excel in November and asked if I would be interested in attending to represent the Association because of my background and interests in the evolution of the energy sector.

Snapshot 8: OJ with the board director.
Day 256

At the same workshop where I met the Association President I also met one of the Association's Board Members. When I first saw her, I did not know who she was. She was young, international, pregnant, on crutches, and visibly days away from her due date. In other words, she was the perfect candidate for being underestimated.

However, underestimating her potential could not last long. Once I had a chance to have orange juice with her at a post-workshop networking event at the Art Museum, I learned about her life narrative. Her double PhDs which served as a creative solution to a visa obstacle. She focused her project management case studies on solving problems that seasoned professionals deemed impossible on mega projects. Also, the fact that she had recently earned a performance award in a male dominated field. I would list her as amongst one of the most interesting people I have ever met because her ability to defy expectations of socially constructed norms with results to back it up. It was no stretch to see how she would be at home on a team with a successful track record of rapid fire new initiative launces. But a question lingered in the back of my mind: how does one reconcile the methodology of how the Association President and Board Member go about introducing and developing new strategic indicatives with that of the systematic, controlled and detailed orientated lawyers?

I allowed the question to marinade as I too moved on to my next innovative project.

CHAPTER 5

COLLABORATION 2

THE ELITE RESEARCH UNIVERSITY INITIATIVE

Like the Blue Chip General Counsel in Collaboration 1 (C1), this second group of strategic decision-makers (C2) were also responding to the aftermath of the world financial crisis. However, contrary to the nosedive of average stock prices at publicly traded MNC corporations, the top tier British Universities were up in enrolment and flushed with cash. A new 2012 national law impacting specifically British Higher education opened a floodgate of global students. Of concern, however was also the fact that the new 2012 law increased student tuition of British citizens and the long-term implications of undergraduates graduating with debt waved a cautionary red flag over the impact this might have on non-traditional students furthering their studies. Like the blue chip corporate general counsel collaboration (C1), the higher education collaboration (C2) may have used economic and regulatory changes to open the strategy conversations in search of innovation, but once inside the decision-making chambers it was apparent that here too technology was a dominant driver.

I officially joined this initiative after the project architects decided it was time to open discussions to a broader and more a diverse cross-section of the stakeholders of the university community. On Aug 28, 2013, I responded to a closed group community Facebook posting requesting participants interested in joining a distance education steering committee. Twenty-four hours later a Student Council Representative emailed me on behalf of a staff member and informed me that they are excited to have me on-board. My Day 1 of being a part of this initiative was Wednesday, Aug 29, 2013.

Initially the collaboration signaled that developments would be conducted through in-person meetings as well as workshops and focus groups over the next year. Similar to Collaboration 1 the projected timeline was closely adhered to, but unlike Collaboration 1 the format did not change. What however did change was the ballooning requests or needs for joining more task forces, attending more group meetings and number of workshops being added onto the periphery of this project.

I attended 100% of the events that I was invited to and actively sought out to be involved in the spin-off meetings that had the most promise to materialize more and different positive outcomes. Of the spin-off non-invited meetings, I was also able to get information, reports and brain storming charts from a number of the others formal peer interactions. One of the important groups (Diversifying our Portfolio Steering Committee) met quarterly for a few hours, another central group (Changing the Learning Landscape Task Force) met every two months over the last six months with a two-day retreat off campus, yet other meetings (Workshop I and II) were intense day long marathon of workshops with different stakeholders, as well informal bigger group meeting work sessions often scheduled shortly before bigger group meetings that needed deliverables. Like with collaboration 1 I also intentionally sought out opportunities to have more informal contact to visit with key strategic decision-makers over beers or while driving back and forth from retreats. Ultimately the contact resulted in high spikes of multiple days of intense formal contact that lasted hours and demanded undivided attention followed by a couple of weeks of no contact.

Even though Collaboration 2 lasted a similar amount of time (one year) the intensity and level of contact, the volumes of data, the number of people involved, the comparative in-person contact (for researcher and peers) vastly outnumbers that of Collaboration 1. In this specific case, this high level of workload was not a reflection on the level of success or even complexity of the initiative being addressed. Instead it appears to be a reflection on the culture of collaboration and turf protection mechanisms as new initiatives stand to threaten a status quo inside on organization full of high achievers. Though participants in collaboration 1 was also marked by top achievers in a different field collaborating, the mechanisms for trust worked better in the first collaboration. This was also reflected in the permission access to record as video and audio recording was not permitted, but handwritten notes were.

Ultimately this project reflected the most standard and expected protocol for going about collaboration and development of new initiatives. It was also in the formal documentation of reports, minutes, press releases and presentations that the strongest verifiable elements of this collaboration emerged that could be independently corroborated.

Snapshot 1: Around the boardroom table with faculty heads
Day 16

The first meeting was on Day 16. Just like the shiny skyscraper in London, the new state of the art glass University administration building required me to flash identification in order to get access to the elevator to take me up to the crammed board room. At least two people had to sit on the late comer chairs outside the inner circle of the conference table. Though I knew from the list of invitees I was (once again) at the bottom of the food chain, I was not one of the corner-chair-sitters. I was there early. The meeting kicked off with apologies for even more people who were unable to make the special meeting.

Leading the meeting was a University Executive Administrator. I did not realize who she was at the time, but she comfortably stood out in the room (or possibly on campus) as the best dressed woman. Classic conservative. Neat. Stylish. Impeccable no matter what your personal style preferences were. She gently and neutrally introduced the concept of the MOOCs supplemented by a staff member short overview of some basic third party research on the topic she had stapled together and passed around for attendees to review.

What was specifically of interest for the purpose of the thesis was the responses of the people in the room to the question: "Should the University get involved in MOOCs?".

The first responder was the University Finance Director. He was formal and conservative in his suit and tie very similar to the formality classification of the University Executive Administrator, but just a little less creative. His response was surprising. In my experience as an executive I had grown accustomed to the Finance Director's role being that of a voice for moderation, caution and temperance. This Finance Director was different. He was a force for change. He confidently expressed his opinion that the financial position of the University is sound and that this should be leveraged to invest in new financing streams because today's position with the elite Universities may not exist into perpetuity sticking exclusively to patterns of the past. He was not explicitly endorsing MOOCs, but he was clearly advocating for expanding horizons.

The second set of two responders were nondescript and did not offer much of a stance or a philosophy. But when the faculty senior administrators started chiming in the positions became interesting and clear. First was the Senior administrators at Faculty A. Two of them. I knew one of them from an unrelated project. We did not see eye to eye then, and as expected we did not see eye to eye during this round either. Both he and his faculty counterpart thought the benefit to their department would be negligible. They did not perceive it as worthwhile to their specific field. "Maybe we can dip our toe, but I cannot see the point of a research-intensive university immersing in this." This gave the senior administrator of Faculty B seated in the late comer section the space to also express his doubts.

At this point it was appropriate for Faculty C representative to state a position. I believe she was addressed specifically for her opinion. It was a calm and articulate woman with an alto voice who decided to share as a matter of a fact that the Medical Faculty have been doing non-traditional online teaching for about ten years.

I could have left it at that, but it felt at the time that those who I perceived to be the heavy weights in the room had just dismissed the idea and closed the book. I felt as if I needed to speak up. First I tried to tackle the value that MOOCs could possibly have to a research-intensive university. I explained the importance of access to new data, studying how people learn, flipped classroom pedagogies. I also tried to address the community impact criteria so critical in the British REF evaluation system. When I was done, I felt a silence hang over the group. Maybe I came across a little too strongly. I felt uncomfortable.

Walking out the door the immaculately dressed woman politely thanked me for offering my opinion. Traveling down the elevator the medical sciences faculty member also politely thanked me for speaking up. I appreciated the two kind people that made me feel better for stepping over the line.

Snapshot 2: The press release surprise
Day 35

On Day 35, two weeks after the meeting where it seemed like a room of senior administrators indicated that MOOCs are not a new frontier, an understated email

arrived in my inbox. It was a bulk email to the stakeholders in the Snapshot 1 meeting. The email was cryptic. Only two words: "Please see" followed by a link to a news release. I almost did not even open it.

As the email subject indicated, the University was getting involved with a new company. And then came the reveal in the opening paragraph of the press release:

> "The growth of [New MOOC start-up] continues as telecommunications giant [name] signs up to sponsor massive open online courses (MOOCs) for professional development, while three more world-renowned universities join the consortium."

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Press Release issued Oct 1, 2013
Day 34

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Amongst the three "world-renowned" universities were the one where I personally witnessed a lukewarm reception to the ideas of getting involved in MOOCs from that roundtable of senior administrators.

The press release concluded with a quote from the University Executive Administrator who facilitated the discussion in Snapshot 1:

> "Our partnership with this [MOOC Start-up] will allow us to expand our existing suite of online programmes with the launch of two MOOCs in 2014. [Our] University started delivering online programmes over ten years ago and we now offer a variety of health-related courses ranging from Clinical Trials to Oncology. We have also recently launched a programme in Ageing which is one of the University's major research themes. This new venture will enable us to reach new audiences to give them a taste of [our] University's wide ranging subject expertise."

A few months later I asked the staff member who forwarded the press release how many of the people in that snapshot 1 meeting were aware of the possibility of this MOOC partnership actualizing a few days later. She answered very definitively without elaborating: "Two." I could not tell for sure from her answer if she was on the inside or outside, but she clearly also thought about this with some amusement.

The senior administrators who had expressed their doubts about getting involved in MOOCs never attended consecutive meetings. Their names were also not amongst those who apologized for absences indicating that they had been replaced by 'less senior' level faculty administrators who were more enthusiastic about the potential of MOOCs.

Snapshot 3: Keeping up with the Joneses meeting
Day 135

The second Steering committee meeting on Day 135 was in a corner conference room with more windows, on a higher floor of the building, and which included probably double the number of attendees compared to the earlier one with the Faculty heads.

Also, as was appropriate, the meeting started with a review of what other Research Intensive Universities were doing with distance and non-traditional education. The University Executive Administrator also announced at this meeting a highly visible symbolic gesture to the importance of this initiative by announcing it was putting distance and non-traditional education on the front page of the University homepage. None of the other top 23 elite British universities had done that to this point.

Further discussion visibly focused on what the other Universities had done and what should be done to not fall behind. This baseline and threat of what other Universities are currently doing and moving forward on would over time become a very strong referencing point as one of the stronger institutional mobilizers for change turned out to be fear of losing status as an elite university in relation to the peer group's evolution.

Snapshot 4: The "low hanging fruit" meeting
Day 212

Possibly the most revealing meeting on the strategic stance of this project happened on Day 212. By now two special workshops with outside facilitators had been hosted to get student and academic/staff input through three highly structured and informative Steering Committee meetings, and the assembly of a small special task force which had conducted a two-day retreat to work with the National Leaders Council in enhancing the quality and tools of education in Great Britain. I had been involved in all of these. Three MOOCs showcasing a general interest six-week course from each of the three academic faculties were also in development. I was not involved in these, but as it turned out I knew two of the instructors. I was well acquainted with both the Medical and Engineering Faculty's MOOC instructors via this and other unrelated projects.

It was in preparation of the presentation at the second of three two-day retreats that a meeting with the University Executive Administrator was requested and granted. Invitees included the three-core people who had committed to attending the retreats. In descending order of who sent the most emails they included: 1) the project management staff member who owned one of the most artistic red coats I have ever seen. She was also the person who had sent out the press release in Snapshot 2. 2) the sharply dressed and articulate orator whose title was Head of Quality in Learning and Teaching, 3) myself. Also in attendance was an academic from the Engineering faculty who was not able to do the retreats but did partake in local taskforce development meetings. I do not remember his attire so I assume it was perfectly in line with what professors typically wear.

The meeting commenced with a quick reference to intuitional financial commitment to this initiative. First and foremost, the University Executive Administrator made a point to share with the group that they were in the process of budgeting for the next academic year and she had money from one account that she was going to transfer to the development and execution of this initiative. This news served as a nice energizing boost.

Another interesting side note announcement she made was that days earlier a separate committee had approved and granted autonomy to a group in the Business School to develop a HybridMBA program as a combination online-offline degree offering to launch September 2015. Days later I also sought out and volunteered to join this initiative in my capacity an instructor for the traditional MBA students.

In the special meeting with the University Executive Administrator there was a central question: did she prefer an approach that is (i) a new and bold symbolically distinctive new pursuit of funding streams outside traditional student education, or (ii) a small, gradual systematic and quiet approach that leaves most processes in place as they are?

The Head of Quality in Learning and Teaching took the lead in this discussion and walked the line flawlessly. He gave both sides equal consideration. The Project Manager followed in her boss's footsteps in that and her personal preferences were

also not evident. The Engineering Faculty member made the bold choice to express his preference. He preferred the small, gradual, changes ultimately resulting in better outcome. The University Executive Administrator concurred. "I hate to say it, but I think we should just go after the low hanging fruit. For now, at least."

At this point that I spoke up again. I wish now that in my researcher role I could have asked *why* she hated but preferred the careful route, but instead I spoke out as a participant in the project role and advocated for a bolder stance. Up to this point I had perceived that workshops, steering committee meetings and breakout discussions time had been dominated by the issue that the University IT system was built for the traditional student and that any deviation from that required manual overrides that caused innovators and responsive problem solver to hear a disproportionate number of "No's" for requests to innovate and diversify revenue streams because it was too labour intensive for University clerks to deviate. If a new hierarchy framework could be built or at the very least a new parallel power system could be introduced to not just default to antiquated IT systems, better solutions to existing problems may organically emerge throughout the university. Though they were polite about it, my words did not have much of an impact. The decision had been made.

As projected by the Head of Quality in Learning and Teaching, the meeting took about 90 minutes.

Snapshot 5: The final blackburn off-site meeting
Day 257

At the final of the three 2-day retreats, I started to get a clearer understanding of the institutional politics that I had been so casually neglected to get acquainted with before recklessly espousing my own opinion in group meetings. It was not until Day 257 that I was able to have this much-needed conversation during a work session with the Head of Quality in Learning and Teaching and the Project Manager in his department.

By this time, we had spent hours together in formal meetings and presentations, but also informally had gotten to know each other while traveling and dining together. There was no doubt in my mind that both the Head of Quality and Project Manager were excellent ambassadors for new product development. The Head of Quality had

launched and successfully executed on radical projects at the University that ran counter intuitive to traditional expectations, but was backed up by customer driven market research. He had also empowered his teams to be at the cusps of innovation as his industry evolved over the past 20 years. Several national awards from industry bodies echoed that he was not just catching up with the Joneses in the initiatives he headed up, but that he was the Jones's Head of Household. Internally the University also rewarded him with promotions and interim positions when administrators had left.

Likewise the Project Manager was a creative force. Outside of her university responsibilities she launched international communities online, set trends in the hobbies she was engaged in, and was a natural creator. Inside the university organizational structure, I had concerns that her contract structure was not set up to make the most of her creativity. She was employed on project by project basis and thus fundamentally incentivized to let any project last as long as possible to pursue career security. If many other staff members in her department were employed on the same basis, it would explain a statement that she made several times over the course of a year: "Once a pilot project launches it just continues. There is no system mechanism for pulling it back in. It just launches and lasts forever".

The two university political veterans were also able to offer other institutional context on getting initiatives to be approved. In an organic alternating dialogue, they explained that the University Finance Director was a big proponent of launching massive financial investment projects. He is especially fond of new skyscraper building or high tech addition projects. He did very well on those but wanted rational systematic evidence on where the new revenue streams will come from. This made sense based on what I have observed in meetings up until then (as well as in the context of the three new skyscraper campus additions that was being erected in the last few years). They conveyed that positivist research and data needs to be a part of any sales pitch for investment. Arguments for strengthening the University brand equity does not typically do the trick, but the first MOOC to launch's high quality promotional video was surprisingly convincing in winning him over a few days earlier. The University Business Executive still needed persuasion. These were some of the task force's toughest Executives who needed to be won over with the Steering

Committee's Report and Recommendations that were supposed to be the deliverables at the end of the process.

Possibly in response to overhearing the conversation (but maybe not) one of the National Project Managers leading the Change Management workshop lectures signalled to the University Project Manager (who was also a family friend of the Project Manager) that they have some money left over in their annual budget that could be used for outside facilitator workshops. In the past, they had both been involved in 'journey mapping' and thought that an expert in that method who also lives in the area would be a good outside facilitator.

I was not familiar with "journey mapping" so they explained it as envisioning positive outcomes by soliciting and documenting first-person narrative perspectives of a shareholder that can help convey end-user, developer or administrator's vantage points to decision-makers. Videos, photographs, narratives, timelines, blogs could all be a part of the binder of evidence that could be provided to the Executive Steering committee to help them see the possible future in a tangible way. I was not convinced that this was the way to go. It sounded like an affective approach that focuses on feelings and motivations, when they just finished described the Finance and Business managers as strategic decision-makers who demanded (and responded better) to more rational and cognitive approaches when they engaged in decision-making under uncertainty activity.

Snapshot 6: The Journey Journal Workshop
Day 331

On Day 331 two independent sets of journey mapping workshops were ultimately facilitated by a young energetic male outsider who was described as an expert in specifically journey journaling. The location was a classroom with flexible table and chair configurations in one of the most historic buildings on campus. Each workshop had about 15 participants. All the familiar faces I expected to see were there, as well as attendees I have never met before. I was pleasantly surprised by the calibre of pioneering thinkers who decided to participate.

In casual conversation with faculty attendees they spoke of their pioneering new technologies and methodologies in their classrooms as if it was common to push the

boundaries and experiment. Staff member attendees were ready and enthusiastic to explain to me how reoccurring problems highlighted in the past year of steering committee meetings could be solved from their points of view. This was in my opinion an impressive group of alpha movers. Also, as expected, a professional crew of ex-BBC members including a camera man, interviewer and producer (now employed by the University) whisked attendees away every few minutes to do an interview for the video deliverables to the executive committee.

Two factors in this meeting were specifically of interest to this thesis in this meeting: (1) how had the workshop organizers decided to frame the problems to be solved in the session, (2) how different would the two independent group's strategic stance be on solutions.

Not surprisingly, the problem was framed as in the spirit of *low hanging fruit*. Only short-term priorities were of interest. "What is the 3-4 most important barriers in our organization?" Table 6.1 captures a summary of the workshop participants' independently generated and voted lists of the biggest barriers.

Group 1 Barriers	Group 2 Barriers
• Strategic Focus • Non-Emphasis on Non-undergraduates • Integrated systems • Time to develop classroom content	• Lack of investment and support • System (non-standard) • Strategic vision not clear • High level support • People are busy

Table 5.1. – Higher Education (Collaboration 2) Workshop 2 outcomes

The two independent workshop sessions recommended essentially the same list of next steps needed. Specifically, of note, was the fact that in both sessions of alpha movers a short-term priority was the need for longer-term planning.

Snapshot 7: The Final Steering Committee Meeting
Day 376

On the final meeting of the quarterly steering committee meetings the usual things happened. A big group of 20 – 30 invitees from a cross-section of the university congregated in a room with lots of windows and a big conference table (configuration) that tied everyone together in progressing though a prearranged agenda with guest speakers on various topics and no action items.

At the final meeting the presenting guest speaker was the leadership of the Office of International Students. The speaker made clear that in a collective effort this was the best ideas for how diversification could occur from the perspective that it is an internationally acclaimed and respected University and this specific department's mission was to strengthen this international position.

An impressive list of about a dozen ideas was thoughtfully presented. Each idea was substantiated with feet on the ground insight on the international market and student base. Many of the ideas also pre-emptively flagged when and how the University historically pursued a similar idea that did or did not work out and an explanation for the department's opinion for why. I liked all the ideas! The problem was a) *all* ideas could not possibly be pursued, and b) there was no structured mechanism for me or any person on the steering committee to reflect our support (or oppositions) based on our feet on the ground experience. Many of the ideas for diversification were very subject to non-consideration (or not full consideration) because the normative 'leadership' behaviour process in the room was passive. It was also at this final group meeting that it occurred to me that strategically the input-output decision-making of the diversification steering committee did not rest with this collective of 20-30 people. On the input side, there was an agenda control filter that was not influenced by the steering committee leadership, nor would the steering committee report output to the executive board be driven by the steering committee. In the context of the steering committee structure we were the huddled masses and not strategic decision-makers on the topic we were recruited for.

To discredit this point of view I tried to recall the descent that had happened in the room over the course of the year. Sure, the steering committee meetings had allowed for a space to speak up if one dared to break the safe consensus cocoon that was carefully spun. And yes, speaking out against the status quo did happen. Once. It was at this final meeting. One of the faculty leaders publicly criticized the MOOC organizers from Snapshot 2 for allocating disproportionate resources to his faculty's MOOC compared to the MOOCs from the other two faculties that were to launch over the next few weeks and months. Maybe publicly stating key performance indicators helped, maybe it hurt. At the time the faculty whose MOOC was about to roll out had secured 13,000 sign-ups when the average MOOC in the collaborative platform system at the time had received only 5,000 − 6,000 sign-ups.

This juxtaposition did however illuminate an alternative explanation for this large group's long-term involvement. It was possible that some in the room were positively charged to become and stay involved opportunistically to drive broad change for the University as a whole. However, it may also be possible that another percentage of the people in room was negatively charged, and motivated with a watchdog vigilance for how they (or their department) would be impacted adversely or unfairly by imminent change. For the latter group, it was about protecting interests and resources from philosophical stances that could be shifting.

Snapshot 8: The greenlit HybridMBA program
Day 630

As signposted in Snapshot 4 there was still the matter of the Online-Offline HybridMBA program that was being pursued. Unlike the three MOOCs that received in the facility of a quarter million pounds of resources and dedicated central University support to develop content over the course of about a year, the HybridMBA model looked much different. The HybridMBA's chief architect was a Senior Administrator in the Business School with a unique portfolio of senior management level industry experience at blue chip multi-national corporations. Though the chief architect was a Steering Committee member he and the Business School Director had not attended the first handful of meetings or any of the University's central workshops. They had however been conducting their own independent series of meetings and workshops. I attended many of these Business School meetings too and received photos and summary reports when I was not invited to attend.

The HybridMBA's solution to the concerns of the Marketing Department was to partner with a recruiting firm on campus as a separate entity. Their solution to concerns of the IT and Billing Department was to use SalesForce separately. The HybridMBA team's solution to faculty's concern regarding time limitations in content development was to keep the faculty hiring and contracting practices separate. And their solution for the Virtual Learning Environment was to use Moodle instead of Blackboard. Many of the issues that the big steering group had spent multiple sessions and hours discussing seemed to be discussed as casual information bullet points in this Business School group.

In several conversations leading up to the snapshot Skype conversation with the chief architect of the HybridMBA program, he shared with me details on the new practice based pedagogy that he built into the program and the new untested technology solutions. Two months earlier he had successfully gotten board approval on all of this. I had also studied the pedagogy very carefully for an unrelated project and was surprised to hear him explain that during the board approval process few if any questions were raised about the pedagogy because all the attention was on the new technology and structure. When we caught up for Snapshot 8 it was Day 630.

The chief architect was Skyping-in with me from his hotel room in Dublin at a conference. From his voice I could hear he was tired. He also explained that for the last couple of days he had not been sleeping properly. The fact that he had an important meeting with the Director of the Business School earlier that day may have had something to do with it.

As it turns out our usual five-point research project agenda on practice based pedagogy that I forwarded was not the only thing on our agenda, some new administrative developments on the HybridMBA were to be discussed too. He explained to me that after the meeting with the Director of the Business School earlier that day, that the HybridMBA pilot that was scheduled for take-off four months later has been 'temporarily put on the shelf'. The related programs had the same outcome too.

The reason, he explained from his point of view in polite but deeply disappointed language, was at its core a disintegration of the partnership with the recruiting company. The differentiating solutions of this independent pilot group had tied them to a partner that did not come through for them. He firmly expressed belief that there was still hope for the program to take off the following academic year. However, going forward, it would be a product of the traditional MBA program. He had been offered a new role that he considered even more exciting. "I feel much better now," he reflected. "I have a list of about 30 or 40 [innovation things] I may do in the new role, so I am excited."

CHAPTER 6

COLLABORATION 3

THE DISTRESSED LOCAL AREA'S
ECONOMIC DEVELOPMENT INITIATIVE

The third group of strategic decision-makers (C3) had a comparatively longer history of economic crisis to contend with. Specifically, the government and economic developers on the project persisted in framing the central problem statement over multiple observations, and over various iterations of the strategic stances, because of the need to address multi-generational unemployment. Here too the recent economic crisis provided a new resource and interest pool for collaborations and solutions. As was the case with the Collaboration 1 (Corporate General Counsel) and Collaboration 2 (Higher Education), the formal rationalization got overwritten in feet on the ground discussions. An impressive and diverse collection of the geographic area's industry, education and community leaders, as well as internationally esteemed professionals were brought together, but again the problem framing morphed into the causes, interests and expertise of the socially dominant contributors around the table. Collaboration 3 (Economic Development) ultimately also serves as another example where technology played a central role very similarly to technology solutions which dominated Collaborations 1 and 2.

Though Collaboration 3 is presented third in the list of empirical data chapters, it was in fact the first collaboration to emerge. A social scientist exploring the possibilities of bringing together international researchers assisting in economic development and city planning invited me via email to get involved in this project at a very early stage of conception. Day 1 following this project's development was June 24, 2012.

Initially collaboration 3 was designed to be very strongly workshop driven basin of data (similar to Collaboration 1) with a tight control on capturing the audio and visiual data for intense analysis afterwards. Appendix D shows the informed consent form that also ultimately allowed for over 20 hours of a very in-depth analysis on how vocabulary and power was used to steer outcomes that was not necessary possible to observe and realize in the moment of dynamic interaction. Contrary to expectation though it became apparent that also including data from the extended period of

development before the Design Thinking workshop as well as the period of development afterwards became very important in informing the trajectory and changes that truly informed the emergent innovation.

Over the course of the development of this collaboration approximately 7 government sector employees, 14 education sector, 20 non-profit sector employees and 14 for-profit sector serving a specific geographic area in England entered into a temporary collaboration. With time it became apparent that including the informal meetings and literature that was put together before and after the workshop was also important to the emergence and trajectory of the innovation. This also resulted in being the collaboration with the longest lead time (two years) plus another delay in building momentum afterwards (again two years). Relative to the other collaborations minimal of the fundamental communication occurred via telecommunications in this collaboration. Essentially technology served as a support vehicle in arranging for in-person meetings, yet it was via this specific collaboration's light use of telecommunications that informed the foundational anchors of the M^3 theory when on June 16, 2014 the field researcher realized how strategic decision-making under uncertainty has been occurring on four different socio-cognitive modes that stakeholders may not always see eye to eye on. In consecutive tables, this date is denoted as the emergence of the four modes on table timelines featuring the important moments of each initiative's journey.

Snapshot 1: Getting into a locked room
Day 464

After a few false starts over the course of more than a year, a very strange calendar request popped up a few days before Day 464. I received three clues:

> Calendar entry name: "liddi"
> Date: "Tue, October 1, 2013, 13:00 – 14:00"; and
> Location: "[university] bus school in café"

The question was: "Going?" and I could select "Yes" "Maybe" "No." As big new adventures typically don't start with "No", I selected "Yes". But in the back of my mind I half expected that was not only a typo on the cap lock, but also some letter mixing was going on and the meeting was with me as "Lindi" and not an interesting new person I was about to meet. Either way, I was planning on showing up.

The day of the meeting ended up being a fine balancing act of meetings stacked back to back to back. I could budget for a 30-minute overflow past 2 p.m., but after that I had to run to my next meeting. As it turned out the meeting was not only with a new person named 'Liddi' but also another person that I had not met earlier. However, the perfect storm of a delayed arrival, upon misplaced meeting room key, friendly casual banter, and special accommodations request, had me biting my lip.

Situational incidentals aside this was a different kind of meeting. As I was introduced to the new personalities, a lot of the interaction focused on who they knew. Social Scientist I can be defined as the person with the international rolodex of diverse international renowned researchers and pioneering practitioners. He was the central figure who brought everyone together. Consultant I also spent a lot of time focused on her international researcher's rolodex, but in the group her point of differentiation was connections to British politicians. Non-profit Leader I also focused on political leaders but her point of differentiation was local city council leaders in addition to her non-profit leader peer group. Over the next years *what* the group defined as the problem in need of being addressed ranged dramatically. However, contrary to Collaboration 1 and 2, the method on *how* to fix problems remained fairly constant: A Design Thinking workshop was being planned for one or more city council who was willing to open the door to a collaborative conversation and were willing or able to commit £30,000 in long-term funding.

Snapshot 2: Impromptu academics conferencing
Day 703

Eight months later, on Day 703, came snapshot 2. I had even less preparation for this meeting. In fact, it was so impromptu that the invitation came only minutes before the meeting. Two American friends were in town for the day to visit me so when I went in for the scheduled meeting, my friends opted for killing time by wandering the curvy and raining historic English streets. When the new meeting invitation was extended, I had no mobile connection to them to let them now I may be a few minutes late in connecting back up with them. The impromptu meeting lasted more than an hour. Again, I believe my disposition during the meeting must have seemed on edge.

During this meeting Social Scientist I was joined by a new Social Scientist II and III. Additionally, a University development officer was also a part of the group for the first part. It turned out the University was prepared to make major financial contributions into the Design Thinking Workshop scheduled for next month, and since a Major Metropolitan city in the vicinity agreed to be the subject of the workshop, the workshop got the green light.

Once the University development officer excused himself after collecting the information that he needed, the tone of the meeting evolved into a peer-to-peer exploration of what this workshop could mean to academic researchers. Social Scientist I shared his vision of an economic development accelerator being founded that would not only offer access to research data once through a workshop, but into perpetuity as start-ups are founded and supported inside an accelerator. He proceeded to show a prototype of what he meant by bringing up the website of colleagues from a previous international university who had done exactly that.

The research access angle was not new. This had been a focus for years. In earlier iterations of the plan it was researchers in Australia, Norway, Wales, and Portugal that were his collaborators. The uniting thread between them at this earlier time however was not an accelerator but a technology platform. The access he was granting to Social Scientist II (a Human Resources expert) and Social Scientist III (a freshly minted PhD graduate and new faculty member in entrepreneurship) was new, and so was the idea of the accelerator.

He concluded by explaining how fifty hand-selected community and national leaders would be invited to the meeting. Each of the primary partners were allowed ten invites. The categories were a fairly equally distributed among:
   a) City affairs
   b) Education
   c) Non-profits
   d) For-profit stakeholders
   e) Development associations

On Social Scientist I's list, he made special note of construction professionals in construction from London who would be at the workshop so a new elaborate building

could be built to suit needs. He also shared that an expert in accounting and legal contracting would be coming so that shared professional services could be established for start-ups.

At the two-day workshop I also had the chance to visit one-on-one with both Social Scientist II and III. I was surprised to learn that both attended without having a research objective or a clear idea of how they ultimately stand to benefit. Social Scientist II (the more senior of the two) summarized it well in single sentence. In response to the question, why did you decide to attend the workshop, he answered: "When a person like [Social Scientist I] tells you to jump, you just jump."

Snapshot 3: The risk and the cafeteria plan
Day 723

> "Hi Lindi, I am meeting the leadership team from [the city] at [City Hall] tomorrow at 10.30 at [City Hall]. It's a last minute minute meeting but come along if you like (for your research)."
>
> Email from Social Scientist I
> Day 722

It happened again. Not enough information to make a decision. This time I had a conflicting doctor's appointment and I was a three-hour train ride away from the city where the meeting was supposed to take place. I needed more information to decide if I wanted to take the *risk* of attending this meeting. If the content of the meeting was 'where to put the coffee and confectionery tables' and 'how many microphones are needed' for the workshop, it was not worthwhile. I was in physical and emotional pain. I wept. It was also at the intersection of this very moment that I realized the common theme throughout the collaboration case studies. Needing to make decisions and not having enough information. Uncertainty. Ambiguity. Risk. It was not just keyword in an academic journal anymore. Strategic decision-makers had been exhibiting very fundamental differences in how they responded and strategically positioned to not having information or what information they focused on in light of not having perfect information. And I could code these to observe patterns.

My response to the cryptic email was to email and explicitly request more information. Unfortunately, the information contained in the response did not help me make the decision either. Ultimately, I made the decision to attend - not as an informed person but as a principled and conscientious researcher. I cancelled my

medical appointment and packed my bags for the train. On Day 723 at 10:30 a.m. I was waiting for Social Scientist I in the lobby of City Hall.

Accompanying Social Scientist I was a Research Assistant from another research subject group with an interest in design thinking. Together the three of us took the elevator up one floor to the Economic Development department offices. After checking-in with the receptionist, two economic developers stepped out and announced that all their conference rooms for five or more persons were in use. The solution was to meet downstairs in the city hall cafeteria before the lunch crowd showed up.

In the words of first impressions expert Amy Cuddy (2011), the male and female economic development team exuded the perfect balance of the two qualities that dominates 80-90% of first impressions. The male strongly exuded competence for the team, while the female strongly exuded warmth on behalf of the team. This made the conversation develop well. There was absolutely no need for me to take a lead in directing the conversation as it meandered through unrelated topics that provided helpful background information on who the people at the table were.

The conversation started with pleasantries and compliments about the beauty and cleanliness of the city and about the green transportation options. On cue of the topics ranged from school drop-off times to, familial topics of toys, and how this project could create a better community for offspring highlighting Social Scientist I's personal long-term commitment to the project.

But after about 30 minutes I started to feel that the rationalized and systematic components that specifically apply to framing the workshop were eerily absent. As a professional and experienced Economic Developer myself, I was surprised that this stage did not organically surface. My central interest for this thesis was capturing details on what specific economic development challenges the city was hoping could be solved by getting involved in this specific collaborative problem solving workshop. So after about an hour I directly asked what the economic developers hoped this workshop would achieve. The answer rang like a well-rehearsed buzzword in a city hall (cafeteria): 'multi-generational unemployment' solutions. In this city, the professionals perceived that drug abuse was at the centre of the problem. By focusing

on social enterprise start-ups, they could create jobs as well as add economic value if community generated solutions were brought about by local citizens who understood the complexities of the problem in relation to the people they lived and worked and engaged with locally. It was their hope that more local solutions might be able to succeed where more centrally controlled solutions passed down from London had failed in the past.

Like the meeting with the Social Scientists in Snapshot 2 this meeting also invested a considerable time reviewing the list of invitees and their credentials. Towards the end of discussing the attendance list again, Social Scientist I turned to me almost disappointedly: "I thought you would take more notes on details about the attendees." It seemed important to him. I reassured him that I have not only constructed an Excel spreadsheet with each attendee and their affiliation, but I was also monitoring the project website where he had asked attendees to post their biographies and credentials.

Snapshot 4: The 'White Knight' Two-day workshop
Day 736 & 737

Finally, the big Design Thinking Workshop event arrived. It was Day 736 & 737. The location was a spacious modern design building. On the third floor overlooking the river fifty-five attendees gathered around one of nine round tables with 6-8 chairs. Lots of tactile and colourful toys and tools was available on-hand. This time around nobody was going to accuse me of not taking enough notes. As always, I had my little red research notebook, but in the corner of the room I also set up a recharging and data downloading station with a full suite of technology that I owned or had borrowed from friends. There was an extension cord, laptop for data downloading and recharging, external memory drive, iPhone for backup of audio, photos and video, my iPad for mostly audio, and a GoPro mounted on a hacked 360 rotating egg timer. I was ready for data.

Leading the workshops were two international experts in design thinking. Both had roots in the cradle of design thinking from Stanford University Design School. But the younger of the two had moved back to Europe recently. They had arrived the previous night and had not had extensive boots on the ground experience to understand how the specific nuances of this specific environment might be different from that of the

areas they were more familiar with. They seemed comfortable with the potential that this would organically unfold over the course of the workshop.

The first day of the workshop was mostly dedicated to training the participants in design thinking. The social entrepreneurship focus was a difficult fit with a methodology that had been homed in more tactile engineering and concrete products as the Stanford University and IDEO[3] examples throughout the finely tuned presentation materials would demonstrate. During the prototype building phase groups were also encouraged to keep things concrete with personification of social problems. They were also steered away from trying to advocate system overhauls and instead were directed to focus on that which the people in the room had power and control over here and now.

Nonetheless, when a room of 55 participants were asked to pick which solution from a of list of eight types of solutions they would like to spend their time developing, the attendees allocated themselves into one of three categories. Over the course of the two days I spent several hours with each of these three groups to understand the strategic stance they were developing and advocating.

Group 1: Abstract System Overhaul (58% of attendees)

Two mega groups interested in exploring this tract located themselves in the back of the room. Though the system development did not work so well for the Design Thinking framework the majority of attendees either did not understand this or chose not to conform to the Design Thinking framework. I was surprised to see two core leaders who had been invited about half of the attendees (Consultant I and Non-profit Leader I from Snapshot 1) had chosen to join the A and B iteration of this path. Other participants who chose this path were generally also the leaders invited by these two organizers: non-profit leaders, city leaders, national and regional association leaders and non-educators.

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[3] IDEO (pronounced "*eye*-dee-oh") is an award-winning global design firm that takes a human-centered, design-based approach to helping organizations in the public and private sectors innovate and grow. They famously invented the first computer mouse for apple and even an animatronic whale for the movie Free Willey.

On the second day after lunch, one of the Abstract Change Group spokespersons communicated that every member of his group was experiencing frustration articulated as 'struggling a bit' with coming up with prototyping solutions. The younger Facilitator II summarized why that was expected given the strategic stance they took and gave them a reframed direction to try for the final 2.5 hours of the day:

> "You are touching on a wonderful aspect of. of design led innovation and principles. And this is the ability and actually the permission to reframe the problem. We are usually having to take this permission without actually having been given it from […authority figures…] So you have the permission to reframe the problem. Absolutely. Ummm…maybe, go into action mode, and rather than think of what you would like to have, start to think on what are the things that *you can do* to get there. […] Then things become more actionable. […] You have a very complex systems approach, and I think you have ample opportunity to prototype, and I agree. I agree it is not simple. […] I am curious to see what you are going to come up with.

> Facilitator II
> Day 2
> Day 2: 13:21
> Duration stamp: 01:43 – 03:14

The few rounds of responses to his statement made it look doubtful that they understood what he was saying. However, eventually, Abstract Systems Group A did come back at the end of the workshop with prototype solutions that connected specifically into the accelerator group's starting point.

Right after the Abstract Systems Solutions Group A voiced their frustration the Abstract Systems Group B sensed that a space had been created to also voice their frustration. In possibly the most heartfelt plea of any workshop attendee a non-profit leader articulated her point of view after lunch on the final day in four and a half minutes:

> "And I am looking here, for people here today who is going to help my…umm…organization [A regional council of services]. When the man here mentioned a one-year city he spoke up about social enterprises and gave everybody information about [our city] and he mentioned this and that and the other .[…] I am the founding director of the organization and we are now […] one of those families in [our city] […] I want do something that is in my position when I was five or six years old […] and it has been nothing but hard graft.

> […] So I am here today appealing. You talk about plans and you have this image, and you have social change in economics and one thing or another, but at the end of the day what we are delivering are services to children and families who are most disadvantaged and impoverished in the country (just this part), we delivering services, we are told by the authority, were told by NHS, we have taken data, we have social internal investment, we have our equity anox, we punch well above our weight, we

have about fifteen counsellors and practitioners, all qualified, most of them have been service users, and all of them are from [this city]. You tell me what you need and I will get it for you. But what I want to hear is some guarantee back. That whatever comes out of the day, help organizations like the one that I have founded. And I am going to make this public now, because not many people know, that in come November if we don't get £45,000, if we don't raise £45,000 [over the next four months], we don't exist anymore. And it's alright can we save [My Regional] Council Services, flagship social enterprise, but that is the reality.

We take it on the chin. We say nothing. We do professional stuff, and we continue to deliver services to people and we pretend it's all right. But in the mic. At least I speak [the regional dialect], at least I could relate to most people, I can get people brought in, I can go into communities I can help people wanting a chance and engage with communities. Dead easy. I can get you thousands of clients, that is not hard. I know where people are. The services that we provide were not in the right places. They were not that easy to get to.

So anybody here, that can stand by my side, and help me to raise the money that I need to help the residents of [this city], the children of families and keep them together. I would be grateful for a glimmer of some of that.

And this today, it is not about all this stuff up there (points to mind maps and colourful index cards with ideas), it's about humanity, and people and [our city] standing together because it is an excellent community. And we are innovative. And we are fighters. We were the big society before anybody even came up with that. You know I have a thought about that. It must have been somebody in [our City] because we are doing it!

(applause from the room of attendees that lasts 10 seconds)

<div align="right">

Day 2
Duration stamp: 08:02 – 12:30
Non-profit Leader II

</div>

The Workshop's Junior Facilitator responded to her with a hug and a polite thank you for giving a real-world example of who this workshop is trying to serve. He then moves on to another group for their group discussion feedback. At an aggregate level or collective leadership level, her call for action never got directly addressed.

Group II: Incubator Space
(26% of attendees)

Like Group I, this solution also saw the emergence of two independent smaller groups addressing the same solution. Though the Social Scientist I who initiated this effort was visibly neutral during the workshop by not sitting down at any table and by roaming the room with a camera, this was the idea that he had been prepping his attendees to develop beforehand. It was thus not surprising that his workshop invitees and special invitees who travelled up from London and were social scientists or researchers at his department at the university who predominantly populated

these two teams. The group also contained the consultant invitees. Equally important, the male and female city Economic Developers split up and joined these two iterations of the same idea.

What was *not* said was most important in this segment. None of the workshop attendees introduced, discussed or developed doing a maker's community. The closest that discussion came to that option was during closing remarks of another group's idea (which was also unrelated to the maker movement). The Junior Facilitator verbally interjected:

> "The high street idea triggers some idea. Some friends of mine in Trondheim. We have the highest engineering density in the whole of Norway and we don't have a single maker space in the city of Trondheim. Why? I don't know. It's a bit strange. So a couple of students decided to take matters into their own hands and they spoke with the city council and they actually got a building which is on the [main downtown area walking street] that is supposed to be demolished in a couple of years. But they got it for five years. They don't pay rent and three story two sub story building and they have enormous amounts of space and they are just setting up a maker doing space with this café with everything and they are really right in the centre and they putting their project into the window. Whenever you pass by there is some cool stuff happening which is, which is quite nice."

<div align="right">
Junior Facilitator
Conclusion Day 2
Timestamp: 15:30
[Duration: 09:35 – 10:49]
</div>

The reason this case study is documented in the snapshot is that unbeknownst by anyone in the room at the time it would ultimately subsume all the developments of the workshop and the Facilitator's Idea would ultimately became the definition of the next strategic stance from hence forward.

Group III: Youth Entrepreneurship Training Program
(16% of attendees)

The final and smallest iteration was also the only group to embody the core principles of grassroots bottoms up design thinking. I joined them during their final breakout discussion outside on the patio in the English mid-summer sun.

To the person each of the attendees found a way over the course of a few minutes to showcase their diversity. The eight persons who picked this track all had boots on the ground experience in teaching at different education establishments, worked with a range of different level and aged students, and had expertise in different subject

areas. In interactions, they listened supportively with verbal and nonverbal affirmation and tried to take on-board new diverging ideas to make them fit into broader baseline ideas. They also spent a considerable amount of time looking at their project from multiple points of view. Even when youth, University students, university lecturers, university administrators, and executives would need the project to be structured in a specific way to increase likelihood of buy-in, they would seriously consider if things could be changed or altered to increase success. In verbally articulated language, they were inventing (and calling copyright) on new words like 'new bottom' and creative metaphors. For example, they considered themselves a 'dark horse' compared to the other collaboration teams in the workshop. Their best central idea was their 'white horse,' the one that was most underestimated, but had the best potential was a 'Trojan horse.' Their collection of ideas was a 'stable of horses' and due to the early phase in the development phase the majority were coined as 'ponies'.

The most interesting phenomena observed was that the smallest group was also the only group where an idea was conceived and developed over the course of two days in alignment with design thinking principles. During the group's conclusion remarks to the bigger group of attendees the spokesperson made another empowered announcement that the internalization of self-efficacy had also been achieved. He explained that this project would be moving forward regardless of the broader workshop group's support and invited those who wanted to stay involved to get in contact with him. This was fuelled by a positive response from the small subgroup a few minutes earlier:

> "I will go away and write this up, actually, and circulate it to everyone. Yeah, you all have my [business] card so if you can just send me your email addresses I will send it to everyone."
> Various members of the group: "Yeah, yeah."
> "And we can refine what I have written and we can pull it all together. Umm I will try and get that done over the weekend, some time. How about that?

> Lecture at University II
> Group 3 discussion Audio Day 2 15:18
> Time stamp 31:48 – 32:09

I took special care to make sure he also had my email address. Sadly, the email synopsis and invitation to the follow up meeting never came. The head organizer also

did not hear that the energy and passion for the idea generated at the design thinking workshop sustained itself.

Snapshot 5: The design factory
Day 738

As was arranged verbally, I arrived at the Hotel where the two facilitators were staying a few minutes before 9 a.m. so the core collaborative leadership team could meet with the facilitators before their flight back home. Nobody was around. When I inquired with the front desk about the location of the reserved meeting room, the receptionist assured me that no meeting room had been reserved. No problem, the group was not that big, there was plenty of seating to meet in the lobby. I sat down in a location that allowed me to see the lobby door as well as elevator when the leaders would arrive. Five minutes passed.

09:04. Still nobody. Maybe I had the wrong hotel? I inquired again with the front desk receptionist about whether I have the correct hotel. Was this the hotel where the workshop facilitators were staying? Again, I inquired with the front desk. Yes, they confirmed. And no, they had not checked out. The front desk also offered to call the room. No answer. I sat down again. About five more minutes passed.

09:09. Maybe there was an email reminder or change in plan? I checked my emails. Nothing. I shot the Social Scientist I organizer a quick email: "At Jury Inn [Hotel]. Nobody at reception can help id where the meeting is being held. Please advise." Five more minutes passed. No response.

09:14. A text appeared from the female Economic Developer. She apologized for running late. Relief. I did have the time right. Location might still be wrong.

09:19. The male Economic Developer walked in through the lobby door. Relief. I did have the location correct. We sat down and while we wait for the others we visited about his perceptions on the two-day workshop. In his mind, we were still firmly working on solutions for the multi-generational unemployment. I picked up some statistics that I wished had been was communicated at some point in the workshop: "population of the city proper is 200,000 (1 million in the greater metropolitan area).

Unemployment is 3,000, which is high but not completely out of line with the rest of the nation. The number that is concerning to his team was that five times as many people (15,000) are registered as sick and disabled. The impact of this number puts a very different strain on this government's city council as opposed to most other councils. We chatted for approximately 30 minutes.

09:52 Non-profit Leader I walked past us from the patio on her way to the restroom. She explained that she, Social Scientist I and Research Assistant have been meeting with the two workshop facilitators out on the patio outside overlooking the river. We joined the party outside on two hard parallel wooden benches. The two workshop facilitators (from snapshot 4) and Research Assistant (from snapshot 3) sat together on one side. The Social Scientist project leader and Non-profit Leader I (from snapshot 1) sat on the other side.

Over the course of the next 15 minutes the female economic developer and then later the Consultant I (from Snapshot 1) also arrived. The same content gets repeated (three times) by the Senior Workshop Facilitator every time late comers join the group. It is very important to him to articulate why scepticism in the process was unfounded. It turns out during the concluding night's social function that scepticism with the process had been a core topic of discussion. One after each other the leadership collective at the table reassured him that they were not doubting the process like other attendees may have indicated.

A few minutes later the Senior Workshop Facilitator's taxi arrived to take him to the airport. He departs.

Next the Junior Workshop Facilitator pushed what he called his number one takeaway that he wanted to leave the group with. The need for 'a product.' An artefact, a prototype, a story so it can be presented in a very direct way. This would also make communication 'tangible'.

Today words that he used as a metaphor a day earlier in his concluding remarks to the Workshop group also became "tangible." The "create the space" metaphor became "create the building and bring people together," "create an environment for doing not talking." "Tools" become "I give you access to a 3D printer, wood, material...this is

why I like the maker scene so much. Suddenly you put the power in the hands of the user. This is something you all should consider." We were now explicitly back full circle to the idea he presented to the broader group in the last few minutes of the workshop.

The Social Scientist's response at first seemed like he was just reporting on how he believed that the Professor Emeritus who made a presentation on the last day after lunch would be the key in executing a 'pushing from the top' execution for this initiative. A meeting between the two of them was scheduled to take place that evening:

> "The objective of the meeting is to ask him "What are we going to do, what is the product? I have no fucking clue what the product is going to be. Now, now I don't need to know. This is a co-created product. One of the things I am going to say to him is, this is, (knocks on table) at least some product we can be done together, the university and the city. Not a centre, but something around enterprising society. It is a space, you know.

Again, we were back full circle to the incubator idea that he pitched to his invitees before the event. In vivid detail, he continued to explain how the different stake holders he has brought to the workshop will contribute to the space:

> "It has space at the top where people where organizations can rent spaces for limited amount of time, the social enterprises get these spaces free, but they are mixed in there with industry people trying to work on innovation ideas, you know. Downstairs we have the design thinking living lab. And in the lab, we deal with those different aspects that we talked about so with [my special guests from London] we will get legal experts […] around mentoring and advice on accounting, we will have IT which we will have through our contacts through Cisco, skill building through the university, with all our people like [Consultant I] who are doing these things globally. […] So, what we are going to do is we are going to find an old disused building. We will get our students at the university to kit it out. It will not cost us much."

In response, the Non-profit Leader I and Research Assistant chime in over top of each other:

> Community Non-profit Leader: "Building, yeah that is right. As soon as you find a building I can start the application for funding."
> Research Assistant: You know that Exact 100 has got a digital, something like this? A space happening in [the same Metro area]. Because they could bridge those together. If you want to involve them…? So, they have a presence there as well."

A this point the Junior Facilitator II also chimes in with a cautionary tale that every year one team builds a collaborative digital space. "We give them tools and skills but we try not to push them in this direction, implying with his tone that is not the recommended way to go. Many of these projects fail." The Facilitator then builds onto the picture with more vivid details:

> "Have your meetings in the space. We have a beautiful conference room with a coffee machine but I have board meetings in the space with what hammers and the banging where something is happening. So they can smell they can see what is happening.
>
> Don't buy expensive furniture from steel cage or whatever your British equivalent would be. Put some table saws down. Give the guys some wood and some paint."

To this the Social Scientist responds again with references to his social network: "Give me ten creative university students and they will go around […] and they will find us everything we need." He gestures to Consultant I and references an acquaintance they have in common:

> "[He] is an artist. He will fill it up with art and stuff for us. We can make this happen. And a lot of the kitting out, the painting. I can make it a university project. Where all the different faculty come together and do an assignment. And they will buy into it. And we can make this happen. We could have this done. We could have this built and done if you give us a building in, this time in eight months.

In reference to the Junior Facilitator's recommendation of providing the paint and wood and materials for volunteers to fix the space, the Social Scientist affirmed again via his social network:

> "I have got that. I have contacts with the CEO of B&Q. I can say, just gives a little bit of …£300 worth of stuff. And we have people who come in there like [the prototype] and we will help them quantify their stuff. We will give them students."

The Junior Facilitator then directs the group to a good case study that he considers world class: Aalto Design Factory, a Finnish university sponsored maker space. The maker space idea is reinforced again.

One by one the leaders intuitively start giving their verbal confirmation that they are on-board. In a few instances they are once again talking overtop of one another:

> Consultant I: "This is exactly what you need to do."
> Male Economic Developer: "Get children involved and let them see what is happening."
> The Social Scientist connects this back to the Junior Facilitator's theme of always collecting data on projects for research publication: "I am hoping that two or three papers can come out of this."
> Female Economic Developer: "We done something like this for artists two years ago, but the project had to stop as the building was unsafe."
> Research Assistant: "Great. Call that artist project the pilot and build onto that."

There was energy as the group pitched how to keep momentum using Public Relations and the media. There also seemed to be a consensus that the product needed to be so clear and tangible to greenlighting decision-makers. It also needed to be ambiguous and vague to the public and media. The logic was that if these masses knew too much they could prevent a vulnerable project from getting off the ground. It

would be better to wait for tangible results and success stories before letting them in on the details.

Snapshot 6: Meeting with the Guru
Day 743

Five few days later there was no more doubt as to the product. As was conceived before the workshop it was indeed to be an incubator space. There was also no more doubt as to the type of incubator space. As discussed after the workshop, it was to be a maker community space. The Social Scientist and female Economic Developer pitched their perception on the best strategic stances for moving forward in an energetic dialogue (listed below as key concepts). Half way through the Professor Emeritus also joined the meeting. At the time of his arrival he had already been briefed on the developments from Snapshot 5:

Social Scientist I [8] articulations of strategic stance on moving forward (in order of appearance):
"…Concept needs to be broadened beyond "social enterprise"
"…got to clip [the city council] wing…s"
"…not think in 2-5 years but longer…"
"…2030 horizon needs to shift, evolve…"
"…need to be low key – to not be challenged…"
"…need to be high profile – to get in…"
"…structure a document…" (rephrased what Professor Emeritus said)
"…put things in [the city council's] language…" (rephrased what female Econ. Developer said)
"…need to understand drivers…" (rephrased what female Economic Developer said)
"…linear model on impact in the last REF…"
"…not a top-down model but a co-production model…" (rephrase what Emeritus Professor said)
"…embed in place relevant and important…" (rephrase what female economic developer said)

The female Economic Developer [9] articulations of strategic stance on moving forward:
"…council likes things that are tangible, showcase things, so they can illustrate impact, something to "hang your hat on".
"…lot of properties…"
"…write things and just comes back with questions in writing. It's [better] to get in front of them – discussions are good – relationship, building etc.) …"
"…leaders are very local…"
"…know their policy and know the boxes [the project] ticks. By this I mean when pitching to senior policy makers it's important to know the policy in which the project will sit – which strategic "boxes" is the project meeting. Not necessarily hierarchy, may be my risk averseness – having to meet the expectations of senior people, after all its public money…"
"…two main goals/concepts: economic growth and economic wellbeing…"
"…Memorandum of Understanding with the main local university…"
"…demonstrate – students involved in competition…"

...used words 'incubator' 'refurbished building' 'living lab'...

Professor Emeritus [22] articulations on strategic stance on moving forward:
    "...have to engage the citizens to be a civic university..."
    "...let go to experiment..."
    "...smart and inclusive growth..." (no discussion on how do you do both)
    "...escalate the conversation on the council. Escalate conversation in university..."
    "...need a good network..."
    "...start with strong documents..."
    "...getting to pure narrow town out..."
    "...collaborate with University of Finland in Helsinki to get info..."
    "...correlate with what is currently happening locally and nationally..."
    "...Sell to Director of British Philanthropy Association Then Head of the Business School, then the Vice Chancellor..."
    "...Workshop a capacity building project – invest money in it..."
    "...boundary spanning buy-in from different people in workshop..."
    "...orchestration is a better phrase than leadership..."
    "...Make it City Council CEO's idea..."
    "...have a long-term process..."
    "...use buzz words that work in [the city] ..." (links to female Economic Developer's idea)
    "... [Company involved with Big Lottery] is a good partner..."
    "...To be a flagship you need to be plugged into national agenda..." (Links to a previously mentioned female Economic Developer's idea)
    "...You learn lessons from things that failed. Pay attention to stories on why things failed..."
    "...may even be worth driving down and meeting with them..."
    "...I don't want to take things over..."
    "...would do a letter to Head of Business School and Vice Chancellor..."

In retrospectively reviewing this list of rapid fire strategic tactics that were put on the table to progress the project, the female Economic Developer was also the only strategist out of the approximately forty key decision-makers across all five case studies to come back and request revisions: In three instances points were removed for it did not provide enough context for her to remember what she really meant. In two instances her exact words were altered to be even more politically sensitive. In two instances, no words were changed but words were added so that context and clarity was provided. In one instance a number was changed that I could have possibly misheard. She also linked two of the Professor Emeritus' statements to her own strategic tactics. None of the changes she requested fundamentally changed the analysis or perception portrayed by this ethnography. This interest in managing the details of her words does however underscore and confirms (just as both versions of her quotes do) that as a strategic decision-maker she has a strong sensitivity to conducting herself in a politically astute manner and managing perceptions.

Somewhere amid the dialogue the Social Scientist also signalled that he may be leaving his current university for another university but he would want the effort to continue without him.

Snapshot 7: Meeting in the room with the expensive coffee machine
Day 828

Two months later the group reconvened in a University meeting room with an expensive coffee machine that received a lot of banter attention in the informal portions of the meeting. The five different stakeholders around the table were each pushing specific objectives:

Since the last contact with the female Economic Developer, three city owned buildings were looked at for the accelerator space. They were all vacant and in need of funding if they were to be brought up to city building code. It was also evident that she was experiencing frustration with the city real estate department which was "notoriously slow to get communication and decisions up and down the chain." It was her department's position that for them to be involved the City would need to take (keep) ownership. The University representative agreed that would be best.

The non-profit leader's interest centred on the physical space. Leading bids for bringing buildings up to standard and creative partnerships on available properties were all topics she enthusiastically contributed to.

Since the last contact Social Scientist I shared an amusing tale with the punchline that he ultimately did not get the job offer at one of the top ranked research universities in the world because he wore a leather jacket to the interview. What he did get instead was an appointment to a National Health Service IT project Expert Panel. This renewed the interest in the healthcare angle which was also evident as he communicated his knowledge of where the most updated financial resources and partners are located specifically geared to healthcare. New international partners for parallel projects were also articulated as possible in Greece, Norway and Portugal was also raised. Nobody said it out loud but this healthcare focus did not overlap strongly with the maker space that was defined some 60 days earlier. The group however did build onto the new healthcare angle.

A new face at the Collective Leadership table was a second Local Consultant II. She had been present at the Design Thinking workshops and liaised primarily with the Social Scientist's guests from London on the incubator concept development. In articulating her objectives for this project, the value of *globalization* came up several times. She, like other members of this group, also relied on her familiarity or association with a valuable network of people to define her as a valuable contributor to the group. Keywords of interest that she built her comments around included: "he is global, that increases value," "branding fellowship," "talking shop," "power to create," and "global focus."

The new University Development officer was an even newer face at the table. He commented aloud that he felt optimistic about the project moving forward: "A lot of academics say they have people [from industry interested in collaborating] but here is a group of people that show up in person." The goal was to leverage his expertise and have the paper work for a special and sizable cornerstone European Union healthcare grant submission done over the next few months. The deadline was in seven months.

After the meeting, two groups of post-meetings also took place on unrelated projects. In one corner the Economic Developer and the Non-profit leader gathered, and in the other corner were the Social Scientist and the Consultant II.

Snapshot 8: Social Enterprise Place designation secured
Day 1,506

In the year following the workshop Social Scientist I accepted a position at another university. During this same time, the City economic development department was also immersed in uncertainty as redundancies and restructurations were announced. The female Economic Developer emerged victorious. She explained via a group email that included the central decision-makers who helped originate the project:

> Following the restructure, I now lead on policy and strategy for social enterprise and small business (so this project is still within my sights) and finally shifted a lot of the "noise" from my workload to be able to focus. [...amongst the developments was securing] Social Enterprise Places status from Social Enterprise UK and host[ing] an event last month (that [Social Scientist I] also spoke at – Thank you) that has lit the Social Enterprise spark again – lots of actions and interest (we now have cabinet/portfolio holder buy in too!)
>
> <div align="right">Female Economic Developer
Day 1,506</div>

She concluded that she finally feels that she is now personally in a much better position to make strategic decisions and changes. "Risk taking is something I want to do, but the structure around me sometimes refrains – and quite rightly so, we are dealing with public money after all – however to achieve innovation, an element of risk needs to be taken." I could sympathize. As a professional Economic Developer employed within a local government structure I have run across this very same obstacle when professional role objectives are not aligned to the governance structure - which generally designed for stable and predictable control structures and strategic stances optimized for the department of motor vehicles, assessor and auditor, and not the outlier economic development department which should be resilient and responsive to big shocks in the system. However most commonly the economic department is forced to get the job done using the playbook rules not ideally matched for its purpose.

But the future looked bright. In the group update email, several of the leadership committee members operating outside the confines of government structure also publicly pledged continued collaborative support in resources for this cause. A similar level of energy and excitement towards driving change was observed and noted by Social Scientist I when he spoke at the event led by the female Economic Developer a month earlier where additional local stakeholders were getting involved with the cause.

CHAPTER 7

COLLABORATION 4

THE SOFTWARE START-UP INITIATIVE

Collaboration 4 made no mince about framing strategic stances in terms of technology. It was a software technology start-up. It very intentionally set out to capitalize on the ubiquitous access of software and specifically the dropping cost of video streaming technology in homes and industry. Stoking the fire in the background of this ambitious platform was indeed the ghosts of the economic crisis. Central to the project's strategic stance was one of the founder's self-reported successes especially during the first few years of the economic crisis in increasing profitably of a small to medium manufacturing firm by £200 million. Success by combining the laying-off of workers during a recession with investing in new production technology was one of the factors that had increased the software start-up founder's comfort level with risk-taking and decision-making under uncertainty.

This is likely the project that I joined at the closest point to conception. In a friend-to-friend reconnecting conversation I challenged a Welsh executive who had lost his job days earlier (and undergone some personal changes in his life) to jot down what kind of projects he would like to do next on the back of an envelope I had given him. A day or two later I got a phone call. He had come up with a novel idea: why not combine some of the items on the list in a new way that could solve Health & Safety training needs. In his previous leadership positions he had observed that one in three of companies in a specific industry not passing Health & Safety tests yet they still got insurance coverage. Had he stayed on, this would have been one of the value-added projects he tackled. Why could he not do this as an independent entity? May 8, 2013 was Day 1 of this project when I got the call that he had come up with this idea for a software start-up.

The fact that this collaboration had its roots in a friendship allowed for access to informal communication and "ideas still under development" that would otherwise have been hard to obtain. This is also a dominant component that sets the last two collaborations apart from the first two collaborations. In fact, the Welsh executive

had mentioned at one point that in previous positions he had a history of pre-planning brainstorming sessions out so that he can create the illusion of subordinates thinking they are coming up with ideas when they are in-fact being coached on emergent discoveries he purposefully intends for them to make. Additionally, he self-reported a very intentional relational conduct with subordinates and peers that keeps them at an emotional distance. And though this ethnography provided inside access to unplanned moments around a barbecue and beers with his children present, or speculative chatting in transit, his guard was always up and I have no doubt that I was branded as a potential enemy. Not necessarily because of my role as a researcher in this capacity, but specifically what damage I could potentially do in taking control, ownership, intellectual property or equity away from him. At least that is how the laxk of trust manifests during the first phase of the collaboration's development. This concern (of me and others specifically stealing the company's ideas and starting a competing business dissipated over time) but fundamentally the guards stay up over the full three years of immersion.

After the first few series of tight deadlines and successes contact was especially high with daily in-person or digital engagement during the first six months to make the most of the windows of opportunity that emerged. But once the resources close to me in the North of England dried up he sought out opportunities to start replicating this same type of successes in the South of England and also moved there for much of the time. After this first six months mark contact thus gradually tapered down to visiting, skyping or making a phone connection about once a week. At this time, the energy around the project also became increasingly testosterone driven as ex-military, fire fighters, and manufacturing plant managers become the primary collaborators. I made a point to attend important meetings in-person like the negotiation with a University in the South of England's Health and Safety board, but predominantly sources of access became informal conversations with the Welsh Executive, and corroborations with his ex-marine son that became increasingly involved as I stepped back. Additionally, the list of data media included a diverse range of access to all emails sent from the company's primary email account, letters on formal letterhead from partner organizations, and estimated 2 terabytes of hours and hours of unedited (and edited) raw audio and visual two camera setup footage interviewing (potential) collaborators.

Of the five collaborations, I recognize that Collaboration 4 would be the collaboration that in spite of my broad informal communication channel access could potentially be the least trustworthy. This is not due to a lack of diligence in corroborating or triangulating data from various sources' point of view, but instead the missing pieces that was not politically appropriate for me to pursue what really happened because I was an insider to the initiative. The potential collaborations' public showcase of strong emotions followed by avoidance in so many instances was surprising and as an ethnographer analysing that aspect of the reoccurring pattern still lingers. Overall this collaboration also features the most small bursts in successes, yet the overall collaboration could not quiet succeed in pulling the ambitious vision through over a period of three years to a synergy where the outcome was greater than the sum of the parts. This is the collaboration that I am most aware of the fact that there may be clarifying developments or info that may intentionally been withheld from me as a researcher-participant.

Snapshot 1: Winning a two-in-one prize
Day 83

Maybe it was tongue in cheek, maybe not, but the Welsh Executive maintained the belief that the only way the world will take you seriously was to express important lists as having three components. Not two, (that is too few) not four (that is too many), just three. It should thus also be no surprise that the company's initial strategic stance adheres to this rule:

> "What this company needs are three experts on our team: 1) a Heath & Safety certified expert, 2) a videographer expert, and 3) a software programmer expert."
>
> Welsh Executive

He was fully aware that I fundamentally disagreed with this narrow philosophy as I am a strong proponent of balancing the broader concepts of market demand and proof of concept financing to a similar weight to technical skills, but the technical focal point was repeated enough times for me to start framing communication and solutions in his terms.

Over the first year, balancing these three strategic priorities would dominate the course of action. His stock and trade in manufacturing had been operating with high volume, with low defects, and state-of-the-art-technology. And so, a big portion of

this quest for perfection and precision also carried forward to the new venture even with low volume streams in a fairly unrelated field to manufacturing.

In his own words in the first draft iteration of the business plan, the Welsh Executive marketed himself as having "some Health & Safety responsibility in manufacturing plants" (Business Plan Summary, Aug 9, 2013) where he had been employed before. He made no mention of any skills in videography or computer programming, but to be fair he did own a pricey Cannon camera with the high grade red band and enjoyed photographing nature as well as family and friends. He had also worked with software programmers to design custom solutions for the manufacturing plants in the 1990's, but he had no formal training in that area either.

I had even less skills in these three technical focal points, yet I had opportunistic ideas for solutions. The first solution that I pitched him revealed he had a shockingly high level of distrust of others. And that list of "others" included me.

In snapshot 1 my first idea addressed both the Health & Safety as well as quality videography footage need. As a doctoral student and university lecturer I had access to resources not accessible to the general public. If he legally considered me a co-founder, these resources would also be accessible to him. He was intellectually open and curious to explore where this could lead, but legally he was calculatedly cautious, slippery in his vocabulary and then downright refused to put in writing that this relationship was a legally defined partnership.

My first clue to this distrustful disposition came when I suggested partnering with my three PhD engineering friends with whom I had been collaborating in building a prototype for a social renewal solution in a business plan competition. Our project was on the rocks. What started out as a commercialization plan for new cutting edge renewable water treatment technology got watered down over the course of four months to the lowest common denominator of a eco sustainable coffee shop. I needed to stop this descend.

The competition and training initiative did allow for a small budget to build a prototype. It also had an opportunity for an expert network connection to the rest of the university. As a university 'project' it also had facility access to unique advanced

machines and work spaces. A special showcase event that could be a launching point of the next phase was also scheduled for two months out. And it had the potential of gaining access to up to a £5 000 start-up grant. It took over a month's gentle nudging and reassurance to convince him to at least meet my project partners.

A single one out of the three frayed PhD partners showed up to the meeting. The meeting went very well. In an email to the rest of the team the Civil Engineer PhD shared his opinion:

> "Dear team just like Lindi mentioned, I had the privilege of listening to [the Welsh Executive], I must confess the concept is fantastic and can make a very good commercial project. The idea is very relevant to the [area]. Its development is also well advanced. There's also ample room for us to fully participate in its execution and get something ready for submission [...] I would really appreciate it if we all try to organise [another] meeting.
>
> Lindi with respect to the deliberations yesterday, I was able to secure authorization to interview lab users in 2 of our labs in school pending possible dates to be announced by us. I'm yet to hear from [utilities company] and [the other business where I have contacts]."

<div align="right">Civil Engineer Ph.D. student
Day 83</div>

The project went from strength to strength. The group signed on and the two interviews mentioned in the email exploded into eleven interviews. Each interview was in a different lab with expensive and dangerous machinery. Each interview showcased a different science, with different hazards, different expert articulating Health & Safety from their personal point of view. From in front of state of the art DNA machines to working atop of dangerous skyscrapers where few had set afoot. And in each one of these unique locations we videographed a different Health & Safety professional explaining and demonstrating the best way of dealing with these extreme terrains including vivid narrative examples.

The University Health & Safety department also gifted us six beginner level lesson plans that were expertly designed and detailed that could be converted into prototype lesson plans for general organizational as well as specialty lab, shop and construction site use. They also endorsed the concept of an integrated online Health & Safety learning platform that can provide workers/staff/contractors with tracked levels of mastery and badges that follow them from university to work, and could be carried forward into their careers as their responsibilities for the Health and Safety of others increased. This would cut down on the common complaints about being able to

substantiate that content was understood (with a quiz); space and time constraints are resolved (by making content available asynchronously online); ensuring that new updated training gets completed at the right level and time (with an individualized course completion tracking system). The University Health and Safety office furthermore sponsored the prototype showcase event to the public and provided pens, bags, banners and more educational material. The University also provided £1,000 to build a first prototype to demonstrate the concept.

But somewhere in the background of all the success that came together in a matter of 39 intense days was a lurking, lingering deep dissatisfaction. "You say these people are not going to stealing the idea because their focus is on their PhD but you don't know. For all you know [the Bioengineering PhD student] has a father or an uncle that is a lawyer. They are your friends. You need to make sure the non-disclosure agreement gets signed." All members signed with no hesitation. What was more concerting to me is that this person I considered a friend evaded attempts I made at explicitly defining our legal equity position. He seemed perfectly comfortable morally with the idea of me sinking money and time into the project receiving no equity or assurances of a partnership level of respect. Control seemed to be very important to him.

Snapshot 2: The guitar with a broken bridge
Day 153

The Snapshot 2 initiative, started out in parallel with the Snapshot 1 initiative and addressed the third need for a quality software programmer. As it turned out, I had a friend in Silicon Valley who had started up a fair number of software businesses. Maybe, just maybe I should introduce the two men to see if they hit it off? Maybe the Silicon Valley Entrepreneur (and software developer) could come in as a partner? This idea turned out to be a catastrophe.

Over the course of 3 months they interacted via Skype and email 7 times. I listened to them talk on Skype. The conversations sounded polite to me. But there was no trust. From neither side. The Silicon Valley friend estimated the cost of building the platform's phase I would be to be around $44,712.50 for and estimated 12.775 Man-Months. That meant ($3,500/man-month). At least that provided a benchmarking starting point.

By Day 123 the Welsh Executive had already started dabbling in computer programming as he put together the prototype site and videos for the University Entrepreneurship competition showcase. I forwarded him a link to a local computer programming club. Maybe we should check that out for leads to computer programmers or resources? He agreed.

Ultimately, he attended alone because I had a scheduling conflict. At the computer programming club meeting he made an important discovery: He didn't want to get "fleeced" by some computer programmer who controls his code. The issue was once again *trust*. He decided to call up a computer programmer that he knew personally. A person he *trusted*. An ex-colleague from a 'low-level university' that is young and not too wise about the world, but had a good heart. Via text the ex-colleague accepted the invitation to join us for a tapas dinner at a tasteful upper end restaurant in the Lake District. It went well. Five in-person meetings followed over the course of five weeks. We even met his girlfriend. Every meeting lasted for hours. He seemed to be on the verge of accepting a 20% equity partnership deal with a 20/20/60 split in equity. But something was off. This time it was I who did not trust the ex-colleague. The Welsh Executive painted the ex-colleague to be a 'good guy'. A loyal principled man. If there was a snake in the grass it was because of his 'controlling girlfriend' but I did not perceive this in the contact that I had with him in informal meetings.

The reason I had a different perspective on the loyalty of the ex-colleague was that because he openly ridiculed his current CEO (a man he knew the Welsh Executive despised). He bragged about how he waited until a new software project was at a crucial make or break point and then proceeded to renegotiate his salary to be the second highest paid employee in the organization. He jokingly volunteered to steal industry mailing list contact information for the new start-up. The Welsh Executive wrote this off as either informal banter or "that controlling girlfriend of his put him up to it." I agreed that she conducted herself in a smart and calculated way. And at a surface level he appeared to be casual and easy-going. But I was not sold on his high trustworthiness.

Late in the afternoon on Day 153 came the phone call. The ex-colleague and his girlfriend had invited us for dinner at their home. The invitation came so late that I had already finished dinner. Driving over I made a prediction: this was the end of the

line. This partnership was not going to happen and they were going to communicate that tonight over dinner. The Welsh Executive was more optimistic but conceded something was off. If this was the end of the line that "controlling girlfriend" was behind it.

Their home was beautiful and comfortable. The girlfriend explained that they had recently joined a local fresh foods co-op. Every week they got a surprise box of seasonal vegetables. They never knew what would be in the box, but they are assured that it is always full, diverse, fresh and in season. That sounded nice. The impromptu dinner was inspired partially from this week's veggie box. While the girlfriend was cooking dinner, the men sat at the kitchen table talking about guitars. The ex-colleague brought out an old Hoffman with a classic non-traditional body. It had been in the family for a couple generations. The ex-colleague explained that he knows he is not a very good player, but he loves playing. The problem was there was something wrong with the bridge and it needed restringing. The ex-colleague explained that he had taken it to a few guitar shops to get some issues fixed but it looked like they had filed things down inappropriately and unevenly so the guitar was in worse shape than before. This was not the first time this guitar was brought up in conversation. The Welsh Executive owned seven guitars himself. He also thought he could fix and restring that guitar for the ex-colleague.

Shop talk happened over dinner and extended into coffee and biscuits in the living room afterwards. The ex-colleague proposed a new idea. He was concerned that programming the platform himself would be hard on evenings and weekends. His solution was to keep his full-time job but engage the services of a friend currently between contracts to program the platform over the next three months and be ready for beta testing that I could offer with 150 participants in six months. The ex-colleague could supervise this contractor every evening after work and explained that the going rate would be £15,000 for the three months. With the dollar-pound exchange rate at the time it was the costlier software programmer proposition. The Welsh Executive listened carefully and told him he would get back to him.

Throughout the evening I felt something was off. I could not put my finger on what exactly went wrong. Though the chat was future-orientated and included specific plans there was something unsettling. But then as we walked out the door the ex-

colleague entrusted his family guitar into the hands of the Welsh Executive. "Give it a shot. See what you can do with the bridge. I will get it back from you next time." I was blown away. Clearly, I was wrong. Clearly, he was vested in a long-term partnership.

A day or two later the Welsh Executive confirmed via text message to go ahead and contract the programmer classmate of the ex-colleague. The agreement was accepted as proposed that night of the dinner. However, the ex-colleague was never heard from again.

In closing the feedback loop with the Welsh Executive to ensure this snapshot was presented accurately he reflected on the exact moment this specific big shift happened in trying to find a computer programmer vs. becoming a computer programmer himself. For him the moment happened a couple of weeks after the guitar moved into his home and communication with the ex-colleague ceased. He recounted his snapshot vividly: I (the fieldworker) was standing on the stairs when he asked me if I think he should just learn how to code and do all the platform programming himself. He recalls his words as: "You know I will descend into a black hole if I try to build the computer platform by myself?" He says he doesn't think I quite grasped the impact of that moment. Apparently, my response was light and encouraging. But the impact was clear to him and he decided to continue with the challenge by teaching himself to code.

Snapshot 3: Finding a new port of entry
Day 337

After the business plan competition ended without a win, my university's interest in extending resource support also dried up. However, the blueprint for the strategic stance had been cast. If this 30,000-person university would not be the partner with whom to develop and prove the Health & Safety prototype, then a similar university elsewhere could be the one? Senior Health & Safety department officers had already admitted in correspondence that they were trying to do a very similar thing on their own. Was this not proof that there was a market? The prospect of collaboration was shut down despite a very generous offer: 8-hours of staff time to do video interviews and discuss platform needs in in exchange for three Health & Safety videos. Apparently, the cost was too high. The department's deputy director explained her position in the following email:

I apologise if you got the impression from my staff that this is a project that we would be able to run with now. To be clear, [our department] have not got anytime this calendar year to do any work on this. Even a mini collaboration isn't a priority for us. [...]

I am not sure if you aware but the Staff Development Unit (SDU) are already working with a provider to produce e-learning including film clips. I suspect they will have been through a tender process for this training provider. Here is the link to the induction videos they have done [embedded link] We have been involved in producing a fire safety video with them which will be rolled out shortly. [...]

If you are still interested in working with [the Department] in future, please can you get back to me around Easter time next year.

<div align="right">

Deputy Head of University Heath & Safety Department
Day 156

</div>

An inquiry for a meeting was indeed made around Easter the next year. The Department ignored the email this time.

At the same time, similar deals with other universities were pursued. Like before it was a student project request and interest in Health & Safety that opened the door to a meeting. This time it was the Welsh Executive's son, a final year undergraduate student and Marine reservist in the South of England who made the connection.

Over the course of an academic year the Welsh Executive systematically gained access to a few hours of interviews on camera from the university's Health and Safety employee, received access to background roll footage of persons interacting in different university environments, and produced the first induction lesson for incoming students, custom made to this University's priorities. The tone was light and cool, but serious without being oppressive as Health & Safety messages often tend to be. It was purposefully a point of departure from the doom and gloom videos often found online.

One year and two weeks after the inception of the idea, on Day 378 and a full academic year since contacting the University's Health & Safety employee the duo were at last granted 15 minutes to present their video, idea and proposal to the University's Health and Safety Commission. The specific objective was to get them to commit to piloting the basic platform with one induction video to the incoming Freshmen class in September 2014.

I travelled to the south of England to support and observe this important moment. The Welsh executive had by this time made the South of England the focus of his start-up's media headquarters.

A board of 15 university academics and administrators sat in a room configured with a modular rectangle table. Upon the Health & Safety Director's and ex-marine's recommendations, the young 21-year-old reservist marine and student was to make the presentation. I was familiar with the content of the presentation so I focused on observing the board's non-verbal language. The new board president (who had been elected one meeting earlier) was visibly not focusing his attention on the presentation. He seemed almost irritated by not even looking up during the video clip. It was possible that he had seen the video before and made up his mind, or he generally did not see the value of moving training online.

After probably 15 minutes the student was cut off and the board president requested the three-person visiting party wait in the lobby while the group conferred. I was worried that the cut-off was so abrupt that they did not even understand the proposition. Five minutes later we were invited back in, asked a few questions, and informed that the Director would inform us of their decision. Their response came after the goal start date had already passed. A series of back and forth vague attempts to escape a commitment to another meeting was ultimately met with: "Sorry, the non-authoritative tone of the video is not right for our students." Fixing the tone and style did not seem to be the solution to restoring the relationship either.

Snapshot 4: Drinking from the fire department watering hose
Day 184

During the same academic year that the relationship with the Southern England University partnership was being pursued with in-person meeting with open agendas every few weeks, the Marine reservist student also pursued alternative paths. He lived across the street from a Southern England Fire Department. On Day 184 he walked across the street and met the Fire Chief who also happened to be an ex-marine. The Marine reservist student explained that he is a part of a team that is working on a series of Health & Safety videos for the local university. The Chief explained that they are absolutely interested in the connection with students living off-campus to

communicate fire prevention messages. They enthusiastically nominated a young fireman to appear on camera as spokesperson to connect with a student demographic. In reviewing the footage, the young fireman *looked* more the part than he *sounded* the part as spokesperson, but progress was being made – more expert videos. Additionally, the Fire Department also provided special access to training events and practice burns where firefighters strapped GoPro cameras to their chests and helmets and were then challenged to contain a fire, scale a building or unroll a hose in a short amount of time. The videographing duo assured me the footage was not sped up to appear more impressive. It was truly exciting to be able to feel like you were traveling into a dangerous unknown situation while being safely behind a first-person projection of danger.

The Fire Department contributed an estimated 16 hours of footage to the start-up. There was even talk of a small financial contribution for videos that could be used. When the Fire Chief accepted a new position, the resources and access dried up too.

Snapshot 5: Biggest hospital in Europe lifts the fire curtain
Day 276

As luck would have it, the Fire Chief was recruited to join the Health & Safety team of the biggest hospital in Europe. And a part of the first set of initiatives that he was responsible for was a Fire Safety video. He knew just the people for the job. In writing he promised a small amount of funding to be available, "[...] but not enough to buy a Ferrari."

Over the course of two intensive days, the Welsh Executive and the Marine Reservist got access to a variety of special interest points in the hospital. By now the investment had been made in another identical high end Cannon camera, an identical Apple Desktop and the full top of the line video editing suite had been made. Additionally, two small water and extreme heat GoPro action cameras had also been acquired. And even though the Marine Reservist graduated University, he turned his focus to becoming a full-time employee on the Health & Safety start-up with his Welsh Executive dad, renting a space in the South of England as a base for the Media company to keep on developing prospects.

A few weeks after the final video was completed and hand delivered to the hospital, a damaged torn envelope arrived in the mail from the Hospital's Board of Directors. Inside was a letter from the Health & Safety Officer on behalf of the Hospital Board of Directors thanking the team for the high-quality video. Unfortunately, the board was not able to pay them for their services or contract them for future work at this time.

Snapshot 6: Biggest fire training college needs emergency videographer
Day 418

However, all was not lost. While still on the hospital campus in Snapshot 5, the ex-Fire Chief got a fire inspection visit from an old friend (another ex-marine) who was a trainer in fire and explosion analysis at one of the biggest fire training colleges in the world. They chatted informally and they learned the fire training college was located on a 500-acre (2 km²) campus in central England. The space hosted practical "learning labs' where planes, trains and automobiles as well as buildings and shipping containers (with a variety of different types of content) would be put in situations that ignite fires and explosions. Per the Fire Training College's mission statement, they aim to provide: "leadership, management and advanced operational training courses for senior fire officers from the United Kingdom and foreign fire authorities," so fire rescue teams can learn, practice and improve decision-making under uncertainty on a controlled campus. The Expert Fire Trainer shared that their on-staff videographer would not be able to do one of the training sessions and with the Ex-Fire Chief friend's endorsement he would be willing to gift that opportunity to them.

At first the videographing duo saw this opportunity to get access to rare and even more dramatic footage of when things go wrong. The novelty and authenticity of being able to see what happens to fire and explosions in real-time was sure to maintain attention and leave an impact with Health & Safety learners in run of the mill companies. It could be an important point of differentiation. They jumped at the chance to fill in and prove they could provide quality work in extreme and difficult and dangerous conditions with a one-day turnaround on videos.

Day 418 marked the first success of what would later be extended into an invitation to do a series of weekly filming over the course of the summer and into the autumn of 2014. After an intense two-days' work at the Fire Training College I caught up with

the Welsh Executive on the phone. He gushed about the size of the campus, the surprising speed at which a fire can destroy things, the explosion that they had caught on camera when a fire was starved of oxygen and then someone opened a window. The Marine Reservist once told me that he feels most alive when he is training and he gets to activate and launch a live grenade. It is the rush of energy to perform and make the right decisions when the stakes are high. I was hearing the same energy of feeling alive and in awe from the Welsh Executive.

By Fall the money was still not up to market standard but the logic for continuing was that they had gained rare and quality footage. Their skill and speed in capturing cinematic moments in high pressure live shoots as well as editing and colouring videos to a high standard had dramatically improved. During this process, the team also invested in increasingly advanced crane, glider and even experimented with drone technologies.

However, the incremental value of gaining new and interesting footage different from the previous burn had worn off. They declined the option of continuing the videography past Day 548 for the small amount of money that was offered for their work.

Snapshot 7: The founding of a new media company
Day 549

During the following year there was a drift away from surrounding themselves with expert Health & Safety access. One last ditch effort was made to connect with manufacturers of Health & Safety equipment in the East of England that resulted in a video that was showcased in the UK Parliament(?) as well as a new product launch demonstration period and by Day 816 these videos and the preceding videos were officially demo reels of a new-found media company. In reviewing the company's unique selling proposition as told by the images and videos in its portfolio they specialized in dangerous, high stress, high stakes precision work if clients need videography done right the first time. But over time it started to soften. Instead of Health & Safety videos the duo branched a tourist attraction video, a retail import sales company and a health education video. None of the later products produced income; purpose of spending the following year doing primarily non-Health & Safety videos were rationalized as diversification of the product range.

There was also a second stated reason for the spin off media company. The Welsh Executive explained that his Marine Reservist son had been demonstrating a specialized talent and skill in the photography and filming aspects of the business. Consequently, the Welsh Executive wanted to give his son something to sink his teeth into deeper and develop for himself. This Marine Reservist son however had a different idea - he wanted to design and craft leather goods like belts and wallets instead. This was also the passion that he started pursuing shortly after the media company was founded. However, by Day 1,108 he departed from that personal full-time entrepreneurial pursuit too and accepted a full-time position at a big, stable and branded employment recruitment company in Wales.

Snapshot 8: The overheated computer
Day 805

Like Snapshot 7, Snapshot 8 also commences as opportunities in the South of England started to dry up. However, differently from Snapshot 7, Snapshot 8 does not wither with the death of the media spin-off company. In fact, it gains momentum as the expert Health & Safety and expert videography (or media) objectives drop away to leave only expert computer programming. By Day 805 (after giving the media company about a year to develop) the focus and energy turned completely inward, which was eerily like the black hole he warned me about years ago.

The Welsh Executive's daily input of time and quality in his project did not change. His long 18-hour days 6-7 days a week were even more common now than when he was a manufacturing executive. The same level of excellence and perfection that was expected of teamsters was now expected of himself in mastering computer programming. His focus on solving programming problems so narrow and intense that it takes months before he realizes the prolonged daily exposure of his overheating laptop on his lap had been burning the skin to become disfigured and discoloured. Unlikely to ever heal again. The Welsh Executive had successfully built a software platform, tore it down, re-built it again with improved programming languages, tore it down, and then re-built it again. Better, stronger, leaner every time. Small scale beta testing confirmed the success of the technical execution of his work.

On Day 1,171 I learned the Silicon Valley definition of a high-level computer programmer. The type that is so hard to find and sought after by the big Silicon Valley companies. It is any computer programmer, no matter their level of formal education, who has been a major contributor on at least two software product builds. The Welsh Executive had not only been a major contributor; he had been the sole contributor on projects typically completed by teams of software engineers. And like the Welsh Executive doing the odd video here and there, he had also in the preceding months started coding a multi-lingual online shopping retail platform. A friend who had started an online retail sales company at the same time as the Welsh Executive three and a half years ago had outgrown her paid template storefront and needed custom solutions to deal with her high-volume sales and inventory management system. The Welsh Executive was able to not only code solutions for her but also transform the system to accommodate online sales from every country and every currency. At this moment, I realized the Welsh Executive may not have become an entrepreneur over the course of this journey but he had in fact transformed himself into becoming two of the three technical experts (a computer programmer and videographer) which he initially set out searching for when he intended to become an entrepreneur.

CHAPTER 8

COLLABORATION 5

THE CORPORATE COACH &
INTERNATIONAL RESEARCH HOSPITAL INITIATIVE

Finally, Collaboration 5 (C5) also initially claimed to position itself philosophically in the context of the economic crisis. As stress and workload demands on workers increased (not to mention stress on laid-off workers seeking to re-enter the workforce), this healthcare collaboration sought to the window of opportunity on taking a successful medical model for wellness intervention to corporations for worker wellness programs and leadership development. The Healthcare collaboration specifically set out to pursue problem framing outside of technology with geographically sensitive problem framing resulting in geographic franchise licenses and a strong focusing on in-person human-to-human contact. This fifth collaboration's initial strategic stance resisted technology influence and put human elements above scaling exponentially.

This is probably the hardest project to pinpoint when I joined the team. In one sense, it could be August 2013 when I invited a US based Public Health lead investigator and State Health Council Board advisor to join me at the British Science Festival. I could offer her an opportunity to collect primary international data using a new rubric she designed. The second and probably more accurate point in time was when I officially joined her team was a year later in August 2014. I could have worked with her team long-distance, but she specifically asked me to be a part of her team doing an intense six-week product development workshop in January 2015 in the US. I did not accept the offer right away. For the purpose of this ethnography Day 1 will be framed as December 12, 2014 when I arrived back in the US and almost daily discussions on the initiative commenced.

Similar to Collaboration 4, there was a pre-existing relationships working on various projects over more than a decade that facilitated the interaction on this project to be on the more informal side. In fact, the core team-members trusted me so much that

they allowed me to live in the basement apartment on their property for six months while their son was in South Africa. Also, similar to Collaboration 4 the contact with key members of the Collaboration 5 team was almost daily and it was all in-person. In a few rare instances there were emails exchanged, but that was mostly to share reports or formal thinking that needed to be disseminated outside the collaboration's core members. In the last year once I moved away, contact was still mostly in-person and informal, but similar to Collaboration 4 tapered down to about once a week.

In this specific initiative, it is important to note that the M^3 Theory was well developed and also understood by the Executive Coach who had a PhD herself. But despite the success in having the vocabulary to be able to talk about strategy more concretely, a theory blueprint, a clearly articulated need for a strategy that can scale, still the moment of inspiration and clarity for creating a transformative solution to wicket problems did not arrive by sheer cognitive brainpower on emersion, but lucky accidents and being open to better solutions. It also became valuable over the growth and development of this Collaboration to be able to communicate using the epistemology of this framework why a shared understanding of strategy should not be assumed as outsiders advised with good intentions on dimensions that did not apply to this specific collaboration. Media through which this collaboration unfolded increasingly to actualize its full potential included the full gamut of in-person as well as group based technology communication that is allowing the project to be stand tall as a global initiative with capacity to grow even further.

Snapshot 1: The Aneurism
Day -699

This journey started with a heart aneurism. Not suffered by a member of the collective leadership on this specific project, but a young executive in his forties who was a client of a professional executive coach and licensed psychologist. The executive coach recalled the moment she realized that there was a bigger picture that needed to be in focused on corporate wellness:

> "I was doing Executive Coaching for Fortune 500 companies. One of my clients was an executive in his early forties and a rising star. Part of the coaching contract with him was to determine if he wanted to stay focused in his specialization where he was the top global performer, or to move into a succession planning tract as a possible next CEO. Then he client suffered an aneurism. This lead on to him needing brain surgery, which lead to him needing to take a particular pharmaceutical drug. However, the drug interaction was not good. It was at this point that he reached out from his

hospital bed so that his medical team could work with me to come up with a more integrative solution for rehabilitation."

She goes on to explain that the executive made a full medical recovery but the experience was a jarring realization. In an emotional narrative of the account she wrote that she perceived to be the best executive coach she could be, she needed to pay more attention to integrative health and wellness during executive coaching.

Over the next year she went on a detour of trying to partner with Universities pursuing large scale public health solutions. At the time, she perceived primary research to be the solution. It was during this time that she also discovered existing research from the medical community on the topic of stress, wellbeing and resiliency.

To further her knowledge, she enrolled in a nine-month course at one of the leading research hospitals which also happened to be leading the charge in integrative medicine in the US. When this program concluded on Day -100 she explained that she was invited by the Internist who designed the continuing education program and authored a series of general audience health books to join him in also leading workshops on the topic of stress management. The invitation was expressed as a 'partnership' that could extend the outreach of his program. A similar partnership invitation was extended to a group of hospitals in Colorado and a medical professional in Tennessee.

Snapshot 2: The first $20,000 raised
Day -28

Over the preceding decade the Executive Coach also had demonstrated and developed her affinity for community wellness leadership. This could have been due partially to her role as the wife of a Mayor. Her first idea in response to the Internist's invitation to partner was thus to invite him to discuss his series of general audience books on managing stress in her local community.

Together the Executive Director and Mayor used their connections to raise money and in-kind donations from seven community organizations to pay the Internist's travel expenses and a speaker's fee. The Internist indicated that he typically commands fees of $10,000 for a set of one-hour morning and evening workshops,

but he was willing to accept $4,000 and all expenses paid as a favour as well as Skype in for five follow-up sessions over the next six months.

The Executive Coach and Mayor hand-selected list of around 200 community and business leaders from the metropolitan area to attend one of the two offered sessions. Many were visited and invited in-person to receive their invitations. An additional estimated 100 community members with a strong interest in the topic also received an emailed invitation.

By many numeric accounts the community event was a success. Attendance was close to capacity. About 25% of attendees elected to partake in monthly keep in touch session where the research hospital Internist Skyped into an auditorium hall of attendees, answered questions and explained detailed sections of his book. But most importantly, five companies also committed to a training contract of $15,000 with the research hospital's internist to train their corporate Human Resource specialists in supporting their organization in resiliency and wellbeing.

Based upon these responses the Executive Coach and her Mayor husband decided to found a non-profit to be able to do more events like this. They also decided to enrol in a weekend entrepreneurship workshop based on the work of Steve Blank to develop this concept to its best strategic iteration.

Snapshot 3: The $10 million chandelier
Day 7

Day 9 was a big day. A week earlier I had arrived in the US from England, and a day earlier the Executive Coach, the Mayor, and a friend from Britain had visited with a lawyer about getting a 501(c)3 non-profit designation. On Day 9 we all piled into the same car for a three-hour trip to the world-renowned hospital where the Internist had agreed to meet for contract negotiation.

Prior to the meeting he had sent what seemed to me as was a franchise agreement. As long as the Executive Coach and Mayor's non-profit does business inside a one-hour driving radius of their home-base metropolitan area, he would give the non-profit 15% of the workshop fee for workshops that he facilitated, and he would expect 15% of the workshop fee for workshops that the Executive Coach facilitated locally.

This regional boundary made no sense to me. In fact, I was very worried that within 3 years they would have exhausted the opportunities in the local area if the same workshop that he was licensing to the Executive Coach was the extent of the content. My recommendations were:

1. Don't sign a contract with geographical boundaries in this technological day and age with technology when everything can be so fluid,

2. Don't just rely on the hospital name and title of the Internist and his books for building *your* brand, develop your own original content, do your own original research. There are things that the Executive Coach could do better than a medical Doctor, so tap into that, and;

3. Don't expect to see a stream of revenue from corporation officers who you recruited for him, but he trained. There is no way to inforce the 15% royalties when they come back to their corporations and do internal training on the content you presented.

In email conversation, the research hospital Internist downplayed the contract on the table as just cut and paste of what the world-renowned Hospital does on franchising, and he knows that 'some of it may not even apply to our situation.'

The leadership collective's response to my three concerns were:

1. The Mayor did not have an interest in the area outside the metro that he served. He was more interested in the local community because that would benefit his constituents.

2. They liked the impressive hospital and Internist's medical brand. They perceived it to open doors when they would tout and market someone else's as impressive and smart as opposed to selling yourself.

3. They may have agreed with me on this, but it was not worth picking a fight with a stress expert on this.

The hospital complex was beautiful, tasteful, and clean. High ceilings, and art. Oh what beautiful, massive sculptures and collage mosaic art pieces. It reminded me more of a high-end hotel than a hospital. And the focus on research focus was also front and centre in massive golden letters on archways and special glass panelled 'inquiry rooms' as people entered the main lobby.

The Internist came down to the lobby to meet the four of us after a long drive. His handshake was much milder than the tough image I got of him based on the contract he forwarded. He seemed surprised to see me and my 6'4 British friend with the Executive Coach and Mayor. In what appeared to be a gesture of hospitality he told us about the specialness of the hospital for a few minutes and then pointed to a big chandelier like kinetic glass sculpture overhanging the stairs: "How much do you think that is worth?" I had no clue. "$10 Million dollars. It was a gift from a world-famous artist." I could imagine that. That if you give one of the most famous research hospitals in the world an elaborate gift and just tell one person without substantiating it is worth a couple millions, they talk and point to it, accidently increasing the number of millions with every story to make it more dramatic, and before you know it all your similar work could easily escalate in price. And then ultimately, who will distrust a doctor when he says something is worth $10 million when it has not been appraised in 10 years. Another real-world example of example of decision making under uncertainty.

At the end of the tour the research hospital Internist indicated to me and my friend that his office can only accommodate two guests so the Executive Couch and Mayor went upstairs with him to negotiate the contract. After a little more than an hour they returned. The contract had been signed as is. No franchising fees were included for the first year to help the non-profit get up on their feet.

Snapshot 4: A media darling
Day 47

In the days leading up to the Product Development Workshop I was charged with putting together an introductory presentation of the central concept of this initiative. I started to put my feelers out for this Internist's brand equity. It was apparent to me that I was taking a much harder lined approach to him in the negotiation phase than did the Executive Coach and the Mayor. They did not perceive him as manipulative and opportunistic, and that was what I was warning against. To be fair I had not heard him speak at that point, and I had not read his books either. Every quote they gave about this doctor was in my mind a calculated hedging of expectations and self-aggrandizing. The fact that all the quotes came from informal conversation and emails did not relax my defences and distrust.

And then I googled him…

In the days leading up to the introductory presentation I made a couple of discoveries:

- **YouTube:** A video by the Internist illustrated his capacity as an author and he uploaded a short four-minute training video. The graphics were simple but the video contained professional animation narrated by his 10-year-old daughter. Within 4 days it had been viewed 45,376 times. For context, my personal best with a vested audience of 20,000 had been around 200 views over one month.
- **Huffington Post:** I looked a little deeper and found that he had produced a Huffington Post Article that provided a link to the video. I was not able to determine how many times that article was viewed.
- **Facebook:** I also sought out the Internist/Author's Book traction. That too was an extremely respectable 15,000 at the time. For context, I was ecstatic when my professional social media streams passed 250 followers.
- **The Atlantic:** In a completely unrelated cascade of events I also weekly check out the top stories in one of my favourite Research & Development magazines. And there he was that week. The Internalist/Author was interviewed by one of my favorited magazines and his story was trending as one of the featured top 10.

The Internist and Author seemed to be doing a lot of social media and public relations at a high-quality level. Upon inquiry, I also learned that he had paid $5,000 to produce the video by professionals. And in the new year he had also decreased his workload at the research hospital to 80% to dedicate Fridays to the development of his for-profit Global Centre that was independent from his Hospital position.

Though his books were published through the famous logo of the research hospital with a strong portfolio of health books, the licensing contract was with him as an individual. Apparently, the hospital made an assessment on the intellectual content and future earnings potential and because it did not meet the $25 million potential threshold, he was allowed to pursue it independently.

9.5. Snapshot 5: A 'building faster horses' workshop
Day 73

Day 30 marked the beginning of an intense six-week journey for the non-profit organization. At this point the Executive Coach and Mayor had been joined by a recent graduate who had been working in customer service at a local bank. She made it very clear that she desired to move into marketing job functions but over the past two years that path had been blocked for her at the bank. She was volunteering to work for this non-profit start-up in the hopes that a full-time marketing position could result from it. The other new team member was a student who was being paid as an intern from a special fund for University students to gain practical experience before graduation. She made it clear that in this was her final semester, and that she already had a job secured, and she would feel more comfortable working closer to 10 hours a week rather than the allotted 15 hours a week for which her internship had been approved a few weeks earlier.

The philosophy of the six-week Steven Blank workshop was set in stone. It was the only acceptable route to entrepreneurship and the seven workshop facilitators did not entertain rationalized deviations off the course. In broad strokes, it was a Customer Development methodology:

> "Over the course of six-weeks participants follows a detailed scientific approach that can be applied by start-ups and entrepreneurs to improve their product success by developing a better understanding of their consumers. Primary to the concept is a balanced relationship between developing a product and understanding the customer."

In practical terms this meant that our five team members would be responsible for going out and finding 100 potential future customers and conducting an interview with them. If these interviewees could not articulate explicitly in words the function and results they want from your potential products/services, then you have no evidence of there being a market for your potential products/services.

This proved exhaustingly frustrating. Executives are not inclined to admit to strangers that they were burned out, could not handle the stress of the job, or that they need training on being resilient. Likewise, Human Resource Directors of the major companies in the area were not inclined to admit to strangers high-turnover due to issues with wellness, or productivity problems due to excessive stress. But the workshop facilitators held firm: "We want to hear from your customers that they have value for the product/service."

Henry Ford had a good response for this type of one-track minded strategy: "If I was to ask customers [at the turn of the 20th century] what they wanted [for transportation] they would have said faster horses." Nonetheless the team completed 74 interviews with business leaders explaining they are "a little busy to talk about 'faster horses', or that "a better person to speak with about dealing with the aftermath of an employee suicide is his daughter".

Ultimately the solution for how to communicate with the workshop facilitators (and possibly funding agencies) came when we put this thesis' central premise on strategic decision-making under uncertainty to the test. At this time, there had been about six months of development on the model and some terminology was still a little vague. The four quadrants as presenting four strategy models as defined in Chapter 4 was however in place. Using terminology of the Customer Development workshop each of the four possible stances were defined as follow:

- **Medical Model (Q1):** There was 100% certainty there was a market for this strategic stance. We did not need to go out and ask people. The Executive Coach who was also a licensed Psychologist worked one-on-one with patients referred by medical professionals, insurance companies paid the bill, there was more demand for people to be seen one-on-one with her than she could handle. If worse came to worse this model could be followed, but only 20-25 people a week could be seen one-on-one by a single professional executive coach and licensed psychologist. The need was greater than that.

- **Corporate Model (Q2):** This strategic stance was proven to have traction when 200 community leaders a few weeks earlier showed up out of interest and 5 invested $15,000 into training their own staff to train and work with lower level staff members individually. The long-term concern with this model was that these leaders standing up for others tended to happen more in the 500+ employee companies. The concern was that the metro market would have exhausted its options to train trainers and the local franchise only network could collapse within three years of start-up.

- **Community Model (Q3):** This was another strategic stance that was semi-tested with the community event. Out of 300 persons in attendance about 25% continued to attend the free monthly workshops with additional depth and training because they had time, and issues were important enough to make attending valuable. In this model, larger cohorts of 50 can get the benefit of the training and support system, but the financing would most likely be completely dissociative from the end user if foundations, grants, non-profits and government recognized and funded this as a

public health initiative. This however did work so far. The bigger question yet was if this model could scale.

- **Continuing Education Online Model (Q4**): This strategic stance actually did not evolve organically. It was a process of banging our heads against the wall and asking: "How can this business concept scale? How can a network effect be used?" I worried that there was a lot of work with little return on investment if processes could not scale. It was at that point that the Executive Coach remembered that there was an asynchronous online course designed, built, and financed by the Internist/Author. Using that platform would not be a problem. He would probably want 50% of that income." And so, the option of getting Professional Development Credits for human services workers became an option that could scale.

Finally, the business plan was presented as having to choose between these four paths, and the pressure was elevated from doing only the Medical Model because that is the only route that would be approved by one of the "Godfathers of Silicon Valley's strategic stance philosophy" on how entrepreneurs should pick strategic stances.

The team won an award for most improved out of all the workshop participants, a good indicator that this thesis model helped them conceive of the validity of strategic stances beyond the values of this specific workshop. Yet all the prototyping was conceived and executed before the onset of the workshop. "Most improved" thus could only apply to communication of the idea. Interestingly the team did not decide which model to pursue after the workshop either. Instead they purposefully pursued the first three stances simultaneously over the next year.

In the last three snapshots, I will discuss what happened over the course of the next year to each strategic stance. Since there are actually four stances, assume that nothing changed on the Medical Model (Q1). With the solid and secure cash flow, it continued partially financing the development of product iterations that had potential to have a greater reach and scaling capacity. However, it has been operating at maximum capacity consistently for two years and counting.

9.6. Snapshot 6: The neighbourhood community workshops
Day 210

Due to the intense nature of the workshops on stress, resiliency and wellness (especially in times of adversity), it was never appropriate for me to walk into any of these workshops with my red research notebook. I did however see the meeting space donated to the non-profit to comfortably host up to 20 participants weekly on a Friday morning over the first summer. Contrary to the funding model conceived before were the Community Workshop would be funded by sponsorship from the third sector, participants started out funded themselves at $100 for a six-week program.

When the summer sessions neared its end on Day 210, the group had an earnest discussion about how these workshops can be rolled out on a broader base. Breast cancer discussion groups, kidney transplants, heart attack sufferers were just some of the medically diagnosed starting points that came up. What followed in the fall, was organic growth of the community workshops as the participants themselves became the advocates in the centres where they had power and influence. Churches, foundations, non-profits, even community action committees did facilitate growth but ultimately it ended up being through in-kind donations of space and equipment, lunches, as well as marketing. Consecutive workshops launched with never more than 30 participants at a time. Each time the participants funded their own participation.

The Executive Coach was careful to not reveal too much as confidentiality and ethics are very important tenants in her professional conduct, however it became apparent that the heart-to-heart private conversations that were happening behind the workshop doors had impact. I say that because I could see first-hand how success was breeding more success as the Executive Coach received invitations to be a special guest speaker at breast cancer survival groups, wellness luncheons. Facilitating these small interpersonal groups of people supporting each other also gave her practice for something big and unexpected that was about to happen...

Snapshot 7: Eulogy for a Dead Corporate Wellness Plan
Day 294

Shortly after the first summer when the success of the Community Workshop model started to take shape, there also arrived a big important day also arrived in the

corporate development model. The graduate volunteer who had been working at the bank had spent a lot of effort and social capital in securing a meeting with the bank's top leaders. After a few postponements, the big meeting finally arrived on Day 280.

The Executive Coach recalled the experience. Her energy was depleted after putting a lot of prep work into the presentation:

> "We could not believe what had happened. They turned us down. I could tell from the questions after the presentation. They didn't get it. And I could explain until I am blue in the face, they wouldn't get it. If anyone should have understood this, it should have been this bank... Maybe it's the new leadership. Something changed.'

The Corporate wellness stance had not been revisited since this experience. The Executive Coach also explained during her feedback review of this section that that she "embraced the organic growth of the models that were readier for further exploration due to limited time and resources."

Snapshot 8: The Global Wellness Network germinates
Day 240

The seedling for the final snapshot germinated on Day 240 in Vancouver, Canada at an Academy of Management conference. I had managed to convince the Executive Coach to join me at one of the biggest and most prestigious Management conference where I was presenting some of my work on the PhD tract. I had noticed that a whole special interest group had formed around the topic of Management Spirituality & Religion. My thinking was that the connection with other researchers outside the Medical field would diversify her dependency from the research hospital Internist so she could offer something he couldn't.

Success! She attended. But the success reached far beyond the strategy I envisioned. It provided a network of solutions to the reach and scaling objectives that we had not been able to solve sitting around a dining room 'boardroom table' with our laptops and Excel spreadsheets. It opened *the world*.

One of the sessions she attended was a session by Otto Scharmer. Coming back to the hotel that evening, she was energized to reveal over a healthy salad that she would not only buy his book but attend his free open online MOOC *class Transforming Business, Society and Self* from MIT. It was to start in a few weeks.

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Yet she went even further. She also hosted the live broadcast of the MOOC at city hall to draw in community engagement and wellness solutions to address needs specifically for the greater Metropolitan area. I joined them for the live broadcast projected on a big screen in the Mayor's conference room on the last day of the MOOC's live presentation. A handful of community leaders congregated. There was enough space at the table so nobody was relegated to the twenty overflow chairs.

During the final broadcast, she made an announcement to the community leaders. I knew about the announcement beforehand and was hoping (with her) that the leaders would have been able to see for themselves from the MIT video what had conspired during the past few weeks. But alas her video was not featured for 30,000 people who had been participation in the MOOC to see. She had to make the announcement to the people in the room herself.

A short 2-minute video showcased 24 friendly people from 17 countries and different time zones turning on their monitors and saying hi. They were mostly professionals, different ages, different career stages, but they all had something in common: they believed that there is value in creating a global hub for wellness.

The Executive Coach explained to the community leaders how the workshop of the community was now scaling up. With the help of a technology and location sponsorship of the local University, the local geographic area was to be the virtual harbour for people all over the world to tune in once a month to explore topics and resources on wellness. An online portal would be launched where people could share news and info. Where they can reach out and the light will always be on somewhere in the world if someone wants to talk (no matter the hour). It worked.

Exactly one year after the germination (Day 605) the Global Wellness Network sustained international interest from people from 17 countries. In her own geographic community, the Executive Coach also saw that her patients were increasing their reliance on peers who had experienced similar traumas like organ transplants, brain tumours, or heart attacks. They self-organized in break-out groups and talked about details. They then came back to the bigger group for the bigger picture philosophy. When I asked her if this is cannibalizing her licensed psychologist practice income

when the local people connected with the international people in peer support, she smiled proudly: "Yes, it's great. I am booked full [three months out]. This way I can help more people."

Today the online-offline structure of this networked collaboration project is not only an ethnographic case study in a dissertation, but it is also a handbook case study for management theorist Otto Scharmer's U-Theory. Two emails from a few days earlier described the impact that this initiative has had for them personally:

> [...] without a project like yours I was losing my energy to repeat the yearlong MIT course. You have re-sparked my interest if you think we can add to your efforts to take this next step. [He then proceeds to pitch an idea and commits his time and resources in developing it in conjunction with this Wellness Network].
>
> Retired Medical Doctor and Community Organizer in a Utah, US
> *Day 602*

> May I thank you for your initiative, may I thank you for your perfect online-workshops, may I thank you for your wisdom and all that you have given us in the last few months.
>
> Healthcare Provider from Austria
> *Day 602*

These types of heartfelt emails or dedications to contribute to progress for the cause with local resources and connections are also not uncommon.

THEORY EMERGENCE

CHAPTER 9

FINDINGS

9.1. Introduction

Over the course of three years, data was collected on five ethnographies. Vulnerable ethnographies on each of the five cases have been posted in in the preceding part in chapters 4 though 8.

1. Collaboration 1: MNC General Counsel on Complex Contracting
2. Collaboration 2: Elite Research University on Portfolio Diversification
3. Collaboration 3: Economic Development on multi-generational unemployment
4. Collaboration 4: Software Start-up on unskilled entrepreneurial launch
5. Collaboration 5: Healthcare on global Integrated support network

Chapter 9's findings will focus on three different types of themes that emerged out of the data on the five ethnographies: The themes will serve as a proxy for the myriad of themes that could potentially be analysed in the context of the model. In the context of the ethnographic narratives this chapter will specifically look at categorical data as distinct from relational, which is yet different from dynamic. The Strategic Decision-Making under Uncertainty model has capacity to absorb all three dimensions.

In the categorical 'theme A', chapter 9 will specifically analyse essentialist and absolute categories of communication mediums. These can be counted, separated and grouped in a distinct taxonomy. In the relative 'theme B' chapter 9 will specifically analyse relativist and relational categories of workshops with different strategic stances. Though the workshops can be counted and separated and grouped the quantities do not necessarily constitute meaningful context in itself. In order to be meaningful, the philosophy of the workshop needs to be mapped relative to the strategic stance of the strategic decision-makers (or in some instances the decision-making contributors to the workshop). And finally, in the dynamic dimension of 'theme C', chapter 9 will specifically analyse the trajectories with which the strategic stances transformed the central idea over time. These can only be meaningful once

they are categorized, but in relation to each other and tracked over a prolonged period of evolution.

9.2. Theme A: Modes - mapping categorical communication mediums

9.2.1. *Collaboration 1: General Counsel*

Dominant communication mediums used in Collaboration 1 in descending order or frequency were indicated by key decision-makers to rank: 1) 'hundreds of' emails, 2) one-on-one phone calls, 3) conference calls, 4) face-to-face meetings, and 5) some group meetings. This preference was partially a product of international geographic dispersion, partially the need to work asynchronously because of time differences, partially time pressures and partially the task type that required systematic and careful consideration of words on an evaluative basis.

It stands to reason that where groups were separated from each other by computer screens and interacting one-on-one with an intermediary in writing or over the telephone would lend itself increasingly to technically rational deliberations (+S, +C) relative to group gatherings and in-person workshops with a relatively higher focus on socio-political factors.

A strong example of a relatively more rational decision-making making model from Collaboration 1 involve Snapshots 4 and 5 where workshop participants submitted their responses to "Principles of a IT services" contract in writing. First the buyer side did it, and consecutively the supply-side had a chance to provide feedback. This method strongly resembles that of the Delphi method of collaborative decision-making designed by Rand Corporation to intentionally prevent group think.

- The Collaboration 1 (C1) dominant mode of communication via email isolated participants from each other and diminished socio-political factors impacting feedback when emails were further anonymized resulting in a dominant drive of coded: +S, +C

9.2.2. *Collaboration 2: Higher Education*

Similar to Collaboration 1, Collaboration 2's project development decision-making filtered through strong controls. Progress benefitted from situations where

expectations were clear with a set structure. Collaborations used a myriad of ways to intentionally or inavertedly make participants conform to set norms. For example, both the Canary Wharf Headquarters (Collaboration 1, Snapshot 2) and University Administrative Headquarters (Collaboration 2, Snapshot 1, 2) had multi-story architecture combined with explicit security check-in instructions creating a barrier between insiders and outsiders and possibly give insiders a psychological advantage in negotiations. A similar barrier was also evident but downplayed in the Social Scientist's Academic Headquarters (Collaboration 3, Snapshot 1).

Comparatively, Collaboration 2 however made progress on a consensus based development of the idea when the communication was in-person as opposed to via email or audio conversations. Though a fair number of emails were exchanged in Collaboration 2 (and 3) they less often signify pivotal moments. One major exception was Collaboration 2's press release announcement. But other than that example, the emails were used more commonly to set up meetings or forward consensus documents as a formality.

- The Collaboration 2 (C2) dominant mode of communication via big group gatherings with a clear structured agenda and an outside informant informing the group on information increased socio-political factors and expectations in a controlled manner resulting in a dominant drive of coded: +R, +C

9.2.3. *Collaboration 3: Economic Development*

Similar to Collaboration 2, the dominant communication mediums of Collaboration 3 benefitted from situations where collaboration met in-person or at the very least was able to be responsive to emotions or changes in expected dispositions. Formality made the responsiveness of the Collaboration 3 decision-making models different from the behavioural decision-making models. Whereas the Collaboration 2 group meetings were formal and structured to educate a cross-section of different departments on the value system that would be important for the project's development, the Collaboration 3 decision-making leaned towards smaller, less-formal and less-structured meetings. As a consequence, these improvisational meetings also ran much longer, and had more personalized humour and customized messages.

The execution also looked different in the dominant communication mode of Collaboration 1 email messages. Collaboration 2 and 3 preferred to send emails out to groups as opposed to one-on-one. Content in the Collaboration 2 & 3 email style was also shorter with less detail. However, features that distinguish Collaboration 2 emails from Collaboration 3 were that Collaboration 2 emails were more formal and focus on setting an agenda the emails while Collaboration 3 emails opted to give enticing clues as to "some exciting development" rather than informing on the forthcoming news.

- The Collaboration 3 (C3) dominant mode of communication via small group gatherings with an unstructured and informal agenda maintained a socio-political overtone but decreased control and opened the possibility for new and different input resulting in a dominant drive of coded: +R, +D (relative to C2)

9.2.4. Collaboration 4: Software Start-up

Relative to the preceding collaborations, Collaboration 4 quite possibly relied the least on email and communication technology. This is counter intuitive for a software company, and also considering the geographic spread of the projects over England and Wales. The emails that did exist most strongly resemble those of Collaboration 3 with brevity and simple objectives of setting up face-to-face meetings and projects.

It also turns out that the agendas of the meetings were very unclear when I would inquire about them. A lot of consideration was put forth on having a gentle touch as to not appear too forceful and demanding. Also, worth noting is how the ambiguity and openness to hear what the other party had to say in face-to-face interactions resulted in unexpected projects being picked up over time (See all snapshots of C4 bar Snapshot 2).

Again, similarly to Collaboration 3, (and possibly reminiscent of Collaboration 1) the group size was small for the most part. One-on-one or two-on-one was more common that a small gathering. However, very differently from Collaboration 1, these very small gatherings were highly informal as opposed to the formality in Collaboration 1 interaction was conducted.

- The Collaboration 4 (C4) dominant mode of communication via informal face-to-face, unstructured and small relatively decreased socio-political dynamics and increased surprises resulting in a dominant drive of coded: +R, +D

9.2.5. *Collaboration 5: Healthcare*

Relative to Collaboration 1 and 4, Collaboration 5's patterns of seeking out a critical mass of participants to be present at key development moments resembled that of Collaboration 2 and 3. However, unlike Collaboration 2 and 3 where it may have been a higher level of impression management when the decision is being made collaboratively, Collaboration 5 was possibly a more open example of that actually being the case specifically because participants are empowered and not just asked about verbally sharing input.

Similar to the dominant communication mediums of Collaboration 1, Collaboration 5 included situations where geographically dispersed groups were separated from each other by computer screens. However, what made a significant difference was Collaboration 1 could only scale linearly whereas Collaboration 5 had the potential of scaling exponentially. At this early stage, it cannot be confirmed to be the case, but it has capacity. Also, the anonymity is not the dividing factor as Collaboration 5 does have capacity to accommodate that.

The key differentiating factor thus being that participants were empowered to also support each other in a network effect without the central strategic decision-maker running interference. The geographic distribution of the members was thus not a limiting factor due to the use of an open technology platform empowering was problem-solving and innovation at various levels. Collaboration 5's online private Facebook community page where participants with similar background from around the world can connect one-on-one at any time of the day or night, as well as the monthly Zoom workshops with self-selecting breakout groups. This is similar to the premise that has turned over 23 software companies into companies valued at $1B companies in less than 10 years – a feat almost impossible before the dawn of the digital revolution.

- The Collaboration 5's (C5) dominant mode of communication is via informal networked technology. It is informal in that peer-to-peer initiative is encouraged, and it is structured in that platforms are available to be accessed without permission and used as seen fit once the rules of the game are established. The openness to surprises thus results in a dominant drive of coded: +S, +D

9.5.6. Summary

Whether the communication medium augmented the strategic stance or the strategic stance augmented the dominant choice in communication medium is outside the purview of this thesis. However, what communication mediums align with different drives when confronted with taking strategic stances under uncertainty does fit the scope. The summary is depicted in Figure 9.1.
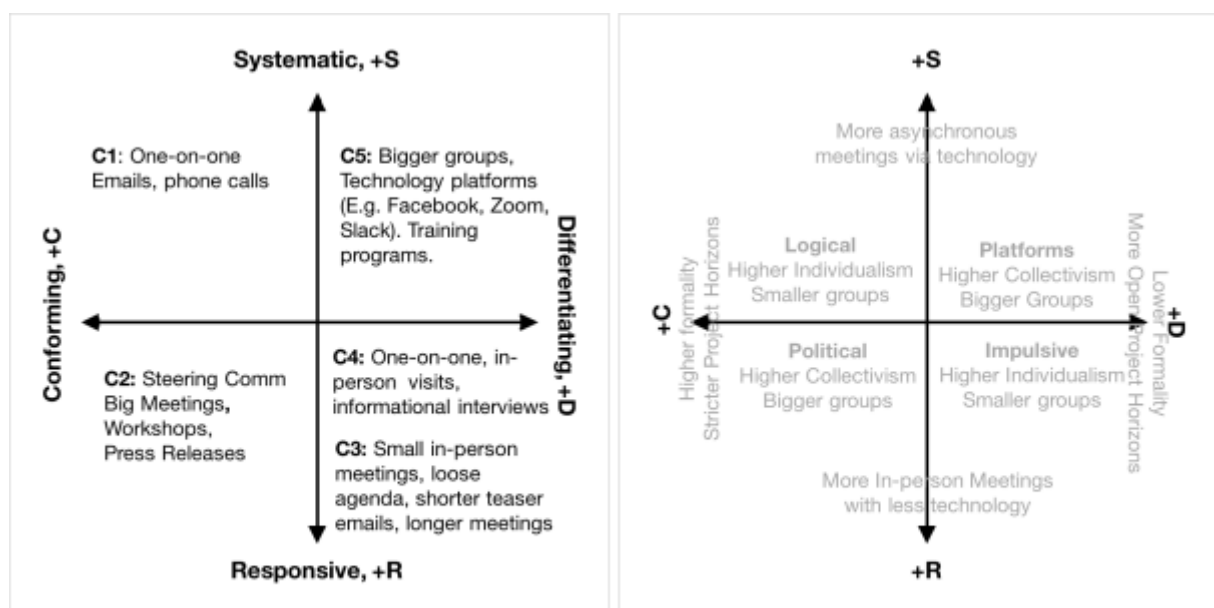
Figure 9.1. – Dominant Communication Medium (A) examples and (B) abstract
(presented along dimensions that would later also become the prototype of M³)

Contrary to expectations geographic dispersion and comfort with technology could not account for all decisions as a practical point of view. Most notably inconvenient and costly face-to-face meetings were prioritized over convenient and cheap AV mediums like Skype in Collaboration 3 with a strong responsive drive. And geographically concentrated participants still opted for the use of technology to increase strong systematic drives in communication.

9.3. Theme B: Models - mapping relative workshops

9.3.1. Collaboration 1: General Counsel

Again, Collaboration 1 mapped a purist picture of rational decision-making (+S) using a variation of the Rand Corporation's Delphi method workshop. Specifically designed to combat group think, the communication pattern isolates and controls (+C) the information participants receive about each other's thoughts on the matter and only shares patterns of feedback in a systematic way after it has been processed and anonymized to limit political contamination. (Source)

Conception

The workshop was initially conceived to be a duplication of an in-person workshop on the same topic hosted a year earlier by Microsoft and the University of Chicago but by taking "the personalities" out of the workshop it increased in rationality relative to past iterations of the same workshop (+S, +C).

Outcome

Reviewing the workshop outcome on a rubric of affect and reengagement this workshop did result in frustration for the intermediary, but the outcome was strong enough to replicate the same workshop with a similar group and target contracting in a different industry (+S, +C).

- C1: Workshop 1 strategic stance is coded: +S, +C
- C1: Workshop 1 strategic stance outcome is also coded: +S, +C
- C1: Workshop 1 outcome as a success with next project launched traction: $x \geq 1$

9.3.2. Collaboration 2: Higher Education

Collaboration 2, relative to Collaboration 1, relied more heavily on managing the hierarchy and politics (+R, +C) to develop and likewise also opted for a workshop that also channels affective disposition and engaging narrative in a workshop called Customer Journey Mapping. During this workshop stakeholders engaging with a facilitator in the development of tangible deliverables like videos, blogs, photographs and charts what the future can and should look like to create a curated view for top tier strategic decision makers of the barriers faced by stakeholders (+R, +C). (Source)

Conception

The use of this specific workshop was initially conceived at another workshop for which the university received grant funding. The Journey Mapping Workshop if done in the perimeters of a timeline and using a local facilitator could also be grant funded (free). Decision to select Journey Mapping over other alternatives seemed to be based on past positive exposures to the Workshop and availability of resources (+R, +C).

Outcome

Reviewing the workshop outcome on a rubric of affect and reengagement this workshop did result in frustration for the participants. When asked to identify the "low hanging fruit" barriers and their solutions two independently facilitated groups of participants both listed the same four item set of long-term systematic barriers that need to be addressed (+S, +D). This systematic and divergent outcome was also consistent with the self-described qualities in the first mover problem solvers who had been hand selected to attend the workshop on account of their quality innovation in their respective areas of expertise.

- C2: Workshop 2 strategic stance is coded: +R, +C
- C2: Workshop 2 strategic stance outcome is coded opposite: +S, +D
- C2: Workshop 2 outcome does not have enough data to suggest it was a success: $x < 1$

9.3.3. Collaboration 3: Economic Development

Collaboration 3, relative to Collaboration 2 started out relying less on internal hierarchy, but turned its attention outside the organization for connections and resources to develop the idea (+R, +D). The workshop method of Design Thinking is specifically different from preceding workshop methodologies because it encourages divergent thinking to iterate many solutions (+D) which offers different, unique or variant ideas adherent to one theme while convergent thinking (+C) is used at a later stage in the process to narrow options down to the best or "correct" solution to the given problem. (Source)

Conception

Using a Design Thinking workshop facilitation to solve an economic development problem was in fact the constant component of the idea which never changed over the

course of four years. The emergence and framing of the specific economic development problem did change throughout the project as the stakeholders and resource access changed.

Outcome

Reviewing the workshop outcome on a rubric of affect and reengagement, this workshop did result in frustration for the majority of participants. When asked to identify the type of solution that they would like to work on during the two-day workshop, the majority of participants chose an option that was not aligned with design thinking's strategic stance (+R, +D) but opted instead for working on a revolutionary system overhaul (+S, +D). The second biggest cohort did not adapt to the design thinking principles either and opted to conform and develop an idea that was planted before the workshop started by a leader (+R, +C). A small fraction of the participants did immerse into the design philosophy and expressed a very positive experience (+R, +D).

- C3: Workshop 3 strategic stance is coded: +R, +D
- C3: Workshop 3 strategic stance outcome can be grouped in three distinct strategic stances
    - Group 1 & 2 is coded adjacently: +S, +D
    - Group 3 & 4 is coded adjacently: +R, +C
    - Group 5 is coded the exact same: +R, +D
- C3: Workshop 3 outcome has enough data to suggest it was a mixed bag on success:
    - Group 1 & 2 does not have enough data to suggest it was a success: $x < 1$
    - Group 3 & 4 have enough data to suggest a <u>60-day traction</u> with leadership also adapting to a +R, +C stance: $x > 0$
    - Group 5 have enough data to suggest a positive <u>few day traction</u> with leadership not adapting to a +R, +D stance: $x > 0$

9.3.4. Collaboration 4: Software Start-up

Collaboration 4's workshop's strategic stance most closely resembles that of Collaboration 1. The Entrepreneurship training and competition projected a detached rationality and demand for conforming to a predetermined set rubric that constitutes

excellence in entrepreneurship culminating in a competition with financial rewards (+S, +C).

Conception

Using the Entrepreneurship training and competition was a peripheral incidental to get access to unrelated resource and it was apparent from the start that the strategic stances were not aligned. Launching new expertise in three different domains (none of which included the objectives of the expertise building objectives workshop) resulted in diametrically opposing strategic stances with the workshop's (+S, +C) on the one hand and the strategic decision-makers' (+R, +D) on the other.

Outcome

The access to the resources were highly effective due to joining the workshop. However, these resources dried up at the end of the workshop experience. Outcome in terms of the affect and engagement of participants towards the workshop itself cannot be classified as a success at this time.

- C4: Workshop 4 strategic stance is coded: +S, +C
- C4: Workshop 4 strategic stance outcome is also coded: +R, +D
- C4: Workshop 4 outcome as a success cannot be confirmed: $x < 1$

9.3.5. *Collaboration 5: Healthcare*

Collaboration 5 was the exceptional case study in that it engaged in two different idea development workshops (in addition to the myriad of different continuing education trainings) and each of the idea development workshops had a different strategic stance, which had different types of pulls on the central idea.

Workshop 5.1 toward the onset of the idea development was Steve Blank's Customer Development methodology administered by an US university affiliated entrepreneurial centre. The workshop focused on rational validated learning from that which the customer can verbalize to a stranger and using hypothesis testing. Workshop 5.2 was Otto Scharmer's U-theory via a MOOC. U-theory focuses on the analysis of principles, practices, and processes that differentiate among four types of emergence and anti-emergence: the four types differ in terms of their source (or their structure of attention) with respect to where their activity is enacted or performed from (Source).

Conception

The Customer Development workshop (W5.1) engagement materialized with the perception that 'a' professional workshop through the local university would help develop the concept with structure and direction. Little to no consideration was put forth on whether the workshop's strategic stance was in alignment with the leadership collective's. The team visited explicitly with the facilitators of the workshop beforehand to gain more information but it was logistics rather than to understand philosophical stances that were in the spotlight. The workshop did cost the Collaboration money.

With the U-Theory workshop (W5.2) engagement materialized on account of one of many continuing education initiatives. In this instance, it was attending a research presentation in-person at an international conference where Otto Scharmer shared details about his upcoming MOOC on U-Theory. There was no financial barrier to engaging in the MOOC.

Outcome

The Customer Development workshop (W5.1) frustrated the decision-makers using it to develop the idea. Following the model, the data suggested that a medical model should be adhered to. That was the only model where the rationalized detached doctors and insurance companies could articulate the need and value for the company. There were however two problems with this: (i) the medical model did not scale or offer an increase in reach, and (ii) especially in the corporate model that was being tested it was apparent that leadership is not likely to articulate stress and burnout concerns (of self or workforce) to a stranger with a notebook (+R, +C). The Customer Development workshop model offered no solution to either these limitations. The next workshop however did. The U-Theory Workshop offered an idea development and prototyping resource that did allow for the idea to develop and gain global traction.

- C5: Workshop 5.1 strategic stance is coded: +S, +C
- C5: Workshop 5.1 strategic stance outcome is coded adjacent: +S, +D

- C5: Workshop 5.1 outcome does not have enough data to suggest it was a success: $x < 1$

- C5: Workshop 5.2 strategic stance is coded: +S, +D
- C5: Workshop 5.2 strategic stance outcome is coded the same: +S, +D
- C5: Workshop 5.2 outcome does have enough data to suggest a positive <u>1 year of traction</u> with leadership adapting to a +S, +D stance: $x > 0$

9.4.6. Summary

With mixed results, workshops were hosted or selected based on what was available at the time or in alignment with past exposure. Little to no discussion occurred in front of the field worker to align strategic stances of the collectives at top level decision-makers, intermediate level decision-makers, and workshop participants and the respective strategic stance of the workshop. A graphic summary is presented in Figure 9.2.
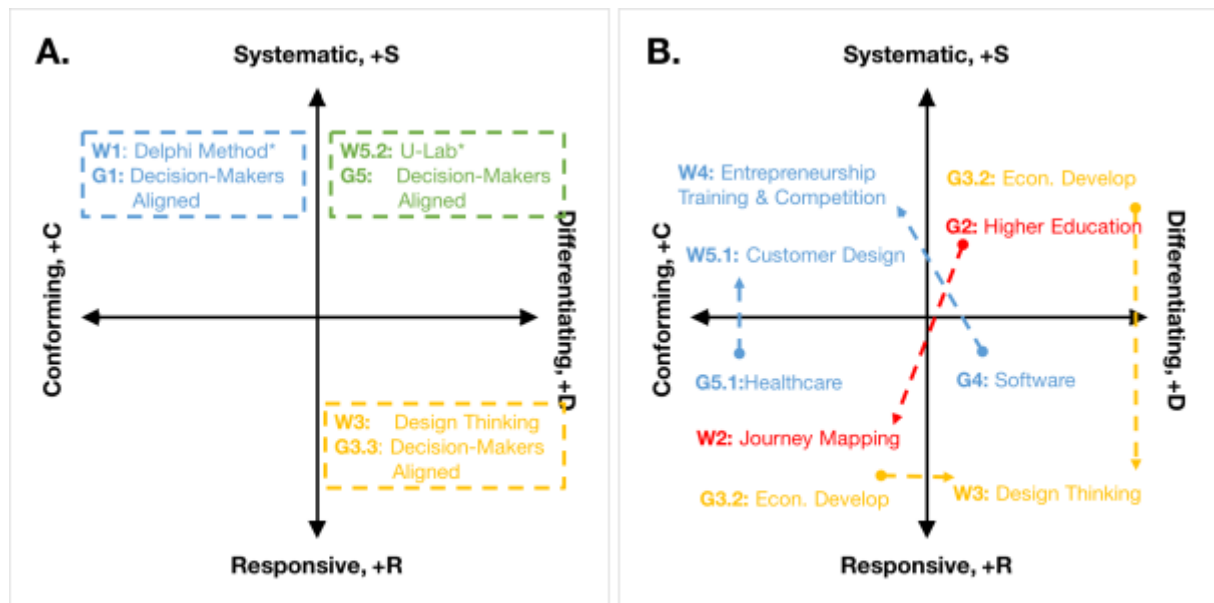
Figure 9.2. – Workshops with higher buy-in (A) vs. Workshops with higher frustration (B)
(presented along dimensions that would later also evolve into the prototype of M³)

Outcomes with little to no frustration were observed when the strategic stances aligned. This was the case in Collaborations 1 (Law), 5 (Workshop 2 with Healthcare) and partially also Collaboration 3 (Economic Development with Group 3). Measurable task outcomes on these aligned strategic stances also resulted more consistently in the workshop informing a next iteration that gets implemented or

developed further. In Collaborations 2 (Higher Education), 3 (Economic Development) and 4 (Software) frustration and friction was more evident when the strategic stances did not align. Measurable task outcomes on these non-aligned strategic stances also resulted in higher level decision-makers not necessarily being prepared to commit to the workshop and outcome.

It can thus be extrapolated that if strategic decision-makers (and workshop) participants' strategic stances align the outcome of the workshop has a greater chance of having a meaningful impact on the idea development further into the future. For maximizing impact workshops and workshop participants should thus not be selected on the basis of convenience but alignment of philosophical strategic stances.

9.4. Theme C: Momentum – dynamic trajectory of strategies over time

9.4.1. Collaboration 1: Contract Lawyers

One of the clearest and most consistent examples of collaboration's transformation over time based on a single strategic stance drive had been that of the Corporate Lawyers in Chapter 4's Collaboration 1 as summarized in Table 9.1.

Collaboration 1: Blue Chip Corporate Counsel				
Shot	Name	Day	Change	Code
0	Exposition	1		
1	Power Voices on and off the conference call	10	Use the Microsoft blueprint	(+S, +C)
2	The 'How do you eat an elephant?' Debate	20	Stay on incrementalism	(+S, +C)
3	The Compartmentalizing Email	46	Move to aggr. timeline & partnership level	(+S, +C)
4	The "Buyer-side" Principles documented	195	Move to online workshop	(+S, +C)
5	The Launch of "Supplier-side" Principles	217	Move to 1-on-1 supply-side	(+S, +C)
6	Opening the Telecommunications Line	250	Move to add telecom sector	(+S, +C)
7	Coffee with the President	255	Move to add energy sector	(+S, +C)
8	Orange Juice with the Board Director	256	Top Strategists are different?	(+R, +D) & (+S, +D)

* Line represent chronology on the emergence of the fundamentals of the M³ theory relative to empirical data collected.

Table 9.1. – Collaboration 1's dynamic trajectories of strategy over time

Collaboration 1 repeatedly demonstrates a process of following the same pattern of

taking an existing idea and improving on that by increasing localized control (+C) and systematically making incremental changes (+S). This is especially evident in Snapshot 1 as the existing blueprint of a tried and true workshop is used as the baseline. We see evidence of this again about a year later in Snapshots 7 and 8 as new industry sectors are added on the exact same framework.

In terms of changing from an 'in-person workshop' to an 'asynchronous online workshop' explained in Snapshot 4 we also see fertile grounds for systematisms (+S) increasing as participants are more isolated and individualistic online, over an socially normative scenario of collaborating in a round table setup where responsiveness (+R) to each other and striking the right kind of social awareness balance may soften the rationality of results. The same dampening of bounded rationality (+R, +C) applies to separating the Buyer and Seller side and blinding participants to affective factors in Snapshot 5.

Finally, the process of setting clear and explicit quantifiable timelines and partnership level goals is another example of a controlled rational stance for moving strategic objectives forward (+S, +C). All of this is also consistent with the corporate law industry's general tendency to train professionals in a (+S, +C) line of reasoning as was discussed in the industry baseline.

With the specific framing and selection of snapshots the dynamic trajectory thus resembles:
- C1 dominant strategic stance is thus coded: +S, +C.
- C1 snapshots captures the movement of an idea progressing along a single strategic stance, however top decision-makers reveal to be naturally predisposed to high level +R, +D and +S, +D strategists

9.4.2. Collaboration 2: Higher Education

Comparatively less clear than Collaboration 1's consistent (+S, +C) drive would be Collaboration 2's strategic stance changes over time. Like in Collaboration 1 the opposing drives are present, but in Collaboration 2 there is stronger elements of a duel between participating stakeholders who may not whole heartedly be conforming and responsive, but are politically aware of the system within which to operate. As

discussed in Chapter 5, the Higher Education in Collaboration 2's snapshots and their respective codes are summarized in Table 9.2.

Snap	Name	Day	Change	Code
	Collaboration 2: Higher Education			
0	Exposition	1		
1	Boardroom table with Faculty Heads	16	Stay the course	-
2	The Press Release Surprise	35	Change to MOOC Partnership	(+R, +D)
3	Keeping up with the Joneses meeting	135	Change alternative Edu on Homepage	(+R, +D)
4	The 'Low Hanging Fruit" meeting	212	Change to small short-term controlled	(+R, +C)
5	The Final Blackburn Off-Site Meeting	257	Change to Journey mapping workshop	(+R, +C)
6	The Journey Mapping Workshop	331	Change to longer-term, system changes	(+S, +D)
7	The Final Steering Committee Meeting	376	No change in the large group	(+R, +C)
8	The greenlit MBA Program Developments	630	Change to independent project pulled back in	(+R, +C)

* Line represent chronology on the emergence of the fundamentals of the M³ theory relative to empirical data collected.

Table 9.2. – Collaboration 2's dynamic trajectories of strategy over time

In Collaboration 2 we also see a clearer institutional hierarchy (+R, +C) in play even when a significant amount of the collaboration is inter-organizational. The top layer of the organization where the true strategic decision-makers do not appear often at the dozens of meetings (+S, +C) over the course of idea development, but a lot of energy is exerted into guessing what higher layer decision-makers would consider acceptable ideas and evolutions on the ideas as opposed to what may be 'a truth' for the intermediary strategic maker.

The intermediary strategic decision-makers' meetings are also structured in a way that is large enough to be inclusive of diverse stakeholders and structured enough to ensure that educational conforming standards gets communicated and absorbed as opposed to leaving it wide open for differentiating ideas to be introduced (+R, +C) (See Snapshot 3). Intermediary decision-makers in the leadership team also "hate to say this, but [I] think we need to go for the low hanging fruit" (See Snapshot 4) which does not cost major system overhaul kind of financial and socio-political investment (+R, +C). And when collaborating with outside organizations the same strategic socio-political firewall is evident whether it be for doing workshops or partnering with entities where the relationship is already proven and well developed (See

Snapshot 2, 5, 6, 7). Also in the selection of the workshop type "journey mapping," the code is a strong (+R, +C) as the process' deliverables are designed to communicate abstract affective constructs in a tangible way.

The interesting mismatch with this predominantly socio-political (+R, +C) stance is when looking at the historic track record of successes of the intermediary leaders (as discussed in Snapshot 5) as well as alpha movers that attended the workshop (as discussed in Snapshot 6). These groups could possibly be inhibited by politics as all exhibit strong evidence of rational and differentiator qualities (+S, +D) in the pioneering successes in their track record suggesting that the culture observed in the snapshots (and beyond) is not the true organizational culture but a special sub group strategically muffling themselves to increase the chances of innovation long-term.

All of this is also consistent with the higher education industry's general tendency to reward professionals based on a (+R, +C) line of reasoning as University rankings, membership with elite distinction groups and academic citation in peer reviewed journals define strategic stances to increase hierarchical climb.

With the specific framing and selection of snapshots, the dynamic trajectory thus resembles:

- C2 dominant strategic stance are thus coded: +R, +C.
- C2 snapshots captures the movement of an idea progressing along multiple strategic stances captured. Most of the idea drivers/developers have provided evidence of being +S, +D, strategists, but their perception of the executive powerbrokers are that they are predisposed to +S, +C strategists, however on account of the organization's size and focus on prestige, strategist are operating predominantly as +R, +C strategists.

9.4.3. *Collaboration 3: Economic Development*
Comparatively to Collaboration 1 and 2, Collaboration 3 and 4 are even less clear depictions of the Responsive and Differentiating (+R, +D) Drive. Each of these latter case studies have their own respective twists on the concept of exploring new and different ways to look at solving a problem.

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As was discussed in Chapter 6, Collaboration 3 with the Economic Development objective is designed around the premise that developing a strategic stance through a design thinking workshop has the capacity to solve problems in a way that let stakeholders identify what do they have control over and take actions in response to collaborating in a new way of framing the problem (+R, +D). With the workshop and it's fifty-five attendees as the central focal point this thesis observed an unexpected three-way splintering on the premise of design thinking. (See summary table 10.3).

The majority of workshop attendees did not conform to the workshop's philosophy and tackled problem-solving discussions in a way that is more rational (+S) as opposed to responsive (+R). The remaining two groups all were both responsive. However, here too there was a splinting between Group 2's conforming and anchoring to a workshop premise that was pitched to them before the workshop (+R, +C), and Group 3 who opened themselves to ideas and possibilities and allowed the experience and participants of the workshop to influence their ideas in real time (+R, +D).

Collaboration 3: Economic Development Idea				
Snap	Name	Day	Change	Code
0	Exposition	1		
1	Getting into a Locked Room	464	Change of including [2] leaders define interests	(+R, +D)
2	Impromptu academics conferencing	703	Change of including [2] more leaders define interests	(+R, +C)
3	The risk and the cafeteria plan	723	Change of including [2] more leaders define interests	(+R, +D)
4	The 'White Knight' Two-day Workshop	736 & 737	Change of including [47] more individuals' interest	(+R, +D)
5	The Design Factory	738	Change of narrowing idea	(+R, +C)
6	Meeting with the Guru	743	Change in techniques for getting heavy hitters	(+R, +C)
7	Room with the coffee machine	828	Change in content focus	(+R, +C)
8	The Social Enterprise Designation	1506	Change in Leadership	(+R, +C)

* Line represent chronology on the emergence of the fundamentals of the M³ theory relative to empirical data collected.

Table 9.3. – Collaboration 3's dynamic trajectories of strategy over time

Finally, in Snapshot 6 and 7 we see the collective leadership group after the workshop conform to the socio-political principles of the most dominant leaders in the room and thus ending up with a (+R, +C) stance. As was evident when he left the table to join another university, the project also died. Collaboration 3 was thus rationally

designed to be a responsive and differentiating strategic approach (+R, +D), but behaviourally exhibited strongest focus on socio-political strategic stances. (+R, +C).

With the specific framing and selection of snapshots the dynamic trajectory thus resembles:

- C3 dominant strategic stance are thus coded: +R, +C.
- C3 snapshots captures the movement of an idea progressing along in a tug of war between two adjacent strategic stances of striving to be +R, +D, but repeatedly defaulting onto +R, +C

9.4.4. Collaboration 4: Software Start-up

Collaboration 4's software start-up suffers from a similar fate of being forced by necessity to launch from a responsive and differentiating stance (+R, +D) because strategic decision-makers had no contacts or expertise in the areas of computer programming, videography and professionally designed health and safety plans yet excellence in each area was prioritized as paramount. As was discussed in Chapter 7, Collaboration 4 was bound out of necessity to use responsive and differentiating strategic stances as a starting point. However, as summarizes in Table 9.4 that is not where the strategic stance stopped.

Collaboration 4: Software Start-up Idea				
Snap	Name	Day	Change	Code
0	Exposition	1		
1	Winning a Two-in-One Prize	83	Changed the resource pool	(+R, +D)
2	Guitar with a Broken Bridge	153	Changed to development self-reliance	(+R, +D)
3	Finding a New Port of Entry	337	Changed target Uni persuit focus	(+R, +D)
4	Drinking from the Fire Department watering hose	184	Changed target sector pursuit focus	(+R, +D)
5	Biggest hospital in Europe lifts the fire curtain	276	Changed target industry pursuit focus	(+R, +D)
6	World Fire College needs emergency videographer	418	Changed target resource pursuit focus	(+R, +D)
7	The Founding of a new media company	549	Changed target customers focus	(+R, +D)
8	The Overheated Computer	805	Changed target function pursuit focus	(+S, +C)

* Line represent chronology on the emergence of the fundamentals of the M³ theory relative to empirical data collected.

Table 9.4. – Collaboration 4's dynamic trajectories of strategy over time

Though the successes with leveraging relationships with the University in the North lead onto attempts to copy that same pattern with a University in the South (+S, +C), a whole independent stream of relationships needed to be fired up from nothing (this was not the case with Collaboration 1 when the same chain of buyers was approached to participate again in another industry in which they all purchase services. (Same people. Different services – IT then Telecom, then Energy.) Also, as the incremental value added over time diminished as a new partner's resources of access to footage and training materials diminished over time, so too did the interest in sustaining the relationship. Once control was established (+C) a new stream of resources was pursued anew. (+R, +D).

As the listed code of (+R, +D) does not even appear in the summary table we stumble into another interesting finding: when more than one strategic stance is deployed over the journey of a snapshot, it travels along a path of development. In the specific case of the Software start-up the pattern is repeated over and over in each snapshot. The responsive and differentiating (+R, +D) becomes a responsive and conforming strategic stance (+R, +C) once it enters into a negotiation phase and each party in the inter-organizational negotiation attempts to extract as much value out of the relationship as possible. Once control of the valuable resource is secured the interest in systematically improving that which is of value to the other party (e.g. free videos for the University's use) ceases if the relationship is not negotiated to a next level of commitment, investment and return on investment. Therefore, the relationships of services provided below market value stop once the quality is to a level that showcases a diverse portfolio of work (+C).

With the specific framing and selection of snapshots the dynamic trajectory thus resembles:
- C4 dominant strategic stance are thus coded: +R, +D → +C
- C4 snapshots captures the repeated movement of an idea progressing from a point of emergence to a control seeking function and then stopping to start a new journey anew

9.4.5. *Collaboration 5: Healthcare*

Finally, Collaboration 5 presents the best depiction of creating a Systematic and Differentiating stance (+S, +D) with the risk of cannibalizing its own preceding evolutions but looks towards the longer-term implication of immortality and being a next evolution platform of being regenerative. In Chapter 8 the Healthcare collaboration clearly and purposefully worked on developing models stimulated by each of the four drives (and quadrants) as presented in the summary Table 10.5.

Collaboration 5: Healthcare Idea				
Snap	Name	Day	Change	Code
0	Exposition	1		
1	The Aneurism	-699	Need to focus on the whole person	(+S, +D)
2	The First $20,000 raised	-28	Change Ideas on where the money may be	(+R, +D)
3	The $10 million chandelier	7	Changed the relationship to a legal one'	(+R, +C)
4	The media darling	47	Changed perception of partner's reputation	(+R, +C)
5	"Building Faster Horses" Workshop	73	Changed perception to a 360 view	(+S, +R, +C, +D)
6	The Neighbourhood Community workshops	210	Developed responsive and adaptive skills	(+R, +D)
7	Eulogy for a Dead Corporate Wellness Plan	294	Changed perception of Corporate Model	(+R, +C)
8	The Global Wellness Network germinates	240	Developed systematic and adaptive skills	(+S, +D)

* Line represent chronology on the emergence of the fundamentals of the M^3 theory relative to empirical data collected.

Table 9.5. – Collaboration 5's dynamic trajectories of strategy over time

With Collaboration 5 we also start to see the implications of intentionally developing each of the four drives as opposed to focusing on a more simplistic monoculture.

The first instance this become apparent was in Workshop 1. Instead of simply conforming to the workshop culture of Consumer informed product development (+S, +C), but building onto it, and also building the other drives out alongside accomplished two things: (i) it allowed workshop facilitators to observe different strategic stances alongside each other and not assume that the one they were advocating is superior in all situations, and (ii) it made the leadership collective aware of a hidden fourth model that should theoretically be capable of scaling. Granted the team stopped searching or exploring what that truly could be after finding an online model that the Director of Immunology had already started to develop, but staying open to yet more options from other experts (including

Workshop 2) ultimately did reveal yet another model in the same camp with more long-term traction.

With the specific framing and selection of snapshots the dynamic trajectory thus resembles:

- C5 dominant strategic stance are thus coded: +S, +D.
- C5 snapshots captures the movement of an idea very intentionally exploring models in every strategic stance iteration in search of the development of the best option

9.5. Conclusion

Chapter 9's findings confirm the presence of strategic decision-making under uncertainty stances that invites higher levels of ambiguity and thrives under uncertainty. Also, important in the context of social realism, it confirms the model's* capacity to absorb categorical, relational and dynamic data.

From the five collaboration case studies included in this study examples of enough data could be harvested on examples of a) communication mediums, b) workshops and c) different dynamic trajectories across the four quadrants of strategic decision-making quadrants.

In Chapter 10 the three themes' implications on idea development will be discussed in the context of the strategic stance drives as well as the corresponding decision-making under uncertainty quadrant.

CHAPTER 10

DISCUSSION

10.1. Introduction

As we established in first part with the theoretical foundation for classic rational decision-making models (Theme 1) and behavioural decision-making models (Theme 2) are well established areas of literature. This specific thesis aims to develop the more uncertain components of these respective theories as applied to the intentional selection of strategic stances amongst higher levels of uncertainty. In the model* these higher level of uncertainty 'behavioural-type' decisions will be referred to as Improvisational (Theme 3) and higher level of uncertainty 'rational-type' decisions will be referred to as Consilience (Theme 4)

In the process of understanding the complexities of decision-making under uncertainty using a social realism lens, Chapter 9's findings showcased the emergence of patterns that overlap enough to be able to draw inferences. By specifically focusing on the Theme A's patterns of categorical data, Theme B's relational comparatives between the workshops, and Theme C's dynamic trajectories of strategic stances over time, some implications of the drives can be explored.

Essentially Chapter 10 discussion will focus on the implications that this has on tangible aspects like selecting communication mediums, workshops and longer term idea development based on the results observed in this study, but the three detailed themes are also surrogates for the broader context of categorical, relational and dynamic strategy stances in development and evolution within the social sciences context. The implications of this will be fully explored in Chapter 12 when we focus on application of theory building as well as practical idea building using one hundred of the most seminal management theories of the past one hundred years.

10.2. *Theme One: Classic Rational Decision-Making model (+S, +C)*

As expected evidence of classic decision making models which are systematic and conforming strategies was consistently observed. It was especially evident in Collaboration 1 with lawyers collaborating amongst each other in mediums and formats comfortable to their everyday working conditions.

Because the concept of classic rational decision-making is so well entrenched in literature this thesis will not claim to be making any surprising new revelations about the classic decision-making models. What is however important is that on a continuum it stands to be reasoned that there would be different types of rationality and different types of control. This thesis henceforth is looking for the other types of decision-making models in relation to a baseline or anchor. In this thesis Collaboration 1 provides a strong anchor from which to compare other collaborations that may exhibit strategic stances with different points of view on systematisms and conforming philosophies.

10.2.1. Theme A: Modes - mapping categorical communication mediums

Collaboration 1 was almost purist in its application of rational decision-making communication mediums. By selecting to rely heavily on one-on-one emails, by removing non-verbal body language, intonation and tone of voice, office design, attire, appearance that constitutes a sizable percentage of what constitutes bounded rationality, participants are forced to focus very narrowly on content of what is written in contracts. Add to that the anonymizing scrub of the data and the end result is hyper content focused collaboration process.

Though Collaboration 1 strategic decision-makers opted for this route as a necessity in saving time and money, as well as bringing geographically dispersed parties together, it also stands to reason that affect, politics and differentiation contaminating the end result diminished. However, just because it saves time and money for one strategic decision-making team does not mean it would have similar results for another team where affect, responsiveness, politics and differentiating are indeed important components.

In revisiting summary figure 9.1. it can be extrapolated from the pattern that on more logical strategic stances the typed of communication mediums that would lend themselves well to evolving an idea to the next level on the same strategic stance may include mediums that relies on higher individualism and smaller groups. This could be enhanced by using more asynchronous technology for meetings to give

participants time to reflect on content individually, as well as opting for more formal channels and stricter deadlines.
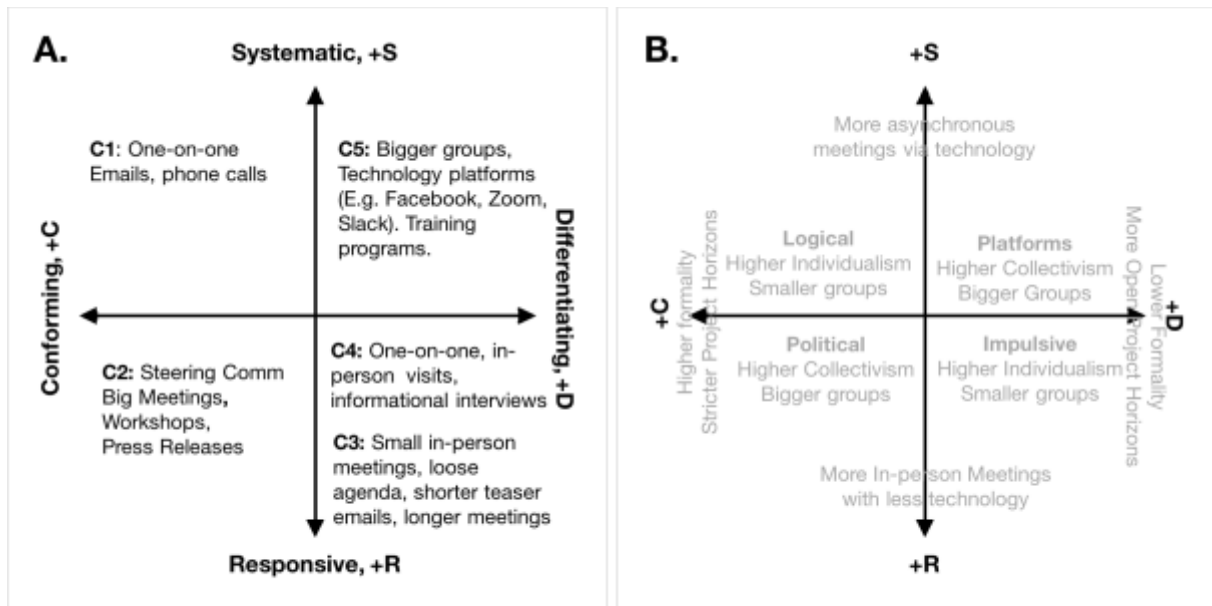
Figure 9.1. – Dominant Communication Medium (A) examples and (B) abstract
(presented along dimensions that would later also evolve into the prototype of M³)

10.2.2. *Theme B: Models - mapping workshops relatively*

In the collection of five case studies in Appendix D through H, three different workshops emerged that embodied the classic rational decision-making under uncertainty strategic stance of being conforming and systematic (listed relative to each other in descending order of reliance on +S, +C):

- W1:   Delphi Method
- W4:   Entrepreneurship training and competition
- W5.1: Consumer Development methodology

In this specific collection of case studies workshops that generated the superior next iteration springboards on the idea development were less contingent on how controlled or systematic (+S, +C) they were, and but rather how well aligned the strategic stance align was with the strategic stance of the strategic decision-makers (managing up) and workshop participants (managing down). One of the cases to illuminate this point was Collaboration 5 (+S, +D) being more responsive in moving the idea to a next iteration on a U-Theory workshop (+S, +D) as opposed to the Consumer Development methodology workshop (+S, +C).

10.2.3. Theme C: Momentum - mapping dynamic trajectories of over time

Apart from Collaboration 1 where classic rationality (+S, +C) strategic stances dominated, snapshots of classic rationality (+S, +C) was also captured in other collaborations as important moments when strategic stances changed over time.

In Collaboration 5 (Snapshot 3) when the contract was signed with the Research Hospital a predominantly systematic and differentiating team (+S, +D) conformed to the entity whom they perceived to have more power to dictate terms. This also occurred in Collaboration 4 (Snapshot 8). For two years now the software start-up had been predominantly entrenched in perfecting the computer programming backend of the platform as well as redesigning other companies' backend components. This pattern of two out of five collaborations ending up on classic rationality and not moving back or forward, which suggests that it may be one of the more comfortable modes to settle into with regards to strategic stances after the turmoil of change in our modern Western society.

Another practical finding that can be derived specifically from the classic rational decision-making data (but is not exclusive to this area) is the concept of maximizing options at higher levels of decision-making. As ideas move up in levels of complication and sophistication one of the side effects is that options for the next idea iteration do not seem to limit options under uncertainty, but rather generate more possible paths. This is not perceived as a paralyzing explosion of options, but rather a generator of multiple windows of opportunities as was the case with Collaboration 1 deciding to duplicate a similar Delphi method workshop with a similar base of blue chip companies but now move from IT services to Telecom Services and then on to Energy.

10.3. Theme Two: Behavioural Decision-Making model (+R, +C)

As expected, evidence of responsive and conforming behavioural decision-making models was in action and observed throughout. It was especially evident in Collaboration 2 with higher education administrators collaborating amongst each other in mediums and formats comfortable to their everyday working conditions.

Because the concept of bounded rationality is also well entrenched in literature this thesis will not claim to be making surprising new revelations about these models either. Again, what is important is that on a continuum it stands to be reasoned that there would be different types of responsiveness and different types of control. This thesis henceforth is looking for the other types of decision-making models in relation to a baseline or anchor. In this thesis Collaboration 2 provides a good enough second anchor from which to compare other collaborations that may exhibit strategic stances with different points of view on responsive and conforming philosophies.

10.3.1. *Theme A: Modes - mapping categorical communication mediums*

Collaboration 2 was less purist in its application of behavioural decision-making by making use of a variety of communication mediums but most dominantly steering committee meetings, and a series of different feedback workshops. Bringing sizable groups of key stakeholders from several different departments together in highly structured interactions and setting the agenda of what information will be communicated accomplishes two things: (i) It trains stakeholders onto the expected behaviour, topics of importance and appropriate conduct in the hierarchy of the organization, and (ii) if key stakeholders return to their respective departments and copy the structure and share the information, a network effect of socialization has the capacity to occur down the hierarchy chain of command in larger organizations.

Though Collaboration 2 strategic decision-makers opted for this route as a necessity in involving a cross-section of stakeholders who could be impacted by organizational changes to establish two-way communication in event of blind spots that could end up being costly, there was also another financial incentive. The three development grants in the case of Collaboration 2 also specifically exercised the same nested type of responsive and conforming expectation of diversity of stakeholders at the table in development discussion.

In revisiting summary Figure 9.1. it can be extrapolated from the pattern that on more behavioural or socio-political strategic stances the type of communication mediums that would lend itself well to evolving an idea to the next level may include mediums that relies on higher collectivism and bigger groups. This could be enhanced by using more in-person meetings to make participants respond in real-

time and then reflect and rationalize individually later to internalize the social behaviour. Like the rational channels enhancing the formality and tone of the channel and setting strict deadlines also has the chances that collaborators would increase the chances that collaborators would respond to uncertain situations using social cues from conforming peers and behavioural decision-making models.
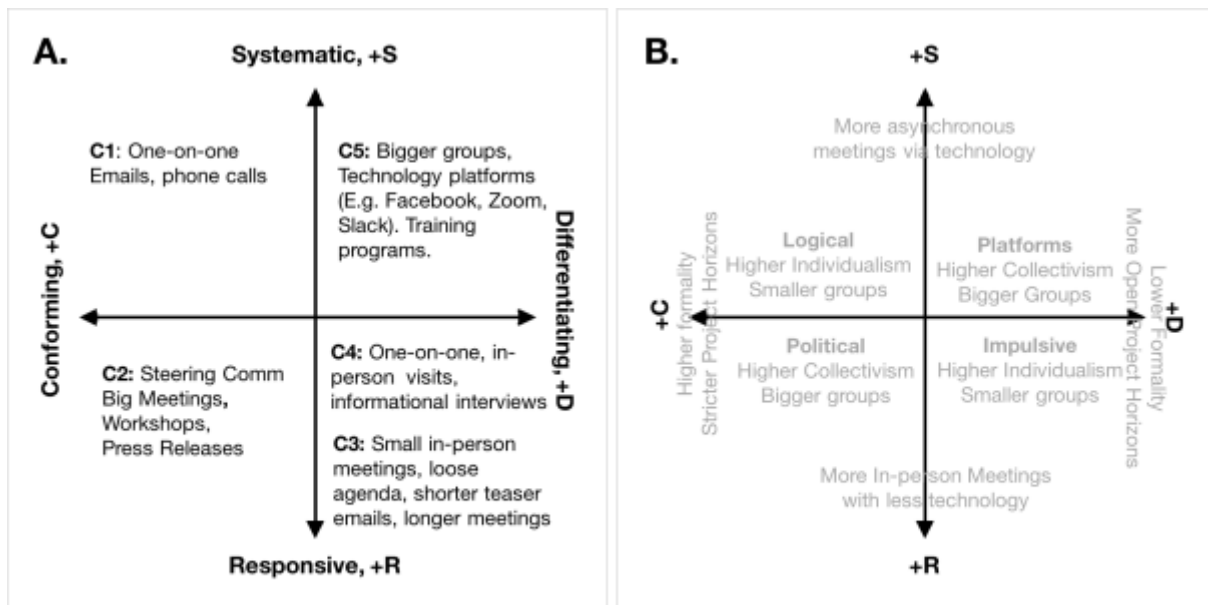
Figure 9.1. – Dominant Communication Medium (A) examples and (B) abstract
(presented along dimensions that would later also evolve into the prototype of M³)

10.3.2. Theme B: Models - mapping workshops relatively

In the collection of five case studies from Part II, only one workshop emerged that embodied the classic bounded rational decision-making under uncertainty strategic stance of being conforming and responsive: The Customer Journey Mapping from Collaboration 2

Astutely aligned with the strategic stances of a traditional and entrenched industry operating in a pack of other elite entities (+R, +C) it may take more outside and environmental forces for a university to separate from the pack. Maybe the national industry experts are consciously aware of it and conforming, maybe they are perpetuating it inadvertently, but in the line of available workshops their resources are making available more of the same strategic stance (+R, +C). Regardless, this does align with top leadership's perception on the best strategic stance even if that may not be internal to them either. The problem is: there is compelling evidence to suggest that not top management, not the intermediary decision-makers and not the alpha movers who were a part of the workshop (+R, +C) are intrinsically aligned to

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socio-politics, but they are astute enough to know that rules of the game demands they need to be responsive and conform.

This is however not the case in Collaboration 3. Though the Design Thinking workshop is constructed from an improvised decision-making under uncertainty strategic stance (+R, +D), it left itself wide open and vulnerable to controlled socio-political interference (+R, +C). And that is exactly what happened. So, whereas Collaboration 2's stakeholders responds and conforms to 'the rules of the game'. Collaboration 3's strategic decision-makers may (unadvisedly) stack the deck in their favour by (inadvertently) stating 'different rules of the game' to workshop participants, while strategic decision-makers still (inadvertently) play by a different set of rules to ensure key decision-makers benefit (or maintain interest) in the development of the end result.

To unpack, specifically in the case of Collaboration 3 a number of stakeholders decided before the workshop that an 'accelerator' would serve their best interest (Snapshot 3), during the workshop (Snapshot 4) a number of people developed the idea, and after the workshop (Snapshot 5) the group of decision-makers (inadvertently) maintained the perception that was the best idea and carried forward an iteration of the idea 'accelerator-maker space' when in fact that was not even an idea that the workshop participants developed. That is not to imply that improvisational (+R, +D) strategic stances do not exist as will be fully discussed in the Improvisation decision-making section, however, instances do exist where strategic stances (inadvertently) may not be what they appear to be when control over public buy-in is being developed.

10.3.3. Theme C: Momentum - mapping dynamic trajectories of over time

Apart from Collaboration 2 and 3 where bounded rationality (+R, +C) strategic stances dominated, behavioural decision-making snapshots of (+R, +C) were also captured in other collaborations as important moments when strategic stances changed over time.

Specifically, in Collaboration 4 and 5 the +R, +C snapshots could also be referred to as glamour shots as they depict the project as more prestigious and special. Snapshots involves artefacts (e.g. $10-million-dollar chandelier), locations (e.g. biggest Fire Training College, biggest Hospital in Europe) people (e.g. professor emeritus getting involved) and in the modern day and age social network equity (e.g. top 10 article or 45K likes on YouTube) that sets the collaboration's idea on a hierarchy as superior by affiliation.

But in spite of this glamour by association, a cautionary note is needed. Since bounded rationality is often cast as subservient to rationality because it relies on mental shortcuts and may happen below the consciousness threshold of awareness, mapping others' trajectories and strategic stances with regards to responsive and conforming (+R, +C) may be perceived as less flattering. A strategic decision-maker may also downright deny occupying this field in order to not be socio-politically painted as manipulative or gullible. Yet, regardless if it happens above or below the conscious threshold this field is the essence of political sophistication in building critical mass, trust and loyalty to move a project to its next iteration.

10.4. Theme Three: Improvisational Decision-Making model (+R, +D)

Presently, the more improvisational decision-making models which are responsive and differentiating have yet to be relayed in relation to traditional classic decision-making models and behavioural decision-making models. As is evident when comparing more real-time responsive Collaborations like 2, 3 and 4 differences can be used to understand how higher uncertainty embracing strategic stances differ from more control or conforming stances. Specifically, the differences can be observed in terms of: categorical tools used like dominant communication modes, relational differences like strategic stances (philosophy) of workshops in relation to the different decision-makers, and dynamic trajectories over the course of an idea's development.

This thesis henceforth is looking for the other types of decision-making models in relation to a baseline or anchor. In this thesis Collaboration 2 provides a good enough second anchor from which to compare other collaborations that may exhibit strategic stances with different points of view on responsive and conforming philosophies.

10.4.1. *Theme A: Modes - mapping categorical communication mediums*

With regards to categorical communication mediums this thesis provides not one, but two Collaborations (3 & 4) to provide insight into categories of communication mediums that facilitate more differentiating as opposed to conforming or controlling ideas to be generated. Similar to Collaboration 2 in the behavioural application of bounded rational decision-making communication mediums, Collaboration 3 and 4 still rely heavily on non-verbal body language, intonation and tone of voice, office design, attire, and appearance that constitute 80% of a message bounded rationality shortcuts. However, differently from Collaboration 2, Collaboration 3 & 4 shrinks the groups sizes and increases the informality to increase capacity to be able to deal with unexpected information, ideas or surprises.

Collaboration 3 strategic decision-makers opted for communications mediums that were relatively more time consuming as priorities of different stakeholders over whom there was no direct control needed to align. Similarly, Collaboration 4 was also less cost effective as geographic dispersion was not treated with cheap and easy, time saving technology, but hundreds of hours were spent on the road to ensure face-to-face contact was maintained. In both Collaboration 2 & 3 a deliberate premium was put on remaining flexible in the early stages. However, just because upfront investment was made in of higher cost time and energy, it did not mean it continued throughout. As we will come back to in the dynamic trajectory, it is especially apparent from both Collaborations 2 & 3 that responsive and differentiating strategic stances are a transitory state.

In revisiting summary figure 9.1. it can be extrapolated from the pattern that on more differentiating affective strategic stances the type of communication mediums that would lend itself well to evolving an idea may include mediums that rely on higher individualism and smaller groups that can accommodate uniqueness. Improvisation could be enhanced by using more informal face-to-face encounters to give prospects opportunities to respond in the moment. With regards to time horizons improvisation benefits from the tightest possible deadlines compared to all the other strategic stances, but the more open ended time-horizon on the big picture the longer-term orientated the decision-maker can be on the solution.
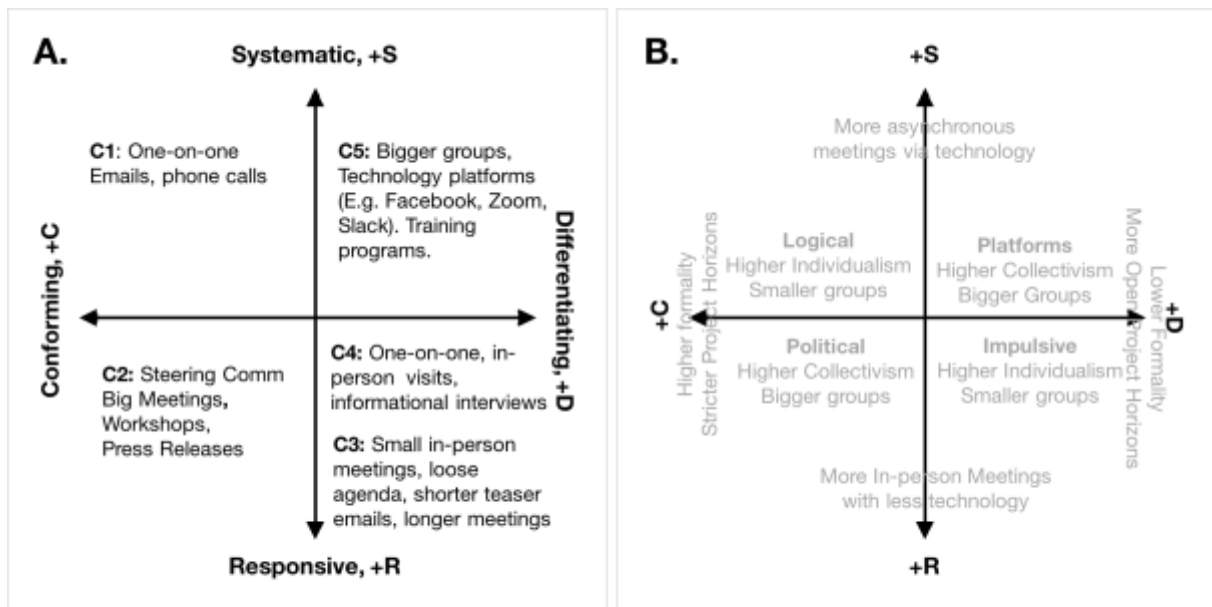
Figure 9.1. – Dominant Communication Medium (A) examples and (B) abstract
(presented along dimensions that would later also evolve into the prototype of M³)

10.4.2. Theme B: Models - mapping workshops relatively

In the collection of five case studies from Part II, one workshop emerged that
embodied the improvisational decision-making under uncertainty strategic stance of
being responsive and differentiating: The Design Thinking workshop from
Collaboration 2

As was touched on in the Behavioural decision-making section, in spite of this
workshop's improvisational stance (+R, +D) the outcome resulted in a predominantly
behavioural decision-making outcome (+R, +C) on account of the key strategic
decision-makers. There was however a subgroup of workshop participants (G3.5)
who committed to following through on the improvisational iterations of the idea that
was generated. The major finding on the outcome of this subgroup who intrinsically
embodies all the necessary textbook qualities to have immersed in a Design Thinking
experience, is that the enthusiasm died off within days after the workshop.
Conversely the subgroup that adopted the behavioural decision-making stance which
had more alignment with the project's leadership team (+R, +C) lasted at least 60
days longer in building and iterating on the idea. In terms of practical implication, it
thus stands to reason that even in informal and unstructured innovation some
successive structure, responsiveness, and conforming qualities are necessary to

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evolve a complex idea and transition it over into implementation during collaborations.

10.4.3. Theme C: Momentum - mapping dynamic trajectories over time

Apart from Collaboration 4 which launched almost every new opportunity with a new improvisation path (+R, +D), responsive and differentiation snapshots (+R, +D) were also captured in other collaborations as important moments when strategic stances changed over time.

Most notably improvisation occurred very often in Collaboration 3 as was characterized by the long lead time waiting for windows of opportunities to align. Also, the short characteristic emails that informed without context, informal tone and jokes in small impromptu gatherings increased the chances of spontaneous emergence of new and different ideas.

Collaboration 2 also produced uncharacteristically unexpected improvisations with the formation of a steering committee who upon first meeting expectantly wounded the baseline of the idea of doing MOOCs in partnership with other Universities which had been quietly in development in the background. And then, secondly, unexpected improvisation occurred in response when higher level decision makers defied expectations by resurging the idea 2-3 weeks later with a press release that a commitment to the idea of MOOCs had indeed been made.

Similarly, Collaboration 5 also embarked on uncharacteristically unexpected improvisation by throwing together a community event for hundreds of the most influential leaders in a metropolitan area and raising thousands of dollars on short notice to host an event. It can however be speculated that the reason Collaboration 5's strategic decision-making team succeeded was due to the fact that as a Mayor and entrenched community leader duo bringing in a professional speaker from a world-renowned research hospital the brand equity (+R, +C) was high enough to allow for shortcuts through the systematic channels (+S) so that board approval due diligence, media coverage vetting and other formal channels for establishing trust and loyalty were not necessary.

10.5. Theme Four: Consilience Decision-Making model (+S, +D)

Presently, the more disruptive decision-making models which are systematic and differentiating also have yet to be relayed in relation to traditional classic decision-making models and behavioural decision-making models. As is evident when comparing more perpetual self-sustaining Collaborations like 5 to a tried and true systematic Collaboration like 1 differences can be used to understand how higher uncertainty embracing strategic stances differ from more controlling or conforming stances. Specifically, the differences can be observed in terms of: categorical tools used like dominant communication modes, relational differences like strategic stances (philosophy) of workshops in relation to the different decision-makers, and dynamic trajectories over the course of an idea's development.

This thesis henceforth is looking for the other types of decision-making models in relation to a baseline or anchor. In this thesis Collaboration 1 provides an excellent anchor from which to compare other collaborations that may exhibit strategic stances with different points of view on responsive and conforming philosophies.

10.5.1. *Theme A: Modes - mapping categorical communication mediums*

As discussed earlier, Collaboration 1 was almost purist in its application of rational decision-making communication mediums by selecting to rely heavily on one-on-one emails. By removing non-verbal body language, intonation and tone of voice, office design, attire, and appearance that constitutes 80% of a message bounded rationality shortcuts or distorting smoke and mirrors are diminished. Add to that the anonymizing scrub of the data and the result is richly content focused. Even though Collaboration 5 was still rational, it is very different from Collaboration 1 in the way it used communication mediums.

First, Collaboration 5 did engage with responsive strategies throughout. It is there for not a pure example of being a concentrated example of rationality. But in the way it used information technology communication it could be argued that it took rationality to the next level: hyper rationality.

In Collaboration 5 the one-to-one technology (e.g. email) gets replaced with a one-to-many (e.g. zoom, Facebook, Slack) which ultimately evolves into a networked effect of many to many (e.g. peer support and new subgroups being formed). Specifically, worth noting is how the control of Collaboration 1 is replaced with differentiation and empowerments that allow the network to support each other on the provided platforms with minimal interference of an intermediary. As will be discussed in further detail, getting to a shared platform state would not be possible without going through a process of responsiveness and conforming first. Herein lies our next clue to be analysed in Theme C as to the dynamic qualities of strategic stances.

Through Collaboration 5 we also observe the use of asynchronous technology not necessarily because of preventative geographic barriers, not necessarily to ensure anonymity, but instead to empower options associated with flexibility. It should however be noted that this flexibility could (as the name suggest) disrupt the flow and thus cannibalize a previous stepping stone in the process or the network. In serving a higher goal, strategic decision-makers operating in this quadrant expect and rationally chose that trade-off in pursuit of developing a broader goal of higher value. We also observe how the opposing force of responsiveness and control can be a part of the stance but enough freedom is allowed to not need excessive degrees of it.
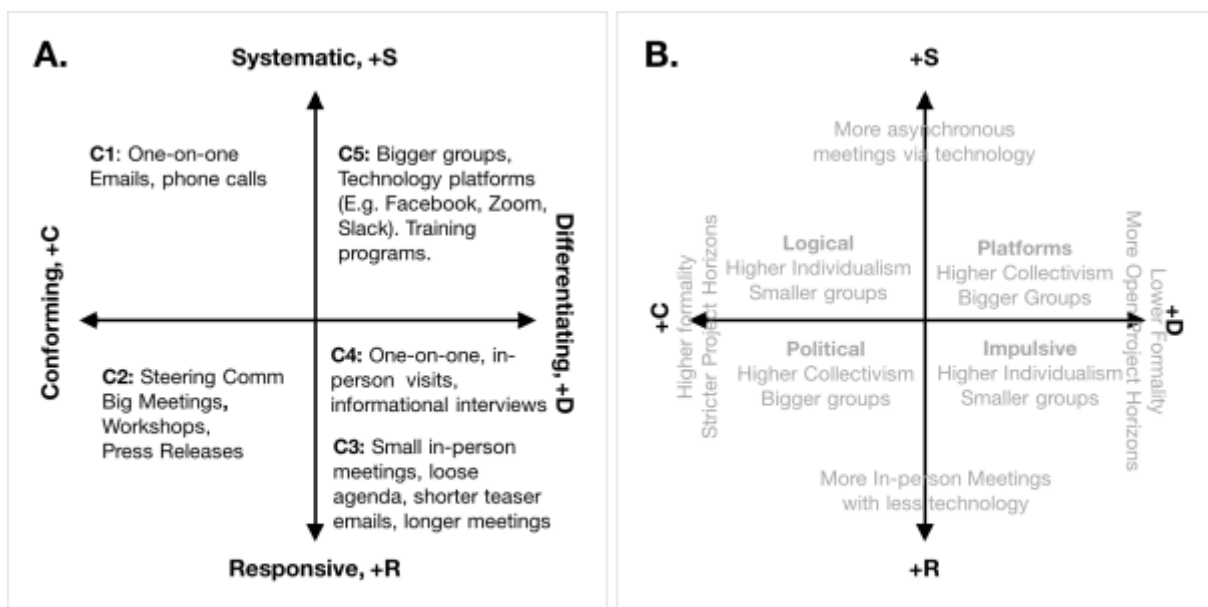
Figure 9.1. – Dominant Communication Medium (A) examples and (B) abstract
(presented along dimensions that would later also evolve into the prototype of M³)

In revisiting summary figure 9.1. it can be extrapolated from the pattern that on more differentiating logical strategic stances the type of communication mediums that

would lend themselves well to evolving an idea to the next level on the same strategic stance may include mediums that rely on higher collectivism and bigger groups (who may have the option of subdividing). This could be enhanced by allowing for the option of asynchronous technology for meetings to give participants time to reflect on content individually, as well as creating the space for more informal channels. Disruptive decision-making channels benefit most from open-ended time horizons that look into perpetuity.

10.5.2. Theme B: Models - mapping workshops relatively

In the collection of five case studies detailed in Part II, one workshop emerged that embodied the disruptive decision-making under uncertainty strategic stance of being systematic and differentiating: The U-Theory workshop from Collaboration 5

As was touched on in the classic rational decision-making section, Collaboration 5's strong alignment with the U-Theory in contrast to the frustration with Customer Development methodology provides insight into when the same group of decision-makers encounters workshops with different stances on the development (or generation) of new ideas. Relatively speaking, when strategic stances between workshops and strategic decision-makers are in alignment, stronger traction and idea can be built.

It should also be noted that specifically in Collaboration 5 the Customer development methodology workshop (+S, +C) was artificially adjusted by the decision-makers to explore all quadrants of decision-making models for the organization's development. That satisfied the workshop facilitators' criteria on immersing and committing to the principles of the workshop philosophy but did not produce results that aided in decision-making to the stakeholders. As an outcome three of the development models were pursued simultaneously with various degrees of success. It was not until the U-Theory workshop (+S, +D) that the full potential of a higher quality iteration of the network theory model could be envisioned. As it turned out, from the U-Theory workshop content (as well as in practice) the development of aspects of idea iterations of all other decision-making under uncertainty modes of thinking are necessary before disruptive or evolutionary decision-making could succeed.

10.5.3. Theme C: Momentum - mapping dynamic trajectories over time

Apart from Collaboration 5 where hyper rationality (+S, +D) strategic stances dominated, disruptive decision-making snapshots of (+S, +D) were also captured in other collaborations as important moments when strategic stances changed over time.

Most centrally everyone in the collaboration had the theoretical capacity to cause a fundamental shift in their industry (or cross-section of industries) (+S, +D). It was one of the criteria at the onset for selecting the best projects to profile emergence. However, projects having been in an embryonic state of conception when joining also constituted greater risk that a project's full potential would not be actualized.

Additionally, as was observed throughout the five collaborations, strategic decision-makers may posture verbally for a grand vision; however, when it comes to implementation that vision gets 'scaled to reality'. In Collaboration 1 the Project Architect responded to a room full of lawyers that the ultimate goal was to revolutionize the way that contracts are negotiated (+S, +D), but he prioritized focusing on principles for the first step (+S, +C). When the opportunity presented to move on to the next iteration (telecom), and the next (energy), the strategic decision-making team chose two more times to remain with the safer (+S, +C) strategic stance by just replicating the model and participants.

A similar situation occurred with Collaboration 2. In this instance, it was more challenging to gauge full intent; however, evidence suggest strategic decision-makers tone down their visions to get collective buy-in. This is evident in the strategic-decision makers' past projects on and off the job (+S, +D), in their preferred vocabulary when they decide to take small steps (not +R, +C), and in the strong awareness and response from a demographic of stakeholders who also have a track record of being first movers who respond to workshop invitational (+S, +D).

In Collaboration 3 the big dramatic visions of what is possible are also informed by past experience with interesting developments over the world that could be duplicated locally where one platform is the generator for several more platforms of innovation (+S, +D). However, in this collaboration we observe the greatest

asymmetry of priorities as inter-organizational stakeholders come to the table with their own agendas and strategic stances. Economic developer interests (e.g. multi-generational unemployment due to drug abuse) are not well aligned with academic interests (management research access), which were not clearly aligned with the (perceived) current city council interests (e.g. 'shiny buildings'), which were not clearly aligned with private sector interests (e.g. consulting fees) which were not clearly aligned with the target social enterprise interests (e.g. £45,000 of funding within the next 90 days). Though there is common ground and the cross-section buy-in, the central question of real and perceived power centres does not resolve for next iteration traction.

Collaboration 4 similarly aspires to introduce a software platform that has the capacity to revolutionize the way health & safety is done at a fraction of the cost and an interconnected network of accountability and lifelong training (+S, +D). Yet in this collaboration's situation priority is given to deliverables that have been crafted with perfection (+S, +C).

But even in Collaboration 5 where an unexpected turn of events resulted in the emergence of a solution that embodies the emergence of hyper realism (+S, +D) it could also be said that key strategic decision-makers are all over the map with their strategic stance. Though they are cognizant of the impact that the evolution of the idea has in cannibalizing their existing steady stream of income, they are visibly energized about the long-term potential of the initiative on a much larger scale over a longer period of time.

10.6. Limitations

Quantity

As rare as it is to have five ethnographies in a single doctoral thesis undertaking, so too would it be having forty ethnographies. However, having higher numbers of idea iterations to unpack and dissect in relation to one-another would greatly aid in the generation of clearer category lines, more definitive relational positions on a continuum, and evolutionary trajectories of ideas.

To address this limitation this thesis also used the academic pursuit of models and theories in strategy and management as a proxy to expand on the central premise that researchers too are experts in decision-making under uncertainty when they write grant proposals, undertake the practical experience of contact with data, and write articles and books on theory and models.

Throughout this monograph over 200 theories and models are being mapped in the attempt to gain further insight not only into strategy and decision-making under uncertainty itself, but also to test the categorical and relational boundaries of the theory. Additionally, by tracking the evolution of specifically management strategy over the past one hundred years a pattern in the evolution of the discipline's theories became apparent. In Chapter 12 an additional seminal cross-section of management theories will also be mapped to address the limitations of quantity in a more accessible dimension of theory development and application.

Field worker bias

In Chapter 4 through 8 the confessional ethnographies provide a transparent account of forty snapshots of the field worker's affective and philosophical preferences over the course of decision-making under uncertainty encounters with participants in the field. Relative to other participants and actors, the field worker resistance to conforming is generally high. This was especially apparent in situations where conforming needs/demands was especially high to move an idea forward to its next iteration. Thus, just like leadership collective can have a natural strategic stance, so too the field worker had a predominant differentiating disposition (+D). This may have been a necessary quality in order to introduce the two categorical addendums of Improvisation (+R, +D) and Disruptive (+S, +D) decision-making under uncertainty in relation to classic rational (+S, +C) and behavioural (+R, +C) decision-making. However, it may also mean that outcomes of all the collaborations were consistently influenced in this direction and/or reported to be perceived relatively more contrarian than was in actuality the case.

Similarly, field notes, interactions and archived documents especially at the onset of the research suggest that the five research collaborations were picked specifically because the field worker perceived the greatest potential in these cases to document

emergence of a revolutionary idea that could impact an industry fundamentally (+S, +D). Whether that would have happened in the time allotted was another question, but it speaks to the criteria in project selection as well as types of biases and preferences. The fact that none of the initial four projects resulted in the description of such wish-fulfilment is a testament to temperance, leaving only the final collaboration as a questionable account. Seen in the context of relativity, it is however possible to derive value from looking at the final collaboration being the most revolutionary which has value because a single field worker contributed all the data.

One of the quality control measures that could be applied in the Part III analysis portion is to evaluate writing for evidence of preference of one strategic stance over another. If each strategic stance is couched as having a unique and valuable contribution that it could make to the development of an idea, then the bias had been mitigated.

Socio-political Temperance

In Chapter 3 the value of closing the feedback loop with the participants in the ethnography was discussed extensively. It however also has its drawbacks. Specifically, as it applies to the perception that decision-makers want to project towards others who may work on the same team with them in the future. Anonymity has been created and assured to all participants in the context of third parties reading the ethnographical account, however reviewing socially sensitive dynamics and the field worker's confessional personal perception has the capacity to have a socio-political response. To that effect participants were only asked for feedback on that when they were in the room to experience (not related snapshots) and a selection of fieldworker point of views were removed before sending the snapshots to participants for review.

10.7. Conclusion

The thesis thus successfully captured the more extreme phenomena of strategic decision-making that thrives and welcomes higher levels of ambiguity namely improvisation and disruptive decision-making under uncertainty. This is important since it constituted a significant body of literature on innovation that does not always get grouped with strategy. Yet data suggests that if this process of innovation aligns

stronger with strategic decision-makers' decision-making under uncertainty stance, implication and further development of the innovative idea will have a greater capacity for traction into the future. It also explored the use of social realism as a tool for investigating a trilogy of categorical, relational and dynamic changes over time. This is important in application on moving ideas forward in the strategic stance that is preferred. But in theory, and specifically theory development this also has an application.

THEORY JUXTAPOSITION

CHAPTER 11

EMERGENT SEMINAL LITERATURE ANALYSIS

11.1. Introduction

In Part II the fieldworker saturated the reader in empirical data that emerged from eight of the most defining snapshots of each of the five projects' journey over the first few years after the collaboration's inception. It was then also towards the end of the most defining snapshots in Collaboration 1 to 4, that the fundamental codes emerged that has been alluded to but have yet to be discussed in detail. Delving into the detail of the codes with the scaffolding support of existing literature, theories and models will be the focal point of this chapter as it informed and fleshed out the emergent M3 Strategic Decision-Making under Uncertainty modes, models and momentum that could be documented in early formation embryonic stages of collaborative complex problem-solving.

Returning to the literature base it became apparent that studying cognitive processes was woefully insufficient at capturing the impact superiors and subordinates have on strategic positioning under uncertainty as the social component is critically important. Additionally, purely classifying conduct in terms of socially perceived hierarchies and power structures was woefully insufficient as some processes are societally recognized but cognitively or behaviourally rejected. Likewise deriving the theory based off behaviour left valuable data on the table untouched. For example, every workshop carried with it a set of strategic lenses that was intentionally or unintentionally activated for larger group collaboration facilitation. In some instances, the participants knew what lens they needed adapt to, in others they struggled or fought the expectations. All of this was data. Insight into plugging into an epistemological and cognitively lens that needed to be plugged into if the workshop was to produce momentum, future behaviour and a cognitive framework to move towards.

Ultimately the conclusion is that it is a combination of socio-cognitive behavioural strategies that made up the underlying facets that is being explored in this theory and model. Essentially social cognition is a phenomenological process for investigating the cognitive process that underlie social interactions. According to the International

Social Cognition Network (ISCON, 2017) the major concern of the approach are the processes involved in perception, judgement and memory of social stimuli; the effects of social and affective factors on information processing; and the behavioural and interpersonal consequences of cognitive processes which is ideal for collaborative intra- and intergroup processes. Considering this definition, the phenomena that is thus being attempted to be captured is a collective social-cognition on a strategy for solving a complex problem.

11.2. Decision-Making under Uncertainty Modes

At the broadest level, decision theorists have identified collections of consistent rules sets for strategic decision-makers in uncertain environments. For the purposes of this study various rules were analysed, aligned across various disciplines and integrated when similarities or strong overlaps exist. The end result was the emergence of a model with four integrated dimensions. The dimensions can be regarded as pairs of diametrically opposite socio-cognitive strategy modes as presented in Figure 11.1.
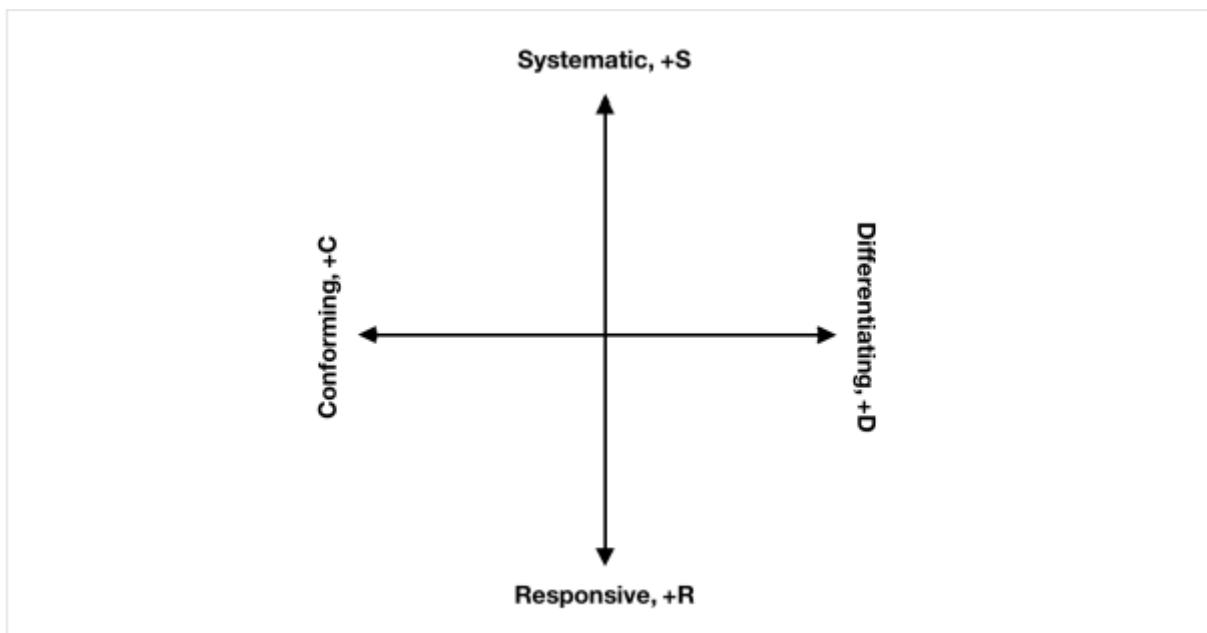
Figure 11.1. – M³ Strategic Decision-Making Uncertainty: Modes

The first pair of modes may be (briefly) described as:

i. *systematic strategies* (+S) – a dominant alignment with increasingly sophisticated rational cognitive processes. These processes plan, purposefully compartmentalize, and regulate emotions; and

ii.   *responsive strategies* (+R) – a dominant alignment with increasingly sensitized intuitive cognitive processes. These processes are reflective, associative, action-orientated and emotionally expressive.

The second pair of opposing modes may be described, as follows:

iii.   *conforming strategies* (+C) - a dominant alignment with converging by adapting or conveying socially perceived superior norms. These processes include the exploitation of existing power; and

iv.   *differentiating strategies* (+D) - a dominant alignment with diverging by deviating from the norm and empowerment for exploration. These processes include novelty-seeking, sabotage, risk-taking, experimentation, play, flexibility, discovery, and higher level innovation.

11.2.1. Systematic (+S) vs. Responsive (+R) Modes

For the purpose of this thesis, philosophic debates specifically circling the Systematic (+S) vs. Responsive (+R) socio-cognitive strategy modes could be traced back as far as 4th century B.C. Advocating for the Systematic mode (+S), Aristotle took an empirical view of knowledge that values information gained through the senses and inductive reasoning. Plato, however did not agree. Plato made an argument for the superiority of the Responsive mode (+R); that all perceivable things are derived from eternal archetypes and are better discovered through the soul than through senses.

As summarized in Appendix A, the past twenty-five centuries human civilization have yielded broad cross-sectional contributions to the debate on decision-making and specifically decision-making under uncertainty as different academic disciplines, functional factions, cultures, nationalities and generations weighted in. However, despite the advances in research methodologies and technological the debate still rages on (Evans & Stanovich, 2013; Osman, 2004; Gigerenzer, 2011; Keren & Schul, 2009; Kruglanski & Gigerenzer, 2011). But one thing these continued debates did yield is a rich and diverse discourse on the importance of both socio-cognitive strategy modes.

Dual Process Theory

Upon critical reflection of the existing body of literature at the forefront of the Systematic (+S) and Responsive (+R) strategy modes, as well as the wider body of literature beyond Management Studies, this thesis' data empirically supports the predominant conclusions of the evolving body of literature of *Dual Process Theory* as conceived of by Daniel Kahneman and Amos Tversky.
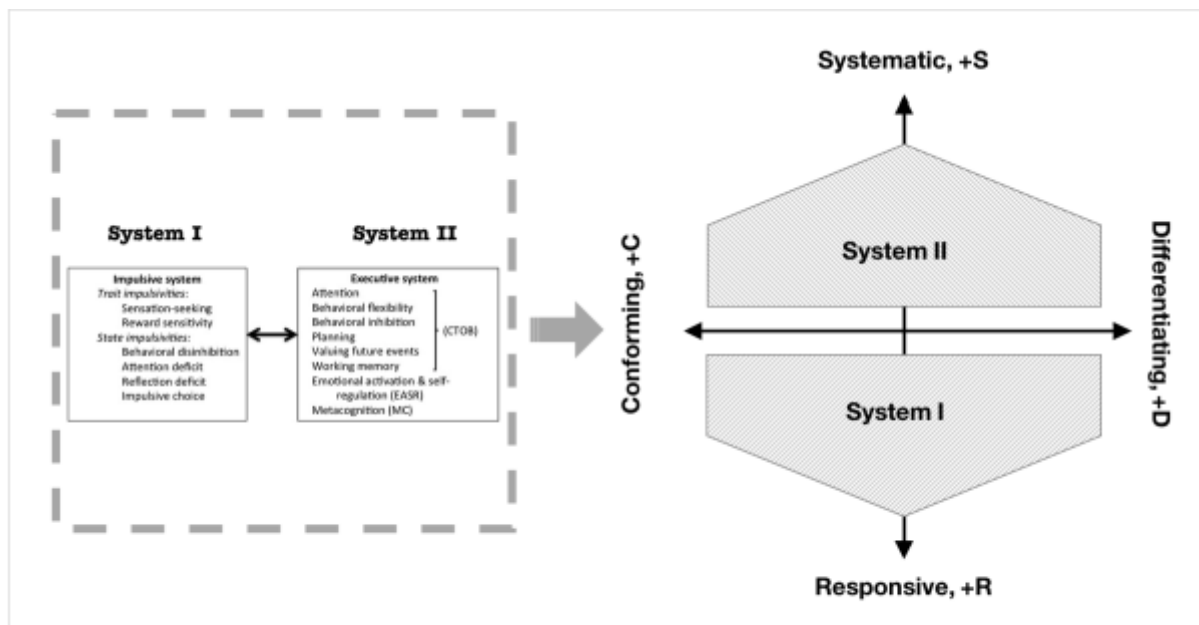
Figure 11.2. – Stanovich and West's (2000) Competing Neuro-behavioural Decision Systems (CNDS) mapped onto the M³ modes

In a 2003 paper Kahneman summarized the accumulation of decades of research on Dual Process Theory he had done in collaboration with his long-time research partner Amos Tversky. He also purposefully integrated the work of other researchers like for example accepting a biological psychology vantage point and terminology that had in turn built upon his work such as accepting labelling the two modes System 1 (+R) and System 2 (+S) as suggested by Stanovich & West (2000) depicted in Figure 11.2. To Kahneman the definition of the two modes are ultimately:

> The operations of System 1 are typically fast, automatic, effortless, associative, implicit (not available to introspection), and often emotionally charged; they are also governed by habit and are therefore difficult to control or modify. The operations of System 2 are slower, serial, effortful, more likely to be consciously monitored and deliberately controlled; they are also relatively flexible and potentially rule governed. The effect of concurrent cognitive tasks provides the most useful indication of whether a given mental process belongs to System 1 or System 2 (Kahneman, 2003: 698).

Other management scholars that researched and described the exact same decision-making under uncertainty drives while describing it with a different vocabulary and

research methodology included Herbert A. Simon. His work focused on social decision-making in the context of organizations (or administration). To him the differentiation between the two modes was labelled bounded rationality (+R) vs. neoclassic rationality (+S). He explained it as follows:

> "Rational behaviour, in economics, means that individuals maximize their utility function under the constraints they face (e.g., their budget constraint, limited choices, ...) in pursuit of their self-interest. This is reflected in the theory of subjective expected utility. The term, bounded rationality, is used to designate rational choice that takes into account the cognitive limitations of both knowledge and cognitive capacity. Bounded rationality is a central theme in behavioural economics. It is concerned with the ways in which the actual decision-making process influences decisions. Theories of bounded rationality relax one or more assumptions of standard expected utility theory" (Simon 1976: 82).

Like Kahneman & Tversky, Simon's work made new introductions with regard to the Systematic (+S) vs. Responsive (+R) modes, but with Simon's specific introduction he is fundamentally more concerned with the concept of *values* in decision-making processes which also links his work to philosophy and specifically the understanding of the relation between *homo economicus and homo sociolus*[4].

Kahneman & Tversky's definitions on the Systematic (+S) and Responsive (+R) modes are considered the best at describing the empirically observed thesis data, there still remains limitations causing Dual Process Theory (and Simon's Maximization addendums) to not constitute a comprehensive theory of Strategic Decision-Making under Uncertainty.

Limitations

First and foremost is the limitations brought about by the intentional or unintentional influence of one of Kahneman & Tversky's even more acclaimed theories of decision-making under uncertainty theories, prospect theory (1979, 1992). Prospect theory was originally conceived as a critique of expected utility theory (1979) which at the time dominated and still today dominate academic curricula as well consulting firm predispositions towards decision-making and risk. The 1979 paper outlines several classes of choice problems systematically violate the axioms

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[4] Homo economicus (philosophies of perfect rationality of economic self-interest) has a strong overlay with +Q1, whereas homo sociologicus (philosophies of social construction of values, norms and goals to be fulfil social self-interests) has a strong overlay with +Q2. Additionally, homo biologicus (philosophy regarding the pursuit of satisfying physiological self-interests) has a strong overlay with +Q3, and homo reciprocas (philosophy emphasising human need and desire for co-operation) had a strong overlay with +Q4.

associated with expected utility function. For example, students and faculty were presented with a hypothetical choice problem and asked if they prefer option A or B.

Option A:
    50% chance to win 1,000
    50% chance to win nothing
	Option B:
	    450 for sure

Table 11.1 – Kahneman and Tversky's (1979) Prospect Theory Experiment

The outcome of the lab controlled hypothetical choice experimental study that illustrated that intuitive risk averse decision (Option B or +R, +C) is predominantly selected above rationally and probabilistic superior outcomes (Option A or +S, +C) did well for furthering the dialogue between rational and bounded rational decision-making under uncertainty, however it did little (or even negated) addressing when and how higher risk decisions were in fact being perused.

The premise of prospect theory thus very centrally relates to the question and challenges associated with lower risk (+C) or higher risk (+D) associated with the second pair of decision-making modes, Conforming (+C) vs. Differentiating (+D) which is not accounted for in the Systematic (+S) vs. Responsive (+R) modes.

The second limitation pertains specifically to the implications associated with Kahneman and Tversky's predominant mode of research methodology. In papers, they openly discuss that they are "keenly aware of these problems" (1979:265) associated their laboratory experiments typically involving "contrived gambles for small stakes, and a large number of repetitions of very similar problems". This thesis would not be the first to flag that this limits their generality. Analysing real choices investigated in the field by naturalistic behaviour as has been done in this thesis thus offers an important and valuable door on a broader perspective not always visible to the tight controlled lab environment that intentionally shut out "noise" that may ultimately be important data.

The third limitation also pertains to the implication of control that extinguishes chances of innovation or emergence of new strategic stances. When a binary Option A vs. Option B experimental design is presented that claims to measure risk averseness it may in fact not be when respondents don't get to try to renegotiate the terms and generate innovative solutions. When the range of decision-making options of *real* risk

associated with innovation or emergent strategy is blocked out from consideration, a strategy research question (as is the case with this thesis) is less likely on account that the multiple-choice questionnaire format forces respondents to conform and adapt (+C) to the white coat authority figure's expectations. True free will and risk associated with choosing innovation and/or new strategy as a viable course of action for strategic decision-makers under uncertainty is thus extinguished in many of these lab experiments.

The fourth limitation concerns the dynamism between the two drives. How and when do they interact, switch and change. Granted there are significant energy surging around debating the questions, but it may be important that broader outlook be considered in moving towards a resolution.

For these reasons, this thesis' functional definition for what constitutes the Systematic (+S) vs. Responsive (+R) modes has omitted reference to "control" and also selected to not settle on Dual Systems Theory as a singular informing theory for the model.

The Broader Body of Literature

Analysing the Systematic (+S) vs. Responsive (+R) modes by integrating it as a component of a broader body of knowledge also independently affirms its validity as different fields utilizing different research methodologies, have different values and focal points. If the existence of a two diametrically opposing decision-making under uncertainty modes are truly in existence, it should have also been observed and documented outside of Management Studies. That was indeed found to be the case.

From the adjacent field of persuasion in business marketing and communications another seminal contributing team included Richard E. Petty's and John T. Cacioppo (1986) introduced the Elaboration Likelihood Model (ELM). In this model of persuasion, the same two drives are referred to as peripheral route (+R) vs. central route (+S):

> We have suggested that there are "central" and "peripheral" routes to persuasion, with the "central route" representing the processes involved when elaboration likelihood is high and the "peripheral route: typifying the processes operative when elaboration likelihood is low. As Chaiken (1982) has noted, the central route encompasses her

systematic view of persuasion whereas the peripheral route encompasses her heuristic view of persuasion (Petty & Cacioppo, 1986: 6).

Most commonly deployed in scenarios where formal power does not exist, the elaboration likelihood model is frequently deployed in marketing strategies to influence and persuade in purchasing decisions. The techniques outlined in the model also have capacity to shape organizational cultures.

From the field of Medicine, Roger Sperry also pioneered the idea concerning the functional specialization of the cerebral hemispheres. Sperry's research participants were patients who opted as a last resort to control intractable epileptic seizures by surgically separating their corpus callosum connecting the two brain hemispheres. In observing the decision-making patterns of these patients, inferences on the functional specialization was possible:

> The left hemisphere is the one with speech, as had been known, and it is dominant in all activities involving language, arithmetic, and analysis. The right hemisphere, although mute and capable only of simple addition (up to about 20) is superior to the left hemisphere in, among other things, spatial comprehension - in understanding maps, for example, or recognizing faces. (Horowitz, 1997: 16).

Once again it is evident that here too the definition of the neurological hemispheres aligns with the decision-making modes. The "analytical" or "logical" left hemisphere being synonymous with Systematic Drive (+S), and the "holistic" or "intuitive" right hemisphere being synonymous with the Responsive mode (+R).

11.2.2. *Conforming (+C) vs. Differentiating (+D) Modes*

Exploitation and Exploration

The organizational decision-making scholar whose contributions were the most fundamental on the concepts and distinctions between the conforming (+C) and differentiating (+D) modes was James G. March (1991). In March's vocabulary, he introduced the modes as exploitation (+C) vs. exploration (+D) as depicted in Figure 11.3:

> A central concern of studies of adaptive processes is the relation between the exploration of new possibilities and the exploitation of old certainties (Schumpeter 1934; Holland 1975; Kuran 1988). Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution. (March, 1991: 71).
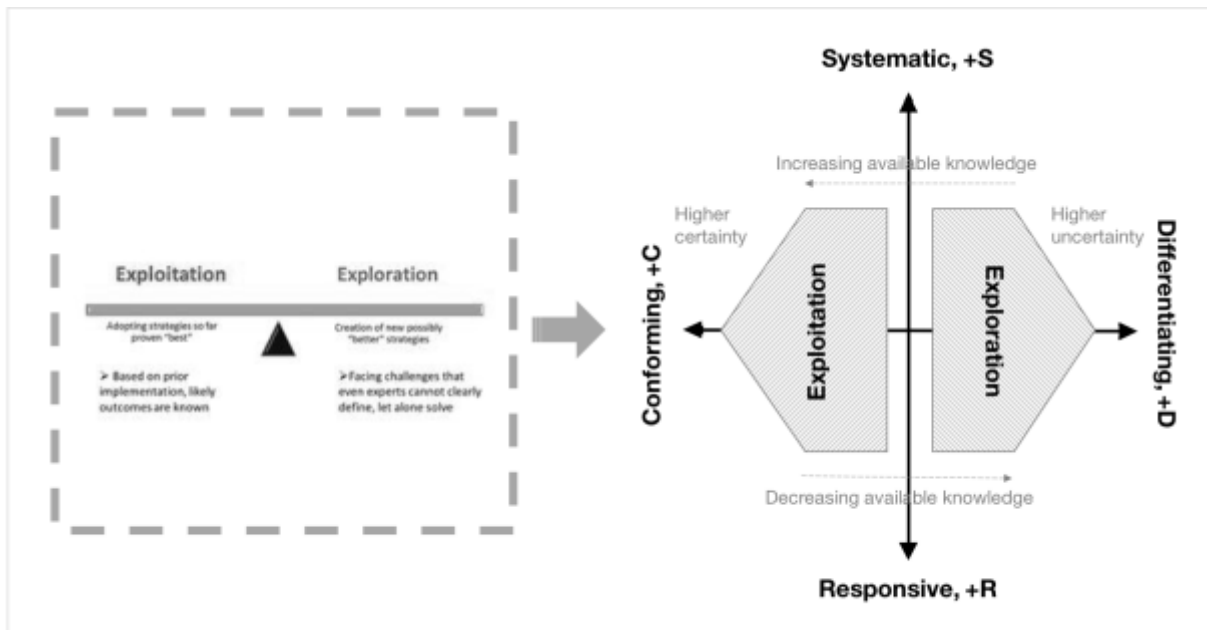
Figure 11.3. – March's (1991) Exploitation and Exploration mapped onto mapped onto the M³ modes

In this opening paragraph of his seminal paper on organizational learning and decision-making he also reveals the anchors of his work to be in economics as is evident with the Schumpeter and Kuran citations, as well as Holland's connection to complex and biological and artificial adaptive systems. Similar to Kahneman & Tversky we witness how even a decade later generally accepted mainstream economic theory still shapes the tenants of decision-making theory's evolution.

The other two management decision-making scholars contributing specifically to defining the Conforming (+C) vs. Differentiating (+D) modes, repeat much of the same pattern almost decade later (Katsenelinboigen, 1997) and also a little over two decades later (Nassim, 2012). For another score decision-theorist chose to anchor their contributions in terms of economics.

Decision theorist Aron Katsenelinboigen was actually an economist and introduced Predisposition Theory. With his indeterministic systems he describes the tensions between combinational style (+C) vs. positional style (+D) strategies in choice akin to strategies in a chess game. He defines it as follow:

> The combinational style features a clearly formulated limited objective, namely the capture of material (the main constituent element of a chess position). The objective is implemented via a well-defined, and in some cases, unique sequence of moves aimed at reaching the set goal. As a rule, this sequence leaves no options for the opponent. Finding a combinational objective allows the player to focus all his energies on efficient execution, that is, the player's analysis may be limited to the pieces

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directly partaking in the combination. This approach is the crux of the combination and the combinational style of play. (Katsenelinboigen 1997:64).

The combinational style chess is thus a very narrow, clearly defined, primarily material goal; and a program that links the initial position with the final outcome. Combinational style decision-making is thus synonymous with the conforming (or depending on your point of view, control) mode (+C).

Conversely, the decision-making style that is counter to combinational (+C) is positional style (+D) which creates a predisposition to the future development of the position, induces the environment in a certain way, absorbs an unexpected outcome in one's favour, and avoids the negative aspects of unexpected outcomes. It thus also described the principles behind the differentiating mode (+D). Katsenelinboigen described it as:

> Unlike the combinational player, the positional player is occupied, first and foremost, with the elaboration of the position that will allow him to develop in the unknown future. In playing the positional style, the player must evaluate relational and material parameters as independent variables. ... The positional style gives the player the opportunity to develop a position until it becomes pregnant with a combination. However, the combination is not the final goal of the positional player – it helps him to achieve the desirable, keeping in mind a predisposition for the future development. The pyrrhic victory[5] is the best example of one's inability to think positionally. (Katsenelinboigen 1997:86).

In spite of Kahneman & Tversky's definitions on the Systematic (+S) and Responsive (+R) modes are considered the best at describing the empirically observed thesis data, there still remains limitations causing Dual Process Theory (and Simon's Maximization addendums) to not constitute a comprehensive theory of Strategic Decision-Making under Uncertainty. The Positivist leanings of the theory also makes ample consideration for the subjective components of decision-making. Subjectivity, as Katsenelinboigen sees it, is an important factor in evaluating a predisposition. The roots of one's subjective evaluation lie in the fact that the decision-maker cannot be separated from the evaluator who evaluates the system in accordance with his own particular ability to develop it.

The more recent addition to the conforming (+C) and differentiating (+D) exploration is Nassim Nicholas Taleb Antifragility Theory (2012). It is built onto his

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[5] A **Pyrrhic victory** is a victory that inflicts such a devastating toll on the victor that it is tantamount to defeat. Someone who wins a Pyrrhic victory has been victorious in some way. However, the heavy toll negates any sense of achievement or profit.

Black Swan Theory (2007) which claims that a small number of unexpected, rare, unknowable black swan events actually has a major effect on systems in the aggregate. As the black swan theory relates to decision-making theory, Taleb introduces a new word for which he claims no comparable word existed: antifragility. He explains that *antifragility* is beyond resilience or robustness. The resilient resists shocks and stays the same (+C), the antifragility systems are not only positioned to absorb the shocks of black swan events but actually gets better as it is positioned to recognize and take action on new changes to the system. Antifragile systems thrive and grow when exposed to volatility, *randomness*, disorder, and stressors and love adventure, risk, and uncertainty (+D).

On a mathematical level Taleb defines antifragility as a nonlinear response:

> "Simply, antifragility is defined as a convex response to a stressor or source of harm (for some range of variation), leading to a positive sensitivity to increase in volatility (or variability, stress, dispersion of outcomes, or uncertainty, what is grouped under the designation "disorder cluster"). Likewise, fragility is defined as a concave sensitivity to stressors, leading a negative sensitivity to increase in volatility. The relation between fragility, convexity and sensitivity to disorder is mathematical, obtained by theorem, not derived from empirical data mining or some historical narrative. It is a priori" (Taleb, 2012: 19).

To date the concept of anti-fragility has been applied beyond megaproject inter-organizational collaboration, (*Ansar, Flyvbjerg, Budzier & Lunn 2016),* to also include diverse fields like physics (Ghodrat, Komaie-Moghaddam, & Podgornik, 2014), risk analysis (Derbyshire & Wright, 2014; Aven, 2014). molecular biology, (Grube, Muggia, & Gostinčar, 2013; *Danchin, Binder, & Noria, 2011),* transportation planning (Levin, Brodfuehrer & Kroshl, 2014; *Isted, 2014)*, engineering (Jones, 2014, Verhulsta, 2014), and computer science (Ramirez & Itoh, 2014; Abid, Khemakhem, Marzouk, Jemaa, Monteil & Drira 2014; Monperrus, 2014, Guang, Nigussie, Plosila & Tenhunen, 2014).

Yet, the combination of decision-making scholars March, Katsenelinboigen and Taleb's three-decade keystone framing and enhancement of the Conforming (+C) and Differentiating (+D) modes are still not considered substantial enough to independently account for the full complexity in strategic decision-making under uncertainty. Though March's starting point provides the best foundations for describing the empirically observed thesis data, there remains limitations causing Exploration vs. Exploitation theory to be combined with Dual Process Theory to

complete only the first two of three levels in constructing the more comprehensive Strategic Decision-Making under Uncertainty model and theory.

Limitations

The fact that Exploration vs. Exploration is in fact an organizational *learning* theory is not in itself a concern, but this thesis is advocating that a broader view on the theory can be adopted as it pertains to strategy and decision-making under uncertainty. The educational anchor actually illuminates and underscores role that learning, progress and development plays in increasing advanced levels of strategic decision-making under uncertainty. The importance of dynamism is similarly to the how as pointed out in the limitations of the Systematic (+S) vs. Responsive (+R) drive a relevant point that has yet to be addressed in the Exploitation (+C) vs. Exploration (+D) theory too. This component of emergence, development, adaption and transformation will be analysed at a deeper level with additional supporting theories in the final section of this chapter.

A second and central limiting component of the central theory is the fact that equal weight is not given to systematic (+S) vs. responsive (+R) learning. When using methodology that behaviourally observes the outcome of decisions it is not always apparent how deliberate or conscious a decision had been. Post behavioural discussion or interviewing can help, however rationalization is likely to occur in order to justify action to not be perceived as less intelligent. Long-term ethnological embedding with strategic decision-makers does allow the behaviour to have a before and after context. Archived documents before the behaviour would be another clue to the extent of the rationalization during the learning process.

A third limiting component of the higher density components of the theory that can ultimately be helpful in continuous advancement of the Strategic Decision-Making under Uncertainty model and theory is the numeric coding of organization learning. March assigns '0' to situations where the employee does not learn to adapt to the culture, and '1' coding when the employee adapts and integrate to a cultural function. This is tremendously helpful and clever to move the model into more complex iterations, however application wise for high level strategists or collaborations outside traditional hierarchies this simplistic view can be problematic for it assumes

that once an employee perceives or rationalizes 'the rules of the game' the automatic response is to integrate those rules. It is important to recognise that cognitively or intuitively seeing the pattern does not mean it is right or worthwhile to behaviourally integrate at the specific point in time that measurement is taking place. Taking this narrow presumes the employee to be an empty vessel robs us of the important role of intentional or unintentional 'choice' so integral to strategic decision-making under uncertainty.

A fourth limiting factor of March's specific framing on the subject is the focus on lower level employees as oppose to the higher level strategic decision-makers. With the focus, specifically on strategies Conforming (+C) may be a necessary strategy to prove and build in-group loyalty. This could be because thinking and responding to the immediate short-term protection is too important to lose or because the goal of the long-term future is too valuable to sacrifice now. Behavioural experiments would not provide insight to the strategic intent, only longer-term ethnographic embedment has a chance at gaining this insight. But fundamentally, more options are also available to higher level strategic decision-makers and thinkers, and that is why that would intentionally be made the focal area of this this thesis.

Broader Body of Literature

Similarly, to how analysing at the broader body of literature of neurology allowed for understanding the physiological mechanisms behind the Systematic (+S) and Responsive (+R) modes, so too non-social or even non-human biological functions of risk-taking explain the lower level non-cognitive components of risk taking (+D) vs. risk averse (+C) decision-making modes.

It has long been known that primates, birds, and social insects take fewer risks when faced with a steady supply of food. (Dener, Kacelnik et al, 2016). But when the supply is uncertain, they switch strategies and take more risks. What however had not been known until recently is that plants also exhibit capacity for conforming (+C) vs. differentiating (+D) decision-making (Dener, Kacelnik et. al, 2016).

Similar to a human stranded in a desert without resources to escape to greener pastures, plants also have capacity to become 'dynamic strategists' when resources are constrained. In a series of three experimental conditions, pea plants (*Pisum

sativum) were raised in a greenhouse. In the all conditions plants were grown with roots split between two pots. Each pot contained the same concentration and type of nutrients.

In the control condition 1 Pot A received constant high level of nutrients, and Pot B also received the same steady supply of high nutrients. In condition 2 Pot A received a constant high level of nutrients, however Pot B received variable levels. After 12 weeks, the plants' root mass was measured and their allocation of roots inside each pot. Not surprisingly, the plants were risk-averse, and grew most of their roots in the constant pot A.

However, in condition 3 Pot A received a constant but low amount of nutrients – so low, they were below what a plant needs to survive, and Pot B received variable levels similar to condition 2. After 12 weeks, researchers observed that the root allocation of the normally risk-averse, pea plants become risk-prone when growing in dire conditions.

Just like a human that may become more risk-prone under novelty seeking or saboteur conditions, less cognitively advanced living organisms without a nervous system alike may opt for risky alternative when confronted with conditions that challenges their own mortality, and consequentially change typical conforming (+C) patterns to differentiating (+D).

11.2.3. Summary

Ultimately the comparative juxtaposition of the opposing modes relative to one another in decision-making is not novel. Also, the fact that the phenomena emerged in various fields under various terminology is not a detractor but rather affirmation of the concept and its importance as scientists apply different lenses to the subject under investigation. The major theories outlined herein also does not claim to be an exhaustive list on the presented four modes but are considered major decision theories of importance.

What is however novel, is the overlay of different fields' theories overtop of one another to clarify the strength of the similarities. An even more important novel

contribution that this study seeks to make include the combination of specifically the modes of the x-axis and the y-axis.

Further confirmation of the specific combination making sense in the context of past theory building is the emergence of decision-making models that have emerged in decision theory and have been operating relatively autonomously from drives on account of the language not yet overlapping necessarily in decision theory and certainly not in sub-fields classifications. In the next section, we seek to explore additional evidence of these overlaps.
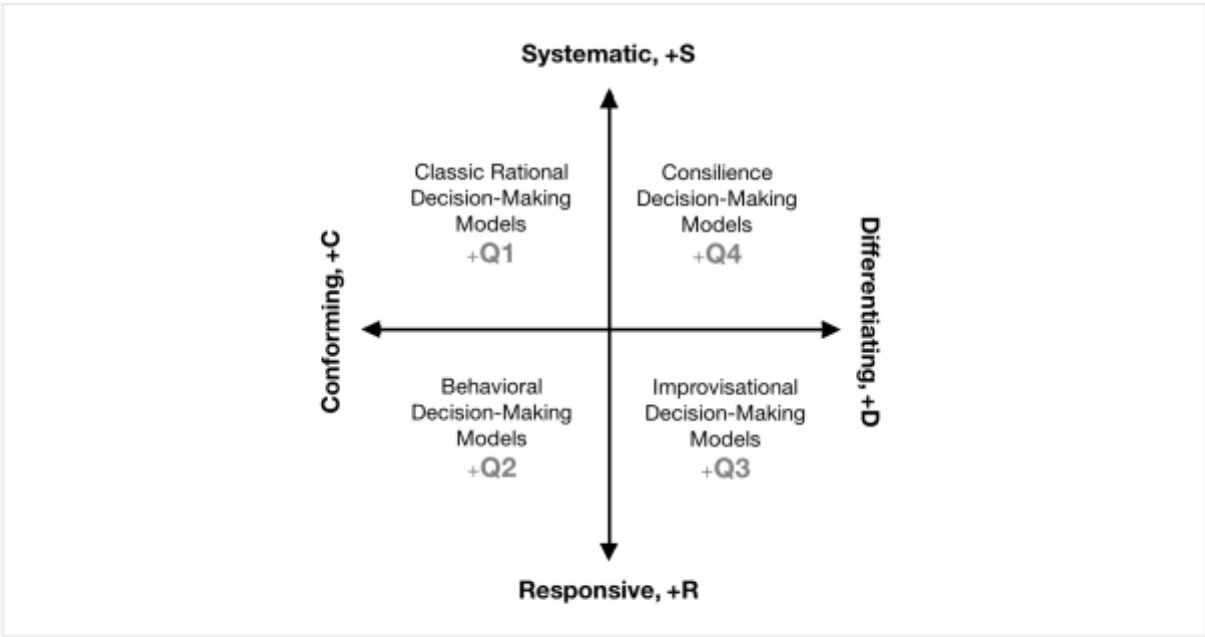
Figure 11.4. – M³ Strategic Decision-Making Uncertainty: Models

11.3. Strategic Decision-Making under Uncertainty Models

By then combining adjacent modes a multi-dimensional model that can be viewed relative to other strategic decision-making under uncertainty models emerges. As presented in figure 11.4 these broad models overlap so strongly with the theories presented in chapter 2, that similar names will be used to signify that scaling up or down from a specific lens zoom will reveal similar fractal properties. This suggests that future research into the micro, mezzo and macro levels of the theory may also be worth pursuing.
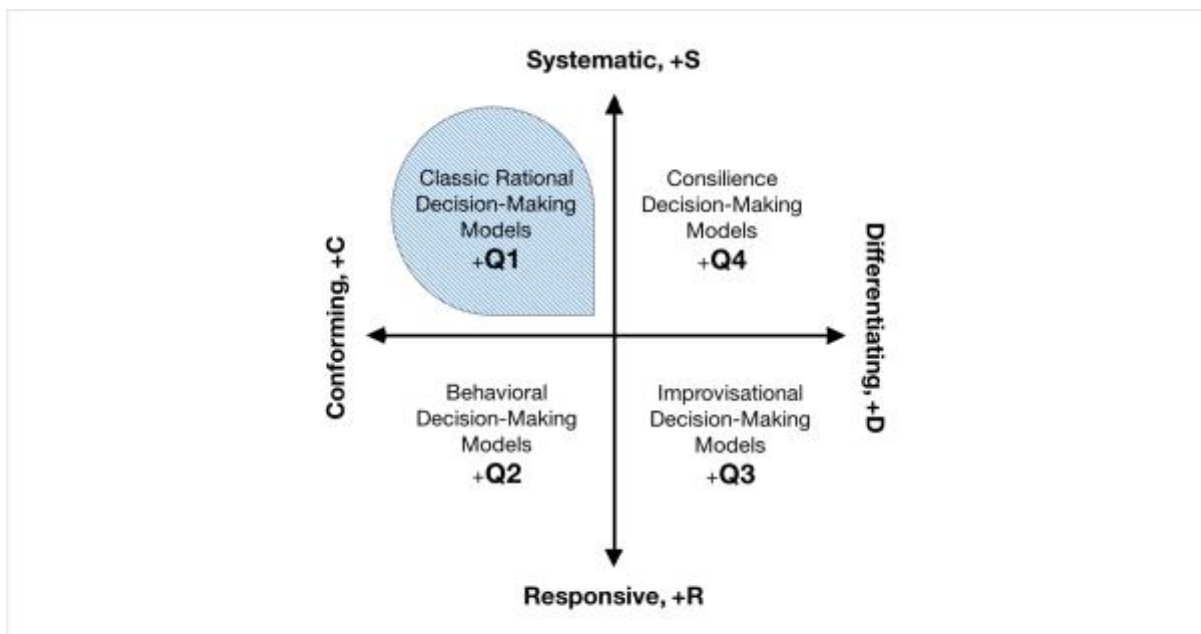
Figure 11.4.1. – M³ Strategic Decision-Making Uncertainty: Classic Rationality Models

11.3.1. Classic Rationality Models (+S, +C)

In Chapter 2 this thesis introduced and explored Classic Rationality the traditional lens through which decision-making under uncertainty is commonly explored for the past four plus centuries. Though it aligns very strongly with the criteria generally set up for natural scientific discovery it is also insufficient in dealing with the higher levels of uncertainty commonly associated with innovation and creativity. Ultimately Collaboration 1 (MNC Legal Counsel) paints a vivid picture of this model in action specifically via the Delphi method of highly rational deliberations.

By integrating the strengths associated with systematic (+S) and conforming (+C) socio-cognition this type of strategies allow for technocratic strong predispositions. It is ideal for highly trained professionals focusing in on specific smaller components or subcomponents of a bigger complex problem. This part of a strategy may specifically be defined as a "piece of of a bigger elephant" that needs to be concurred in order to ultimately "eat a whole elephant by focusing on one bite at a time." What these classic and common classic rationality models would be less helpful with is dealing with the responsive (+R) or differentiated (+D) advantages that come from being in the moment and reading new information in real-time, or those types of innovation for which historic data and context may not inform on deeply because the precedent has been unexplored. Figure 11.4.1 represents how the Classic Rationality Models (+S, +C)

appear relative to the other options for strategic decision-making under uncertainty identified to date.

The 5-Step Rational Decision-Making Model

This Classic Rational model fits a five-step decision-making process. In the process of choosing a course of action for dealing with a problem or opportunity five steps are taken constituting the ideal aspirational model:

1. *Recognize and define the problem or opportunity* – gather information and deliberate in order to specify exactly why a decision is needed and what it should accomplish.
2. *Identify and analyse alternative courses of action* – evaluate possible alternative courses of action and their anticipated consequences for costs and benefits.
3. *Choose a preferred course of action* – a choice is made to pursue once course of action rather than others.
4. *Implement the preferred course of action* – actions are taken to put the preferred course of action in to practice.
5. *Evaluate the results and follow up as necessary* – performance results are measured against initial goals and both anticipated and unanticipated outcomes are examined.

Classic rationality is ideal in scenarios with higher levels of complete information, time and/or computational power where the decision-maker moves through the steps one by one in a logical and linear fashion. It also neatly lends itself to various quantitative decision analysis as well computer-based applications (Boutilier, 2015).

- This thesis specifically sought to define a continuum upon which lower uncertainty boundaries with the resources and tools defined within this classic rationality model group is distinct from the higher uncertainty boundary as may be more prevalent in longer run optimization. This adjacent category of rationality will be referred to as *hyper rationality* in the context of this thesis and the extension is comprehensively discussed in the Consilience Decision-Making under uncertainty models (+S, +D) – See 11.4.4.
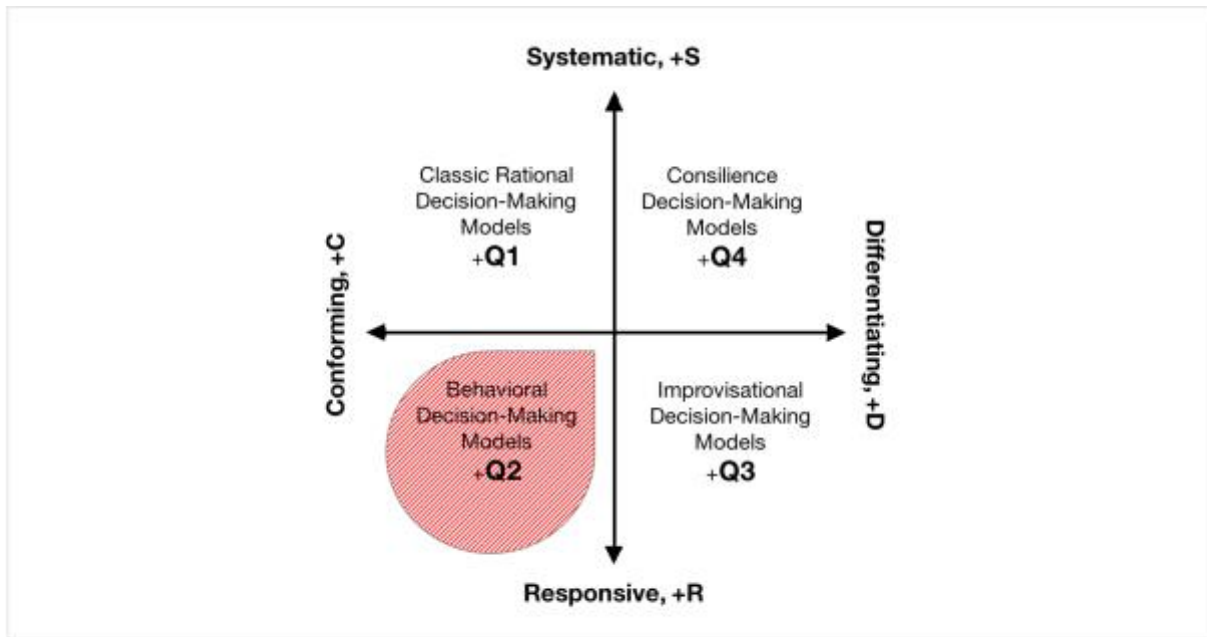
Figure 11.4.2. – M³ Strategic Decision-Making Uncertainty: Behavioral Economics Models

11.3.2. *Behavioural Economics Models (+R, +C)*

In Chapter 2 this thesis also introduced and explored Behavioural or Bounded Rationality as a newer lens through which decision-making under uncertainty has been explored since the 1940s. This is pales in comparison to the four centuries of contributions to Classic Rational Models (+S, +C) yet has a well-established seat at the table when it comes to decision-making under uncertainty, especially in social context. Ultimately Collaboration 2 (Higher Education) collaboration showcased many of the strong influence formal and passive meetings and workshops have on getting stakeholders to conform and become increasingly accepting of a new inititative that could also be perceived as threatening to the status quo of established order and power norms.

By integrating the strengths associated with systematic (+R) and conforming (+C) socio-cognition this type of strategies allow for pragmatic strong predispositions. It is ideal for strategists with the advantage of being perceived as being higher on a hierarchy. The key though is that the followers also need to be receptive to the type of capital or the exchange. This is thus harder to accomplish successfully when outsiders or intergroup dynamics are established that make power structure ambiguous or a power struggle ensue.

Power brokers channelling the energy of the masses in "picking low hanging fruit" is one of the stronger metaphors to describe this type of strategy that relies less on technical expertise but rather responsiveness of duplicate peers' lenses and thereby magnifying the effect of followers that buy into behavioural models.

Like the Classic Rational models the Behavioural strategy models is ideal for more predictable outcomes on account of the emphasis on innovation what is already in existence that can be magnified. Figure 11.4.2 represents how the Behavioural Models (+R, +C) appear relative to the other options for strategic decision-making under uncertainty identified to date.

The Behavioural Challenges to the 5-Step Rational Decision-Making Model

The behavioural decision-making model thus fundamentally challenges the rational decision-making five-step model. In the process of choosing a course of action for dealing with a problem or opportunity five steps are taken constituting the more commonly applied model:

1. *Recognize and define the problem or opportunity* – the behavioural model contends that most often problems are not clearly defined.
2. *Identify and analyse alternative courses of action* – the behavioural model contends that knowledge is limited on possible alternatives and their consequences
3. *Choose a preferred course of action* – the behavioural model contends that satisficing takes place. This is when generation of alternative solutions seizes once the first alternative that appears to give an acceptable or sufficiently satisfactory resolution to the problem is generated.
4. *Implement the preferred course of action* – on a timeline considerably faster than the classic rationality model.
5. *Evaluate the results and follow up as necessary* – the behavioural model contends that post-implementation biases exist.

Bounded rationality is ideal in scenarios with lower levels of complete information or information overload, and/or time constraints that limits the decision-maker's ability

to moves through linear decision steps one by one in a logical fashion. It lends itself more to qualitative decision analysis as well astute politics.

- This thesis specifically seeks to define a continuum upon which lower uncertainty boundaries with the resources and tools defined within this behavioural model group is distinct from the higher uncertainty boundary as may be more prevalent when behaviour is less inclined to conform to greater collective's expectations or demands and instead focus inwards towards a smaller subsection. This adjacent category of rationality will be referring to as *improvisation* in the context of this thesis and the extension is comprehensively discussed in the next section Improvisational Decision-Making under uncertainty models (+R, +D) – See 11.4.3.
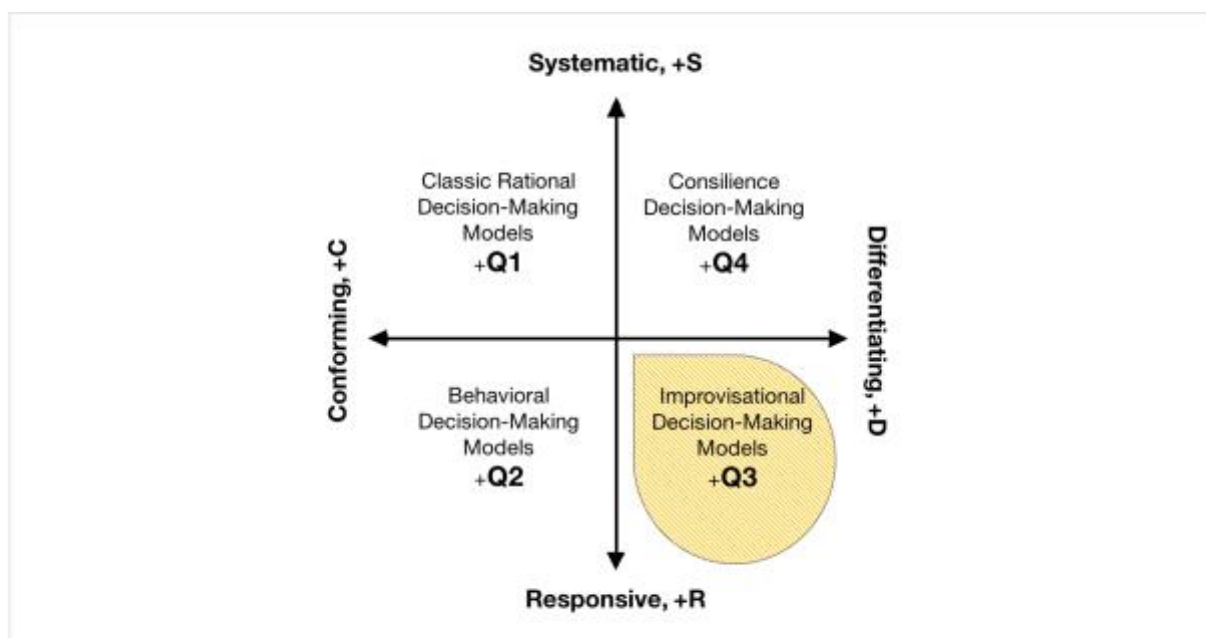
Figure 11.4.3. – M³ Strategic Decision-Making Uncertainty: Improvisational Models

11.3.3. *Improvisational Models (+R, +D)*

In Chapter 2 this thesis also introduced and explored basic tenants of Improvisational Models as lens that is even newer than the Behavioural lens. The study of improvisation in context to the arts, drama, comedy, music and public speaking have been studies for centuries, but in the context of Management, it is less than 20 years old. It is also not formally linked to decision-making under uncertainty theory yet epitomizes the qualities. Ultimately it was Collaboration 3 (Economic Development) and Collaboration 4 (Software Start-up) that tried to capitalize on this lens with interesting progressions.

By integrating the strengths associated with responsive (+R) and differentiating (+D) socio-cognition this type of strategies allow for strong creative predispositions. It is ideal for strategists capable of facilitating and empowering stakeholders with technical expertise outside of the field, and also have capacity to read and respond to vocabulary and objectives of a new field. The need for relinquishing power and making public failing safe is critical in this strategy model. So is learning fast.

Unlike the Classic Rational and the Behavioural strategy models, Improvisational models are ideal in situations that is capable of absorbing higher levels of innovation capable of cannibalizing something else that had been of value once before. Figure 11.4.3 represents how the Improvisational Models (+R, +D) as it appears relative to the other options for strategic decision-making under uncertainty identified to date.

Improvisational Theorists' Challenges to the 5-Step Rational Decision-Making Model

To date no overarching comparative model has been produced to juxtapose '5-step thinking processes' between improvisation and rationality or bounded rationality. By recombining a number of design thinking, and other innovation theorists' work, a 5-step improvisation framework is expected to present along the following lines:

1. *Recognize and define the problem or opportunity* – the improvisational model would possibly most strongly contend that most often problems are defined to align with the most powerful player at the table's interests. In Design Thinking workshops, powerful community leaders or corporate CEO's my intentionally be excluded from the (early portions) of the process to ensure the voices and problem framing of those with less power get a chance to be articulated.
2. *Identify and analyse alternative courses of action* – the improvisational model theorist specializing in innovation would possibly contend that a purposeful pursuit should be made to illuminate positive deviance samples or outliers to illuminate when exceptions occur that could possibly be reconstructed (Miller & Wedell-Wedellsborg, 2013).
3. *Choose a preferred course of action* – the improvisation model would likely challenge the objective itself. One way would be to revisit the fundamental intent with reframing the objective using different lenses. One dominant improvisational strategy mode would be to actively seek to prioritize that

which cannot be objectively quantified numerically and configured via an equation. This would be akin to Deming's one of *Seven Diseases of Management* decision-making that claims that factors that cannot be quantified often also deserve a priority consideration (Deming, 1986).

4. *Implement the preferred course of action* – the improvisation model would ultimately also prioritize *strategic doing* (Morris, 2003) as empowered technicians take action with immediacy on that which they have control over as opposed to actions that require long lead time and extensive setup in order to move fast with momentum.

5. *Evaluate the results and follow up as necessary* – the improvisation model contends that the evaluative result was never intended to be perfect but instead be a minimum viable prototype to learn from for future iterations as perfection and competence is increased over time (Ries, 2009).

This thesis specifically sought out ways to provide empirical evidence distinguishing between improvisational decision-making models and describing the impact improvisation specifically has in the broader context of a long-term initiative as it pertains to emergence, change, adaptation and transformation. This study also sought to define the tools and resources to promote or diminish it, as well as exploring its interconnectedness with other strategic decision-making under uncertainty models.
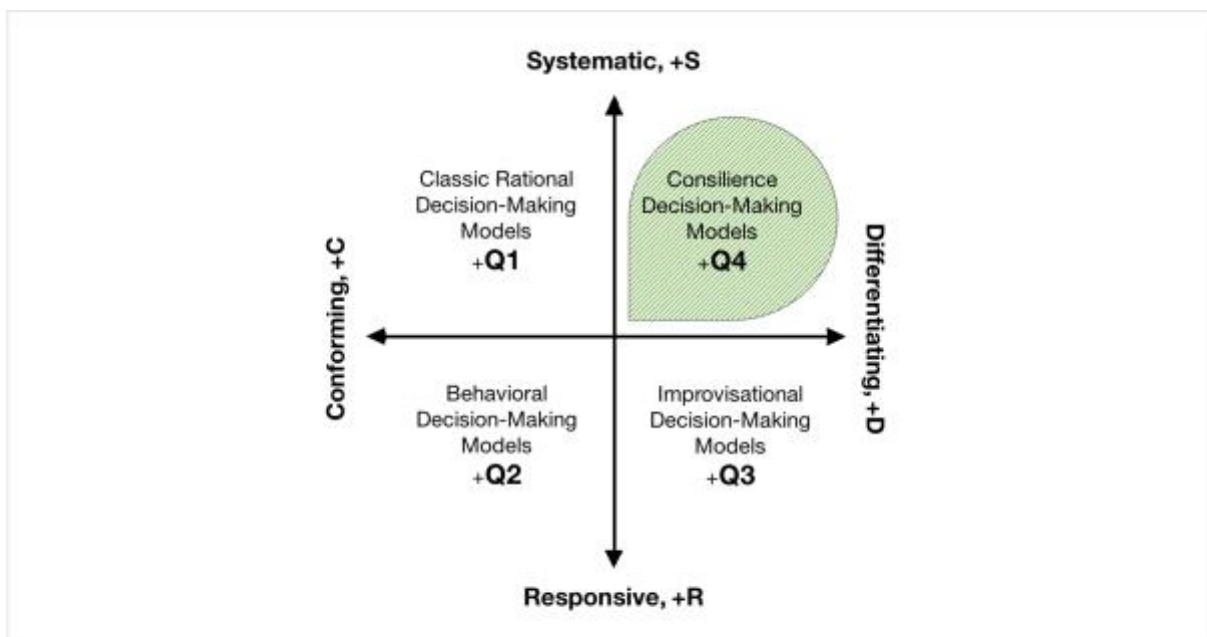
Figure 11.4.4. – M³ Strategic Decision-Making Uncertainty: Consilience Models

11.3.4. Consilience Models (+S, +D)

In Chapter 2 this thesis also introduced and explored basic tenants of Consilience Models as a lens with a very complex historic starting point and is yet to be introduced into Management literature. It is in pure philosophy (Whewell, 1840) and within the past two decades biology (Wilson, 1997) where the concept has been launched and relaunched into the mainstream psyche, but until today remains underdeveloped in Management. Like Improvisation, Consilience is also not formally linked to decision-making under uncertainty theory yet it also epitomizes the qualities. Ultimately it was Collaboration 5 (Health Care) that relative to the other ethnographies gave this thesis the clearest insight into this integrative problem solving that can scale and grow without power used for dominance but instead for empowerments.

By integrating the strengths associated with systematic (+S) and differentiating (+D) socio-cognition strategies this type of decision-making also allow for strong creative predispositions. It is ideal for strategists capable of facilitating and empowering stakeholders with technical expertise outside of the field, and also have capacity to for deep learning of systems and objectives from outside a collaborator's dominant field of expertise. But instead of needing to relinquishing power and making public failing safe, consilience is driven by empowering diversity on a unified platform and systems of absorbing escalating scale.

Like Improvisational models, consilience models are ideally positions to benefit from change and shocks to a predictable system. But instead of cannibalizing a player in the market the cannibalization in consilience models may seek to destroy and rebuild for greater capacity within its scope of impact. Figure 11.4.4 represents how the Consilience Models (+S, +D) as it appears relative to the other options for strategic decision-making under uncertainty identified to date.

Consilience vs. Classic Rationality Models and Theories

Like classic rationality and behavioural decision models and theories, the consilience model also fits the five-step decision-making process. but is more likely to be applied retrospectively to make sense of collective values that does not fit the norm. The name of the model currently in use that constitutes Consilience decisions-making

under uncertainty is called Ethical Reasoning and Decision-Making (Acevedo, 2009). In the process of choosing a course of action for dealing with a problem or opportunity five steps are taken constituting the ideal aspirational model:

1. *Recognize and define the problem or opportunity* – check the underlying moral problems or dilemmas needing ethical analysis.
2. *Identify and analyse alternative courses of action* – check implications for stakeholder utilities, common good, justice caring and virtuous life.
3. *Choose a preferred course of action* – check that the choice reflects the best ends and uses the right means.
4. *Implement the preferred course of action* – check consistency and integrity a=of actual actions verses intended actions.
5. *Evaluate the results and follow up as necessary* – check actual ends and means versus desired ends and means.

This thesis specifically seeks to provide empirical evidence distinguishing between Consilience decision-making models and describing the impact Consilience specifically has in the broader context of a long-term initiative as it pertains to emergence, change, adaptation and transformation. This study also seeks to define the tools and resources to promote or diminish it, as well as exploring its interconnectedness with other strategic decision-making under uncertainty models.

11.3.5. Summary

Ultimately each of the four discussed theoretical lenses introduced in Chapter 2 also emerged as dominant models by which the five ethnographies approached their problem-solving relative to one another. Additionally, these same categories" recombination of adjacent modes make up its more complex characteristics.

Most fundamentally however is the fact that the most dominant theories of decision-making under uncertainty that has already been tied to less innovative strategies whereas the fundamental benefits that can be had from decision-making under uncertainty is indeed the unexpected, novelty and higher risk propositions that can also pay off the biggest rewards.

But despite the empirical data discovery and literature overly, there is still a component that is unaccounted for. This component was a very central point at the onset of the thesis as far as the emergence, change, adaptation and transformation of strategic innovation is concerned. Further integration of management concepts will be needed. For the purpose of this model the academic literature base of change management and strategy will be the core important contributors to evolve the strategic decision-making under uncertainty model to yet another level of sophistication.

11.4. Dynamism

Colloquially the responsive drive (+R) is also referred to as the reptilian brain, or primitive mind, so that the systematic drive (+S) can be perceived as distinct from the biologically more evolved rational human decision-making capacity. This is however a less helpful analogy. Humans, primates and birds are all capable of using both drives. Just like it is generally accepted that primates and birds raised for longer periods by their parents have a higher capacity for systematic problem solving and decision-making (+S) (Dener, Kacelnik et al, 2016), so too humans are capable of the higher-level capacity "theory of mind" and empathy (+R) relative to birds and fishes.

As discussed in the broader literature surrounding the other two opposing drives, Conforming (+C) vs. Differentiating (+D), there is also evidence of lower level evolution life forms like plants have capacity for making non-cognitive decisions under uncertainty (Dener, Kacelnik et al, 2016). In the context of Charles Darwin's general framework for comprehending the process whereby small, random variations could accumulate and predominate over time into large-scale changes resulting in the emergence of wholly novel forms ("speciation") has thus yet to be addressed by any of the preceding decision-making under uncertainty drives or models outlined.

However, from the theories and models thus far one could stands to reason that over time as the species procreate, the individual human ages, and as a collective as a humanity, a society, a discipline or an organization ages the level of complexity and sophistication of each of the drives (as well as the models) would also have the capacity to improve (or die out) in its strategic decision-making under uncertainty.

11.4.1. *Evolutionary Economics*

The eminent social science theory that constructed a theory of how change occurs on atop of Charles Darwin's theory of biological evolutions, is Richard Nelson and Sidney G. Winter (1982). In their Evolutionary Economics framework, they present the facilitating factors that drive changes as routines (+C) and technology (+L).

Specifically framed in the context of organizations and management studies Nelson & Winter (1982) defines routines (+C) as mechanisms used as (or play a role as) a form of organizational control. Routines thus strongly aligns with the Conforming (+C) decision-making drive. But beyond that, as Nelson & Winter (1982) engages with discussion on how firms replicate and destroy routines, and discuss briefly how firms can "learn" new routines through imitations of other routines, which allows for factors associated with "new routines" to be considered there is thus also a discussion in the role that Differentiation (+D) plays in driving change before it ultimately moves back to Conforming (+C). With Evolutionary Economics, the thesis has thus now officially connected with a behavioural decision-making theory that can also start to account for dynamism.

With reference to discussing the catalyst that opens the door to short-term Differentiation (+D) so that a *new* Conforming (+C) norm can be created, Nelson & Winter (1982) introduces 'technology'. In the book's introduction Winter specifically expresses an interest in realities of firm decision-making, and claims that the most important relate to improved understanding of technological change and the dynamics of the competitive process.

This thesis' vantage point is considerably wider than technological change but for its connection to the empirical data and the purpose of establishing a solid baseline on the dynamics component, this connection to innovation and strategy is strong enough to accept the more physical manifestation of the more abstract and broader concept of [perceived] knowledge. Nelson & Winter recognizes this too when speaking about 'change technology':

> However, the connotation clearly is of knowledge "of a way of doing something" or "technological knowledge." Technological knowledge often is identified with a "book of blueprints" or with the knowledge of engineers and scientists. (Nelson & Winter, 1982: 60).

This 'technology of knowledge' is thus a good representation of increasing levels of complexity and advancement (+L) but also a metaphor for representing the chaos and uncertainty associated with 'constant change'. It also represents innovation and uncertainty that result based on the drives which could be influenced from both inside or outside the organization or field.

As pictured in Figure 9.8. the phase transitions brought on by stepping up on 'technology of knowledge' levels of decision-making under uncertainty can be referred to as Levels (+L). These would be "best of" blueprints and as will be discussed in detailed context of Nelson & Winter's limitations this applies equally to social and technical (non-social) engineering and experimentation as simplified representation the Fibonacci as radiating circle on the four drives.
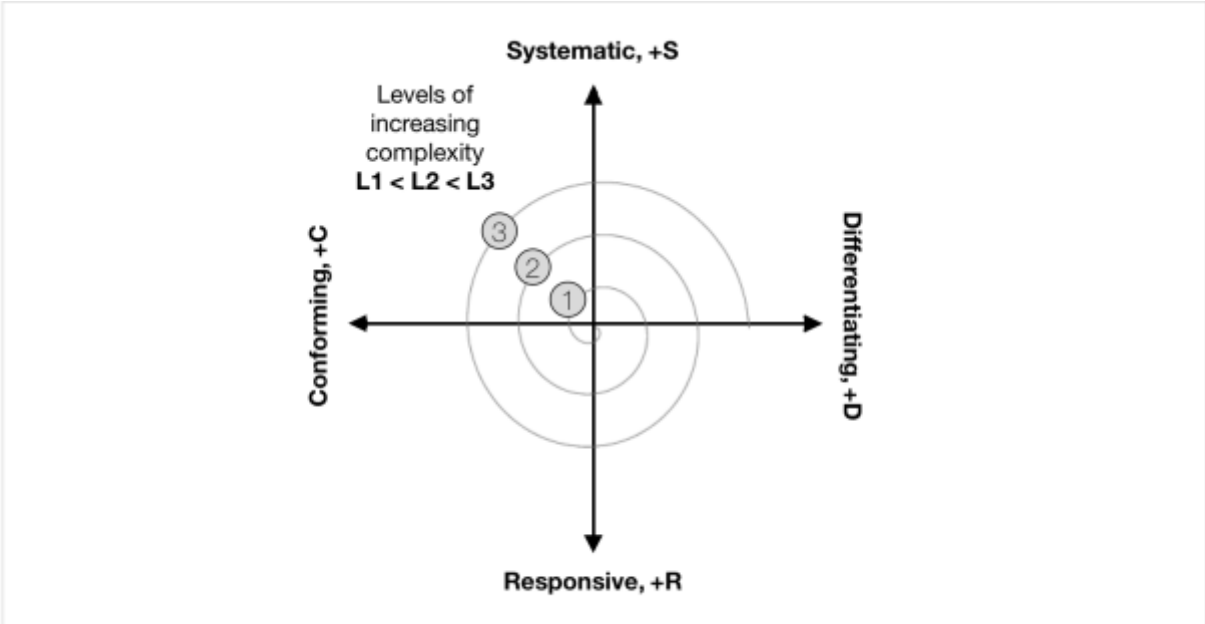
Figure 11.5. – M³ Strategic Decision-Making Uncertainty: levels in momentum

Pre-dating Nelson & Winter's (1982) Evolutionary Economics theory were organizational management strategy scholars like Mintzberg's (1978) emergent strategies (+R, +D) which was improved highly relevantly for this specific Decision-Making under Uncertainty Model by Moncrief's (1997) Strategy Dynamics (+R, +C) to explain the dynamic interplay between the systems (or quadrants) driving development in relation to classic rational decision-making baseline expectation (+S, +C) that to this day dominates expectations of decision-making norms (in spite of Nelson & Winter's strong arguments against it being the prevailing methods that should be taught or used by strategic-decision makers).

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As the name would suggest Evolutionary Economics like strategy and decision-making theory suggest it did not only used evolutionary methodology of Charles Darwin to evolve concepts around non-equilibrium economic principles of circular and cumulative causation. It ventured yet deeper into economics or rational decision-making as Karl Marx based his theory of economic development on the premise of evolving economic systems; specifically, over the course of history. By the time Nelson & Winter started to deconstruct the theory they however made a concerted effort to differentiate how the theory is different from classic economics classifying themselves as 'behavioural' economists, because society at the time still perceived 'economics' to be a superior and more dominant science. In the context of where and when this thesis was written behavioural science is in fact the dominant field, and for that theories are framed accordingly.

Limitations

In context of arguing the superiority of behavioural economics over neo classical economics Nelson & Winter frames innovation through the combination of new routines, through reactions to changing or changed environments or to failure, and as a set of heuristics that can result in routine strategies. This connects very well to the 'strategic stances' that were coded and confirmed by participants at various intervals in the ethnographies. However, heuristics may be an excellent word to use with "blueprints of knowledge" in the context of complex social systems at this time of humanity's evolution, however in the context of technical systems there may be enough man-made technical and nature-made engineering absolutes even in decision-making under uncertainty that the detailed code does exist in the backend. To continue the metaphor humans are just dealing with a desktop shortcut interface but if we go into the backend programming a full and comprehensive, well tested essentialist code is in fact in place. This does not dismiss or diminish Nelson & Winter's position on heuristics being used, this broader perspective on a strategic stance simply allows for knowledge to be viewed as social realism to be simultaneously subjective and objective.

Cognitive science theorist Donald D. Hoffman (2000) also takes a similar concept to the next level. With computer generated evolution simulations outcomes illustrate

that it is not perceiving 'reality' but perceiving 'fitness functions' that provides better (mathematical functions) that describe how well a given strategy achieves the goals of survival and reproduction. Understanding the strive towards the creation of this optimal fit for balance and momentum in a specific time and space is then also an important contribution that this thesis seeks to make. This also ties to the ultimate objective of the thesis as it starts to address the dynamic interplay where changes and upgrades get made to improve fit with the specific situation's resources and perceived window of opportunity.

The second limitation also deals with a fundamentally behavioural perspective that could possibly benefit from a broader vantage point. Framing routines and control (or power) as a dominant state may also not be incorrect, but in asking the question why social power, control, routines are framed as a primary objective (+R, +C) is it possible that an even stronger starting point could be that 'maximizing future options' under uncertainty? Considering "maximizing future options" is inclusive of behavioural decision-making (+R, +C) strategic stances but is also an expansive framework that translates especially well to rational decision-making (+S, +C), but also hyper rational decision-making (+S, +D), and even improvisational decision-making (+R, +D).

The Wissner-Gross and Freer's (2013) theory starts to address this concept of "maximizing future options" by assuming entropy which means a system will evolve towards disorderliness (+D) which stands in striking contrast to the predominance in modern organization theory of control and conform (+C). And in this struggle, may lie yet another strength of the theory in generating momentum. But ultimately it is the strive for increasing level of complexity in order to be able to take on more possible futures that holds the most promise as every ring level (L1 < L2 < L3... Ln) moving away from the centre represents higher levels of complexity.

A simple example can be summarized in the popular online game *Googlewhack*, an internet game for finding a Google search query consisting of exactly two words found in a dictionary, but returns exactly one search hit. The concept quickly burst into mainstream lexicon. In the short span of just three years the term went from obscurity to a Sunday Time #1 best-selling book title and comedy tour in the UK. The concept however was a short-lived because with every online discovery and

publication of a Googlewack term the game was cannibalizing itself into extinction. In pursuit of developmental and evolutionary strategic decision-making under uncertainty this thesis is in pursuit of the antithesis of the Googlewack movement and specifically is in pursuit of solutions that create more options long-term.

The third limitation, and the reason Evolutionary Economics similarly to Dual Process Theory, and Exploration and Exploitation cannot stand alone to constitute the important components and dimensions of the Strategic Decision-Making under Uncertainty model is in spite of the strong illumination on the changing aspects surrounding decision-making (+L) low definition is given to that which is not a routine (+C) as is represented in the Strategic Decision-Making under Uncertainty's differentiation drive (+D). And though the differences between behavioural decision-making (+R, +C) and rational classic economic decision-making (+R, +C) are clearly highlighted (thus illuminating half of the model) this thesis is working towards remaining neutral on the superiority of any philosophical stance without the context of specific resources and objectives.

The final limitation is that the model does not explicitly explore its own application beyond the organizational level (macro). Though twenty-two years later a general theory of the evolutionary economics process has been proposed by Kurt Dopfer, John Foster and Jason Potts (2004) as the micro mezzo macro framework, thus demonstrating it is possible, the Strategic Decision-Making under uncertainty seeks this nested emergence to be central in the construction of a cyclical recursive process describing the emergence, adaptation, change and transformation.

Broader body of Literature

Heightening the importance of recognizing that the internal and external environment is not stable, and will likely continue on a trajectory of volatility where change needs to be contend with is a recent study by Reeves, Levin & Euda (2016). In a longevity study of more than 30,000 public firms in the United States over a 50-year span, the team concluded that businesses are disappearing faster than ever before. They predict that a public company has a one in three chance of being delisted in the next five years, whether because of bankruptcy, liquidation, M&A, or other causes. That's six times the delisting rate of companies 40 years ago. Although

corporations may be perceived as enduring institutions, they now die, on average, at a younger age than their employees. And the rise in mortality applies regardless of size, age, or sector. Neither scale nor experience guards against an early demise.

The broader literature of change management (CM) in Management Studies is also relevant here as the models contained therein offersapproaches to transitioning individuals, teams and organizations to a desired future state (Kotter, 1998). Like decision-making under uncertainty this can be a descriptive and/or prescriptive process to frame the people and organizational factors that provide the catalyst to change. The reason many of these theories are not used as an anchor theory for Strategic Decision-Making under Uncertainty is because it originates in management predominantly for the purpose of controlling (+C) groups of people and does not necessarily address the differentiating (+D) side. Change Management theories that originate in psychology proves the exception to this case as they are very sensitive to external traumas instigating a period of change, however the limitation with many of the psychology change theories are that they focus on the micro level whereas this model is seeking to move between the micro, mezzo and macro scales.

The structure of developmental theories also offers some insight into how the different drives interact if we overlay generally accepted organizational development theories over that of the strategic decision-making under uncertainty model and theory. Generally, what developmental theories have in common is that development and progress occurs in ordered stages and in different areas simultaneously (Grivas & Carter, 2004). It is ultimately this combination of different areas making progress at the same time that also give rise to emergence. As in the case of organizational development theories, the growth is not likely to occur in a linear fashion, but in stages of increasing maturity, consciousness and complexity many similar changes could be observed at the micro (individual), mezzo (organizational) and macro (societal) level.

Similar to the decision theories discussed so far various development scholars have also assigned different vocabulary to these stages. Appendix E outlines and codes 25 development theories in context to the Strategic Decision-Making under Uncertainty drives framework. In the context of management and organizational stages of development the first four stages are described as follows (Laloux, 2014):

Stage 1: The organization as a Wolfpack

Historically the most primitive form of real organization occurred in the form of small conquering armies. Philosophically their strategic stances favour more crude, often violent groups. Organizations at this stage of development tend make decisions under uncertainty that regards the world as a tough place where only the powerful (or those they protect) get their needs met. This was the origin of *command authority*. The chief, like the alpha male in a wolf pack, constantly inspire fear to keep underlings in line, and makes decisions down familial bond lines.

Today's stage 1 organizations are often entities at the fringes of the law. Street gangs, terrorist groups, and crime syndicates are often organized along these lines. In these organizations, the boss shares the spoils as he or she pleases, buying allegiance through reward and punishment. At the micro level, the individual leader frames strategic decision making under uncertainty around: "How can I use my power to dominate?"

- In the context of the Strategic Decision-Making under Uncertainty model and theory the stage 1 wolf pack organization is synonymous with the improvisation quadrant (+R, +D) on account of the wolf pack's capacity for nimble course correction and blind trust of authority figures because of the raw power they yield based on brutality or bloodlines that ties the group together. No elaborate rationalization is needed in the process of change because followers are driven by fear (+R). Differentiation in today's society happens in the context of operating on the fringes of law (+D).

Stage 2: Organization as an Army

In the successive stage people learned to increase self-discipline and self-control, internalizing the strong group norms. Do what's right and you will be rewarded, in this life or the next. Do or say the wrong things, and you will be excommunicated from the group.

The Catholic Church is an archetypal stage 2 organization, complete with a static organization chart linking all levels of activity in lines and boxes, from the pope at the

top to the cardinals below and down to the archbishops, bishops, and priests. They thrive on order, control, and hierarchy. In organizations, the same principles characterize the second stage. The fluid, scheming wolf pack–like organizations give way to static, stratified pyramids.

Today, this hierarchical and process-driven model is visible in large bureaucratic enterprises, many government agencies, and most education and military organizations. In stage 2 organizations, thinking and execution are strictly separated. People at the bottom must be instructed through command and control. In the stage 2 organization salaries are tightly linked to a person's level in the hierarchy ("same rank, same pay") and there are no incentives or bonuses. At a micro level the individual leader asks: "How can I maintain or increase my power?"

- In the context of the context of the Strategic Decision-Making under Uncertainty model and theory the stage two army is synonymous with the behavioural decision-making models (+R, +C) on account of the strong hierarchical structure and process created by socially constructed formal structure of organizational charts that explains how employees need to conform (+C) who's power they need to be responsive to (+R).

Stage 3: Organization as a Machine

Starting with the Renaissance, and gaining steam with the Enlightenment and the early Industrial Revolution, a new management concept emerged that challenged its agrarian predecessor. In stage 3, the world is no longer governed by absolute, God-given rules; it is a complex mechanism that can be understood and exploited through scientific and empirical investigation. Effectiveness replaces morality as the yardstick for decision making: The best decision is the one that begets the highest reward. The goal in stage 3 organization is to get ahead, to succeed in socially acceptable ways, and to best play the cards one is dealt. This is arguably the predominant perspective of most leaders in business and politics today.

The commanding people also evolves: Give people targets to reach, using freedom and rewards to motivate them. Over the past century in this includes the majority of strategy models and theories as will be discussed in detail in Chapter 4. It also led to

the creation of modern HR practices, budgets, KPIs, yearly evaluations, bonus systems, and stock options giving rise to the idea of *meritocracy*.

Today Stage 3 organizations can be found on Wall Street and Main Street and companies offer individual incentives to reward star performers. At a micro level the individual stage 3 leader looks at the world very much in competition with others: "How can we win?"

- In the context of the context of the Strategic Decision-Making under Uncertainty model and theory the stage two army is synonymous with the rational decision-making models (+S, +C) on account of the strong focus on systematic and programmed processes that drive prosperity. Processes are conformed to not because of social pressure but outcome driven pressure (+C). Also, the perception that objective truth and values can be quantified.

Stage 4: Organization as a Common Pool Resource

Postmodernity brought yet another world view. Stage 4 stresses cooperation over competition and strives for equality, solidarity, and tolerance. Stage 4 organizations, which include many non-profits as well as companies such as Southwest Airlines, Starbucks, and the Container Store, consider corporate social responsibility the core of their mission. They serve not just shareholders but all stakeholders, knowing that this often results in higher costs in the short term, but better returns in the end.

Stage 4 leaders have championed the soft aspects of business — investing in organizational culture and values, coaching, mentoring, and teamwork — over the hard aspects of strategy and budgeting so prized in Stage 3. Family is their metaphor; everyone's voice should be heard and respected. You can't treat knowledge workers like cogs in a machine. *Empowerment and egalitarian management* are among the breakthroughs they introduced. Companies generally award team bonuses to encourage cooperation. At a micro level the individual leader asks: "How can we empower more people?"

- In the context of the context of the Strategic Decision-Making under Uncertainty model and theory the stage four common pool resource

management is synonymous with the consilience decision-making models (Q4) because different stakeholders' voice is sought out and considered as an asset. On account of the strong focus on systematic processes that drive prosperity (+S) this stage is similar to the rational decision-making stage, yet it differentiates from general protocol with higher risk dispositions towards power and empowerment (+D).

But ultimately one of the primary studies that made a tipping point contribution was a paper by innovation and decision-making theorists Adam Grant and Barry Swartz (2011). After the team reviewed every known virtue they concluded that there is no value or behaviour that is universally positive. In the context of strategic decision-making under uncertainty theory and model this underscores the importance of the different drives' rolls in creating instability. Binding together while pushing counter points apart is the very fabric that allows for moderation while adapting in order to responsibly facilitate the emergence of new states and change without a whole system collapsing into chaos.

11.4.2. Summary

Ultimately a wide variety of theories start to provide insight on how the dynamic components of the drives interacting can and should work. In reviewing the literature There are five key takeaways from looking at the potential of the strategic decision-making under uncertainty model as an emergent, dynamic, change and development theory include:

- *Dynamic interplay.* Consistently with the emergent strategy theories and interaction patterns explored in the work of Williams (1890) Mintzberg (1978) and Moncrief (1997) the dynamic interplay between the systems (or quadrants) may be one of the catalysts of change driving development
- *Change.* The importance of recalibrating to changes is expected to become an increasingly important component of strategic decision-making under uncertainty.
- *Emergence.* In the context of management studies emergence is brought on by the recombination of a number of factors including exposure of a plan to real life events as well as
- *Nested.* As a basic tenant of development theories speculate that emergence

are shifts happening on multiple levels and areas in a system so too evidence so far support that micro, mezzo and macro levels may be dealing with the same tensions in its own nest in relation to the broader situation. A general theory of the evolutionary economics process has been proposed by Kurt Dopfer, John Foster and Jason Potts (2004) as the micro mezzo macro framework

- *Increasing future options.* Concept that strengthening a strategic position in order to maximize future options under uncertainty to adapt and respond to change by moving up to higher stages and levels in the model.

- *Ordered stages of development.* Consistently with the time component explored in improvisation theory models, developmental theories also highlight likelihood that strategic decision-making under uncertainty may not just be static quadrants, but cycle through an impulsive stage one, followed by a socially conforming stage two, to a rationally conforming stage three, to a shared empowerment stage four.

11.5. Conclusion

Ultimately this model and theory of Strategic Decision-Making under Uncertainty is built upon the literary foundations of behavioural economics, integrating and subsuming the three theories: Dual Presses Systems (Kahneman & Tversky, 2003), Exploration and Exploitation (March, 1991) and Evolutionary Economics (Nelson & Winter, 1982). Ultimately this was not the only route to present and communicate the model and theory as can be observed when looking at each section's broader literature from even beyond management studies where similar drives, models and dynamics can be observed. Relative to one another the models section also present how the various strategic stances can be presented relative to one another outside the behavioural decision-making arena. However, for the context of this specific thesis' development, resources, research methods and support this method of framing the model was deemed the most appropriate and likely to succeed. Interesting to note that at the time each of the respective keystone theories were emerging each of them deemed it necessary at the time to present themselves in the context of the limitations of classic rational decision-making.

Ultimately it should be noted that regardless of strategic decision-makers and collaborators innate strategic predispositions, the foundations of the model and theory can be transposed into other central philosophical starting points to be used

for comparing, developing and evolving strategic stances (or philosophies) in uncertain environments. M³'s practical contribution also extends to academia and offers social science, development and evolutionary researchers, (another type of strategic decision-makers) a new tool for developing and critically considering research methods.

CHAPTER 12

APPLYING THE THEORY TO SEMINAL STRATEGY MODELS

12.1. Introduction

If it is possible for the M³ theory and model to represent ethnographic field data through a unified epistemological lens the lingering question then remains what about existing peer reviewed strategy models that has been introduced into literature over the past 100 years. Should the M3 model and theory not be able to depict that as well? And if so, what can we learn about the emergence, change, adaptation and transformation of theory models over the course of the evolution of the field? How about the evolution of theorists who have made multiple seminal contributions?

As it turns out, a holistic few on the emergence of academic and consultancy firm birthed strategy models would not only aid in understanding the model discussed thus far, it could also serve as a test. Over one hundred seminal theories and models of strategy are generally accepted as the keystones of the literate and in this chapter the thesis will connect them not only as a literature review, but also empirical data in the emergent process of constructing a model and theory. The reason for this is because like a management strategist, a management researcher's work process constitutes of acts of strategic decision-making under uncertainty.

Looking at a chronological account of how strategy have evolved over the past one hundred years would also have the added benefit of informing on how not just the micro level of individual models and theories build on each other but it would also provide insight as to how and when the best and brightest minds in strategy build on their own and one another's work with new fundamental contributions.

Strategy is, in essence, problem solving decision-making under uncertainty and the most likely approach depends upon how the specific decision makers are framing the problem at hand and perceiving the internal and external environment. Since the advent of management strategy in the 1950s, each new strategic management theory is still to this day most often introduced as a panacea. Conversely, this Strategic Decision-Making under Uncertainty Model does not claim to be the only and ultimate model to eclipse all models. Instead it seeks to provide a frame and code that the one

hundred and counting management strategies can be coded by to determine which strategies would be better matches for different types of collaborations. Specifically, it seeks to illuminate strategies in relation to each other so that they can be structured into a tool box for better collaboration, communication and responses to Strategic Decision-Making under Uncertainty.

In the context of this chapter the seminal theories on strategy are also an empirical data stream to challenge and shape the strategic Decision-Making under Uncertainty model and theory laid out in the previous chapters.
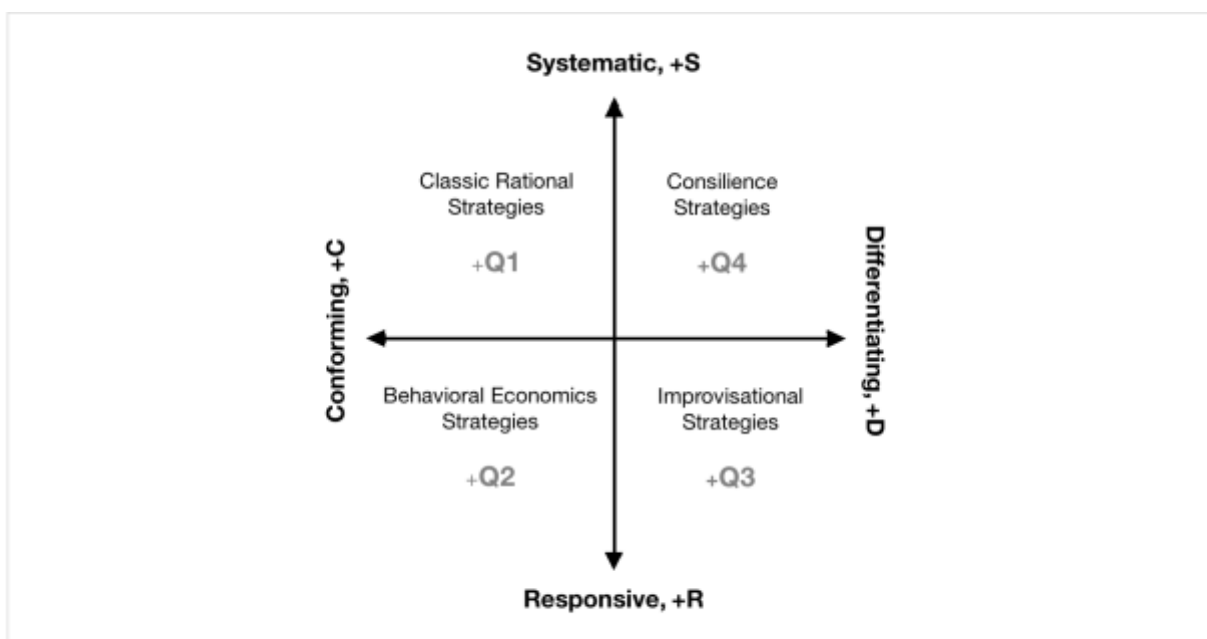
Figure 12.1. – The M³ Strategic Decision-Making Uncertainty: Modes and Models

As depicted in Figure 12.1. – Strategic Decision-Making under Uncertainty Model this chapter will use the quadrants to discuss and analyse some of the most important strategy theories and models of the last century. In order of most evolved in management literature to least this will include:

- Classic Rational Strategy models (+S, +C)
- Behavioural Strategy models (+R, +C)
- Improvisational Strategy models (+R, D)
- Consilience Strategy models (+S, +D)

A comprehensive table of one hundred of the most seminal Management Strategies is available in Appendix C. What follows is definition of the strategic decision-making

under uncertainty model quadrant in context to strategy models that aligns strongly to one (or multiple) quadrant's strategic stance over other models.

12.2. Classic Rationality Strategy Models and Theories (+S, +C)

The 'book smart' answer to making strategic decisions under uncertainty involves the systematic and theoretical objectification of that which can be manipulated. It is also the default and most academically mature set of theories at this time. Reflecting back to the Chapter 2 Literature Review on Decision-Making theories, it is synonymous with the classic rational decision-making under uncertainty or technical rationality. Positioning can be based on superior size, technical capabilities, efficiencies and assuming that once advantage is obtained, it is sustainable. In most cases systematic strategy drives (+S) leans heavily towards the conformity (+C) quadrant, taking advantage of that which is perceived as predictable, stable and develops gradually without major disruptions. In the opposite Systematic quadrant of differentiation (+D) the Systematic Strategies (+S) successfully take advantage being robust and socially decentralized to absorb the shocks of uncertainty to tackle relatively higher risk.

To advance using this strategy involves decision-makers employing technical rationality by forecasting how the market is likely to develop over time based on historic indicators. Then, they construct a plan to build and sustain advantaged positions. The hallmark of the Classic Rationalist Strategist (+S, +C) is that execution is to be rigorously planned and programmed.

Classic Rational Strategies (+S, +C) as a type of problem solving and innovation is most commonly exemplified when decision-makers spot opportunities for processing large quantities of similar information through a set structure in accordance with theories like Fordism or Peter Ducker's increasing levels of efficiency. Strategy literature from the late 1950s and early 1960s focused more on systematic processes to ward off *competition* (+S, +C) as oppose to *collaboration* for productivity (+S, +D). Drucker's theories would be amongst the pioneering Classic Rational Strategies (+S, +C) focused on pricing on the controlled. However, he was hardly alone. Specifically, in the field of Economics, thought leaders commonly frame problem solving and innovation in these terms.

With the introduction of Michael Porter's '*How competitive forces shape strategy*"
(1979) he challenged Drucker's price sensitivity and opened the spectrum to an
additional suit of innovation via economic productivity and efficiency (+S, +C).
Strategy, it follows for Porter in the context of this time and space, was a matter of
working out your company's best position relative not just to pricing pressures from
rivals but to all the forces in your competitive environment.

Theories in Action

An overview table one hundred of the most seminal management strategy theories to
date are available in Appendix C. Each theory has been coded per the Strategic
Decision-Making under Uncertainty drives to reveal which strategic stance is more
dominantly developed. At first glance it is apparent that to date the body of literature
on strategy is dominated by Classic Rational Strategies (+S, +C) as 73 of the 100
theories takes a strong a systematic (+S) and conforming (+C) stance of strategic
decision-making under uncertainty. A summary table of specifically Technocratic
Strategies are available in Table 12.1.

Notably not featured amongst the Classic Rational Strategy models and theories are
Management, Innovation and Change Strategies that for some reason or another not
use the keyword descriptor of "strategy' but is in essence a strategy. Possibly one of
the strongest Classic Rational Strategic stances would be the father of Management,
Henri Fayol's (1916) whose model of management defined as controlling,
commanding, coordinating, planning and organizing. Most of these principles nestles
well inside an extreme level of traditional planning (+S, +C) backed by a strong
hieratical power and control infrastructure (+C).

Similarly, *the Granddaddy of Strategy* and Boston Consulting Group Founder, Bruce
Henderson's *The Origins of Strategy* (1989) argues for aggressive outsourcing and
partnering to improve efficiencies. This would be a clear example of a systematic
 strategy, but for the word 'collaboration' as a descriptor would suggest that it is
 maybe a differentiation strategy (+D) or Consilience model (+S, +D) instead? The
 reason this specific model is still coded (+S, +C) is because in managing the
 outsourced supply chain relationships power and control still resides with the

Year	Model Name	Theorist(s)	Q1	Q2	Q3	Q4
1954	Management by Objectives (MBO)	Peter Drucker	Q1			
1957	Ansoff Matrix	H. Igor Ansoff	Q1			
1959	Gradualism	Charles Edward Lindblom	Q1	Q2		
1959	Industrial Organization	Joe Statan Bain	Q1			
1960	Total Quality Management	Taiichi Ohno	Q1			
1962	Structure follows Strategy	Alfred D. Chandler	Q1			
1964	La Prospectives	G. Berger	Q1			
1965	Scenario Planning	Herman Kahn	Q1			
1965	Product Lifecycle	Theodore Levitt	Q1			
1967	PEST Analysis	Francis Aguilar	Q1			
1967	Five Product Levels	P. Kotler	Q1			
1968	Ishikawa Diagram (or fishbone diagram)	Kaoru Ishikawa	Q1			
1969	SWOT Analysis	Alfred Humphery	Q1			
1970	Growth-Share Matrix	Bruce D. Henderson	Q1			
1971	Andrews' Strategy Framework	Kenneth Richmond Andrews	Q1			
1972	Experience Curve	[Boston Consulting Group]	Q1			
1973	Red Queen Effect	Leigh Van Valen	Q1			
1974	Profit Impact of Market Strategies (PIMS)	Schoeffler, Buzzell & Heany	Q1			
1975	ADL Matrix	Arthur D. Little	Q1			
1975	3Cs	Kenichi Ohmae	Q1			
1976	Rule of Three and Four	Bruce D. Henderson	Q1			
1977	Real Options	Merton, Brennan, and Schwartz	Q1			
1978	Deleberate and Emergent Strategies	Henry Mintzberg	Q1		Q3	
1978	Logical Incrementalism	James Brian Quin	Q1			
1979	Five Forces	Michael E. Porter	Q1			
1980	Four Phases of Strategy	Gluck, Kaufman & Walleck	Q1			
1980	Niche Strategy	Michael E. Porter	Q1			
1980	McKinsey's 7s	Robert H. Waterman, Jr.and Tom Peters	Q1			
1981	BCG Advantage Matrix	Richard Lochridge	Q1			
1982	Total Quality Management	W. Edwards Deming	Q1			
1982	Diversification Strategy and Profitability	R. P. Rumelt	Q1			
1984	Resource-Based View	B. Wernerfelt	Q1			
1985	Porter's Value Chain (Genertic Strategies)	Michael E. Porter	Q1			
1986	Six Sigma	Bill Smith and Bob Galvin	Q1			
1987	Mintzberg's 5 Ps	Henry Mintzberg	Q1	Q2	Q3	Q4
1989	Strategic Intent	Gary Hamel and C.K. Prahalad	Q1	Q2	Q3	Q4
1989	Benchmarking	Robert Camp	Q1			
1990	Business Process Re-Engineering (BPR)	Michael Hammer	Q1	Q2	Q3	Q4
1990	Diamond Model	Michael Porter	Q1			
1990	Core Competencies	C. K. Prahalad and Gary Hamel	Q1			
1991	Commitment	Pankaj Ghemawat	Q1			
1991	VRIO Analysis	J.B. Barney	Q1			
1992	Capabilities Competition	Stalk, Evans, & Shulman	Q1			
1995	Return on Quality (ROQ)	Rust, Zahorik, & Keiningham	Q1			
1996	formulation & implementation of strategy.	Henry Mintzberg, and James Brian Quinn	Q1	Q2	Q3	Q4
1996	Three Factor	Michael Porter	Q1	Q2	Q3	
1996	Continuous Strategy Process (BS)	Robert S. Kaplan, and David P. Norton	Q1	Q2	Q3	Q4
1997	Strategy under Uncertainty	Hugh Courtney, Jane Kirkland, and Patrick Viguerie.	Q1	Q2	Q3	Q4
1997	Dynamic Capabilities	David Teece	Q1	Q2	Q3	Q4
1997	Triple Bottom Line	John Elkington	Q1	Q2	Q3	
1997	Bowman's Strategy Clock	Cliff Bowman and David Faulkner	Q1			
1998	Value Chain Deconstruction	[Boston Consulting Group]	Q1			
1999	Delta Model	Arnoldo C Hax; Dean L Wilde II	Q1	Q2	Q3	
1999	Profit Patterns	Adrian Slywotzky, David J. Morrison and Ted Moser	Q1			Q4
2000	Three Horizons of Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2000	Sevein Degrees of Freedom for Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2001	Strategy Diamond	Donald Hambrick and James Fredrickson	Q1			
2001	Strategy as Simple Rules	Donald Sull and Kathleen Eiisenhardt	Q1			
2002	Bottom of the Pyramid	C.K. Prahalad and Stuart L. Hart	Q1	Q2	Q3	Q4
2002	Sustained Temporal Dynamics	Robert R. Wiggins, Timothy W. Ruefli	Q1	Q2	Q3	Q4
2003	Open Innovation	Henry Chesbrough	Q1	Q2	Q3	Q4
2009	Finding, formulating, & developing	Vladimir Kvint	Q1			
2010	Four Dimensions of Management	Julian Birkinshaw	Q1	Q2	Q3	Q4
2010	Adaptive Advantage	Reeves, Deimier, Morieux, and Nicol	Q1	Q2	Q3	Q4
2010	The Business Model Canvas	Alex Osterwald and Yves Pigneur	Q1	Q2		
2011	Options and Games Compeditive Strategy	Benoit Chevalier-Roignant and Lenos Trigeorgis	Q1	Q2	Q3	Q4
2011	Strategy without Design	Robert C. H. Chia and Robin Holt	Q1			
2012	Social Empowerment	Nilofer Merchant	Q1			Q4
2013	Algorithmic Strategy	Tyler Cowen	Q1	Q2		
2013	Capturing as many future histories as possible	Alexander Wissner-Gross,and Cameron Freer	Q1			
2013	Five-Step Strategy Model	A.G. Lafley and Roger Martin	Q1			
2015	Strategy Palette	Martin Reeves, Knut Haanaes, Janmejaya Sinha	Q1	Q2	Q3	Q4
2016	Complex Adaptive Systems (CAS)	Martin Reeves, Simon Levin, and Daichi Ueda	Q1	Q2	Q3	Q4

Table 12.1. – Chronologic emergence and development of seminal Classic Rationality anchored strategy models

strategist organization and the Old Power dynamic is not New Power (Hermanns & Timms, 2014) as was discussed in detail in Chapter 2. Henderson's strategy would thus be coded as a traditional Classic rational strategy (+S, +C).

Strategists who scaffolded onto *building onto what you already do well* include: Prahalad & Hamel's (1990), *Search of Excellence* focusing on a few key success factors, critical resources, and core competencies; Bain consultants' publications on making adjacency moves (Zook 2007, Allen, 2003), and Collis & Montgomery's (2008) *Competing on Resources*. Additionally, there is also control driven strategist (++C) authors (with a taste for competition) who have been able to make a name for themselves in mainstream strategy literature include: "*Hardball: Five Killer Strategies for Trouncing the Competition,*" and its companion "*Curveball: Strategies to Fool the Competition.*" (Lachenauer & Stalk, 2004; Lachenauer & Stalk, 2006). But possibly most dominantly Michael E. Porter also appears repeatedly on the Classic Rational Strategist (+S, +C) list with at five different seminal strategies to his name in this specific quadrant.

Classic Rational Models Coding Case Study

An example of a seminal strategy model and theory coded as a predominantly technocratic strategy would be Gluck, Kaufman & Walleck (1980) Four Phases of Formal Strategic Planning mapped on the Model as depicted in Figure 12.2.

At face value Gluck, Kaufman & Walleck's (1980) Four Phases of Formal Strategic Planning is a traditional strategic planning model and theory that can be coded +S, +C for reasons outlined earlier. This is what we can refer to a neural state or zoom (+Z). However, once we take a closer look at what is planned and at what order during the four phases, we zoom into further detail. This act can be coded as +Z. At this +Z level we can also move from a 'categorical' to a 'relational' coding system when we observe the four planning phases relative to one another.
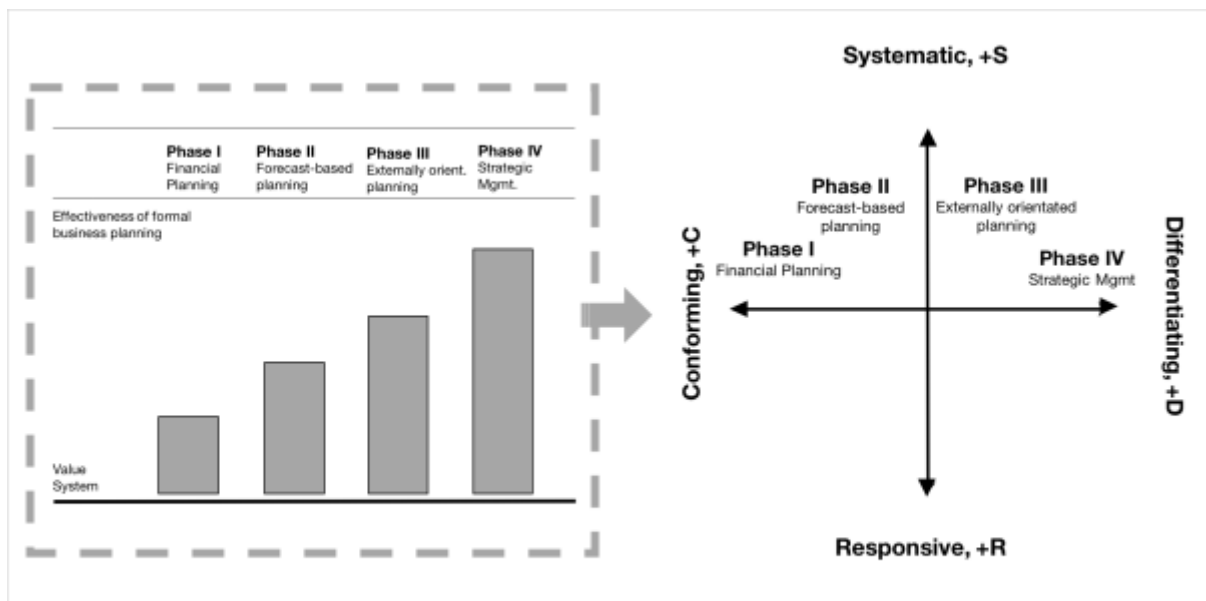
Figure 4.2. – Gluck, Kaufman & Walleck's (1980) Four Phases of Formal Strategic Planning mapped onto the Model

Of the four phases, Phase I: Financial Planning are most associated with internal control (and conformity) thus making it a relative +C code. Phase II: Forecast-based Planning increases the level of systematic thinking and lessen the conformity making it relatively more differentiating (+D). However, it is still based on internal protocols so it is still (+S, +C). Phase III: Externally orientated planning that in the world beyond the company over which there is less control (or perceptions of control) lessening the internal control yet again, and moving it into the external quadrant (++D). And finally Phase IV: Strategic Management is described to address the action elements as well as the flexibility of implementation thus pushing the code yet further to lower control (+++D) on the brink of the Experimentation Strategy quadrant (+S, +D).

Most other famous strategy models like SWOT Analysis, Anoff Matrix and most of the Boston Consulting Group models of the 1980s are at their primary levels a Technocratic model. At their secondary level of detail coding many still rely strongly on Classic Rational strategies but are more likely to integrate strategies from other decision-making quadrants.

Applied Classic Rational Strategy Case Study

Strategic decision-maker Jack Welsh as CEO of GE famously deployed Classic Rational Strategies (+S, +C) from 1981 to 2001. His public philosophy was that a

company should be either No. 1 or No. 2 in a particular industry, or else leave it completely. At the time GE thus chose to focus on categories and brands where it could lead and obtain scale advantage, as it creates value by growing those categories. Over the course of Welsh's tenure as CEO at GE, the company's value increased 4,000% (Welsh, 2003).

In many ways the Classic Rational Strategies (+S, +C) defines the field of strategy. The overwhelming majority of theories make their contribution to this principle in management studies. It is also the quadrant that are emphasized in business schools and thus expanded by major enterprises who hire and deploy graduates. It is also the categories of strategy theories what business schools predominantly teach, and major enterprises more likely to hire for and deploy. But specifically, for Strategic Decision-Making under Uncertainty, a number of other dimensions are also important.

12.3. Behavioural Strategy Models and Theories (+R, +C)

The 'street smart' strategy under uncertainty would not necessarily require extensive schooling or book reading. Instead it would read people and situations with keen observation and communication skills. Formal power and an elite status would also help. It is synonymous with the Behavioural decision models discussed in Chapter 2. Behavioural Strategies (+R, +C), like Technocratic (+S, +C) are inclined to gravitate towards lower risk propositions that seek to exploit the power and information currently in hand more than risking exploration beyond the current vantage point. The difference however is whereas the Classic Rational strategies (+S, +C) exploit the objectively quantifiable knowledge of things at a specific time, Behavioural strategies (+R, +C) seek to focus on exploiting the subjective relational social advantages more aggressively.

In the case of Behavioural Strategies (+R, +C)) decision-makers are taking a visionary approach to create or re-create an environment largely by themselves. Firms deploying a visionary approach also follow a distinct thought flow. First, visionary leaders envisage a valuable possibility that can be realized. Then they work single-mindedly to be the first to build it. Finally, they persist in executing and scaling the vision until its full potential has been realized. In contrast to the analysis and

planning of the Systematic Strategists (+S), the visionary approach is about imagination and realization and is essentially creative (+R, +C).

Behavioural Strategies (+R, +C) win by being among the first to recognize, implement, and scale new visions for the possible future. This would be a more common strategy for big companies and entities who already have critical mass or social capital to be change makers in the field. These decision-makers would innovate on what they perceive the market wants or what they can influence the market to perceive they need.

This type of problem solving and innovation is most commonly exemplified when decision makers conform (+C), and double down in an area they already do well in. Often it is out of fear that they will lose something when they innovate. Specifically, Bourdieu's theory of social practice prominently steps into the forefront and excellence is especially prevalent in fields of political power. Responsive Strategies (+R) hence looks towards socially normative rules, politics, hierarchies and is in essence bounded rationality to conform to the end of conforming to those with traditional forms of power.

Compared to Classic Rational Strategies (+S, +C), Behavioural (+R, +C) are a rather neglected area of strategy literature partially because these theories' have been emerging much later in the evolution of strategy literature. Like behavioural decision-making theories, the interests in pragmatic strategy theories have also seen a considerable uptick in the last few decades.

Theories in Action

A chronological table of management strategy theories driven largely by a responsive (+R) and conforming (+C) stance of strategic decision-making under uncertainty is available in Table 12.2. A comprehensive list is available in Appendix C showing their relation in the context of other strategy theories.

At first glance it is apparent that Behavioural Strategy theories arose early in the advent of Management Strategy theories similarly to Classic Rational Strategies. But ironically the seminal theory of *Gradualism* (Lindblom, 1959, 1965, 1976, 2001)

which deploys slow incremental steps to move an agenda forward without abrupt revolutionary uprisings, was not able to maintain traction with a steady supply of new seminal contributions in the strategy landscape dominated by Technocratic Strategies for the first three decades of the discipline. The introductory work of Charles Lindblom did however lay a strong foundation for Behavioural Decision-Making under Uncertainty scholars like Simon, March, Tversky and Kahneman built onto his strategy theory in their disciplines of management theory and decision-making (as discussed in Chapter 2). But ultimately, it was not until the advent of the Digital revolution in the 1990s that a resurgence was observed in seminal Behavioural Strategies.

Year	Model Name	Theorist(s)	Q1	Q2	Q3	Q4
1959	Gradualism	Charles Edward Lindblom	Q1	Q2		
1962	Diffusion of Innovations	Everet M. Rogers		Q2		
1982	Tech. Paradigms and Tech. Trajectories	Giovanni Dosi		Q2		
1987	Mintzberg's 5 Ps	Henry Mintzberg	Q1	Q2	Q3	Q4
1989	Strategic Intent	Gary Hamel and C.K. Prahalad	Q1	Q2	Q3	Q4
1990	Business Process Re-Engineering (BPR)	Michael Hammer	Q1	Q2	Q3	Q4
1993	Distinctive Capabilities Framework	John Kay		Q2		
1994	Competing for the Future	Gary Hamel and C. K. Prahalad		Q2		
1996	Formulation and Implementation	Henry Mintzberg, and James Brian Quinn	Q1	Q2	Q3	Q4
1996	Three Factor	Michael Porter	Q1	Q2	Q3	
1996	Continuous Strategy Process (BS)	Robert S. Kaplan, and David P. Norton	Q1	Q2	Q3	Q4
1996	8-Step Model for Leading Change	John Kotter		Q2		
1997	Strategy under Uncertainty	Hugh Courtney, Jane Kirkland, and Patrick Viguerie.	Q1	Q2	Q3	Q4
1997	Dynamic Capabilities	David Teece	Q1	Q2	Q3	Q4
1997	Triple Bottom Line	John Elkington	Q1	Q2	Q3	
1999	Delta Model	Arnoldo C Hax; Dean L Wilde II	Q1	Q2	Q3	
2000	Three Horizons of Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2000	Sevein Degrees of Freedom for Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2000	Tipping Point	Malcolm Gladwell		Q2		
2002	Bottom of the Pyramid	C.K. Prahalad and Stuart L. Hart	Q1	Q2	Q3	Q4
2002	Sustained Temporal Dynamics	Robert R. Wiggins, Timothy W. Ruefli	Q1	Q2	Q3	Q4
2003	Open Innovation	Henry Chesbrough	Q1	Q2	Q3	Q4
2003	Keller's Strategic Brand Equity Model	Kevin Lane Keller		Q2	Q3	
2004	Hardball	George Stalk and Robert Lachenauer		Q2		
2004	Value Innovation	W. Chan Kim and Renee Mauborgne		Q2		Q4
2009	Business Model Innovation	Lindgardt, Reeves, Stalk, & Deimier		Q2	Q3	
2010	Birkinshaw's Four Dimensions of Management	Julian Birkinshaw	Q1	Q2	Q3	Q4
2010	Adaptive Advantage	Reeves, Deimier, Morieux, and Nicol	Q1	Q2	Q3	Q4
2010	The Business Model Canvas	Alex Osterwald and Yves Pigneur	Q1	Q2		
2010	Business Model Innovation (Same as BCG?)	David J. Teece		Q2	Q3	
2011	Options and Games Compeditive Strategy	Benoit Chevalier-Roignant and Lenos Trigeorgis	Q1	Q2	Q3	Q4
2013	Algorithmic Strategy	Tyler Cowen	Q1	Q2		
2015	Strategy Palette	Martin Reeves, Knut Haanaes, Janmejaya Sinha	Q1	Q2	Q3	Q4
2016	Complex Adaptive Systems (CAS)	Martin Reeves, Simon Levin, and Daichi Ueda	Q1	Q2	Q3	Q4

Table 12.2. – Chronologic emergence and development of seminal Behavioral Economics anchored strategy models

Behavioural models Coding Case Study

In application Roger Everett's (1962) adaptation to change curve would be an example of gradualism in action whereby innovators influences, early movers, who in turn systematically influences early majority, which in turn influences late majority, and ultimately also laggards. In Figure 12.3 we observe how as critical mass increase traditional notions of power, control and conforming also increase.
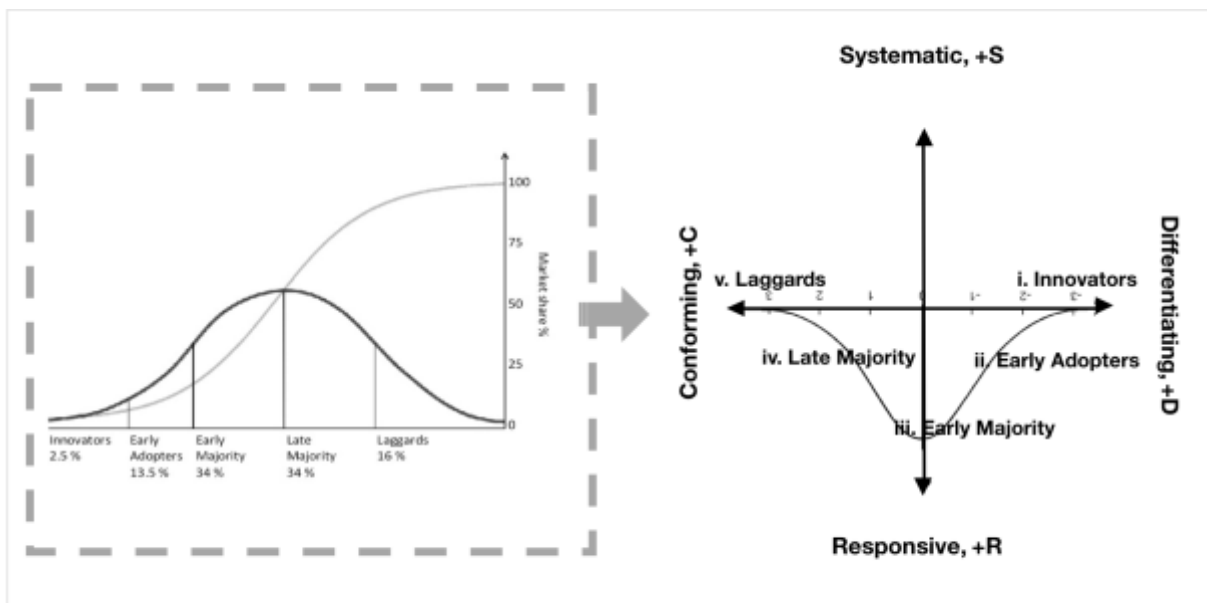
Figure 12.3. – Everett's (1962) Early Adoption Curve mapped onto M³

Applied Behavioural Case Study

A famous case study of a big company engaging in Behavioural Strategies (+R, +C) would include American Express's response to the financial crisis of 2008. Amex faced the triple challenge of rising default rates, slipping consumer demand, and decreasing access to capital. Socially they also faced a fuming stockholders and regulatory bodies. To survive, the company cut approximately 10 percent of its workforce, shed noncore activities, and cut ancillary investment. They furthermore also vowed to restore public trust and regulatory compliance. By 2009, Amex had saved almost $2 billion in costs and pivoted toward growth and innovation by investing in its loyalty program, entering the deposit raising business, and embracing digital technology. As of 2014, its stock was up 800 percent from recession lows (Reeves, Haanaes, & Sinha, (2015).

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12.4. Improvisational Strategy Models and Strategies (+R, +D)

The 'artistic' 'superhero' or 'MacGyver" strategic solution under uncertainty does not involve book smarts or street smarts. Instead, it requires speedy, skilful and brave appropriations of resources or force. This is similar to Improvisation strategies discussed in Chapter 2. Improvisational Strategies (+R, +D) are similar to the Behavioural Strategies (+R, +C) in that the strategist intuitively and with awareness responds to the environment and real-time information and cues (+R). However, what makes this higher risk compared to Behavioural Strategies (+R, +C) is the deviation away from social cues, structures and expectations (+D). The Improvisational strategist thus uses one of the rebel strategies that breaks from the established rhythm and perception on the socially constructed world.

The First Mover type of decision-making is adaptive and responsive (+R). Decision-making can be deployed because amidst uncertainty social engineering resource has yet to be introduced to mould the market. Prediction is often hard and advantage is short-lived. The only shield against continuous disruption is a readiness and an ability to repeatedly change. In an adaptive environment, winning comes from adapting to change by continuously experimenting and identifying new options faster than others. The sustainable competitive advantage comes from being robust with a series of temporary advantages.

Improvisational strategists need to do a voluminous amount of experimentation and be adaptive. Tying into Pallet theory's (Reeves, Haanaes, & Sinha, 2015), categorization of Firsts, collectives must master three essential thinking stages: Step 1: they continuously vary their approach, generating a range of strategic options to test. Step 2: They carefully select the most successful option to scale up and exploit. And Step 3: as the environment changes, the firms rapidly iterate on this evolutionary loop to ensure that they continuously renew their advantage.

Theories in Action

A chronological table of management strategy theories driven largely by a responsive (+R) and differentiating (+D) stance of strategic decision-making under uncertainty is available in Table 12.3. A comprehensive list is available in Appendix C.

Year	Model Name	Theorist(s)	Q1	Q2	Q3	Q4
1978	Deleberate and Emergent Strategies	Henry Mintzberg	Q1		Q3	
1986	First Mover Advantage (FMA)	G.L. Urban, R. Carter, S. Gaskin and Z. Mucha			Q3	
1987	Mintzberg's 5 Ps	Henry Mintzberg	Q1	Q2	Q3	Q4
1988	Time Based Competition	George Stalk, Jr.			Q3	
1989	Strategic Intent	Gary Hamel and C.K. Prahalad	Q1	Q2	Q3	Q4
1990	Business Process Re-Engineering (BPR)	Michael Hammer	Q1	Q2	Q3	Q4
1992	Mass Customization	Stan Davis			Q3	
1994	Hypercompetition	Richard A. D'aveni			Q3	
1995	Value Migration	Adrian Slywotzky			Q3	
1996	Formulation and Implementation	Henry Mintzberg, and James Brian Quinn	Q1	Q2	Q3	Q4
1996	Three Factor	Michael Porter	Q1	Q2	Q3	
1996	Continuous Strategy Process (BS)	Robert S. Kaplan, and David P. Norton	Q1	Q2	Q3	Q4
1996	Paranoid Company	Andy Grove			Q3	
1997	Strategy under Uncertainty	Hugh Courtney, Jane Kirkland, and Patrick Viguerie.	Q1	Q2	Q3	Q4
1997	Disruptive Innovation	Clayton Christensen			Q3	
1997	Dynamic Capabilities	David Teece	Q1	Q2	Q3	Q4
1997	Triple Bottom Line	John Elkington	Q1	Q2	Q3	
1999	Delta Model	Arnoldo C Hax; Dean L Wilde II	Q1	Q2	Q3	
1999	Digital Strategy				Q3	
1999	Strategy Dynamics	J. Moncrieff			Q3	
1999	Temporary Advantage	Charles H. Fine			Q3	
2000	Three Horizons of Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2000	Sevein Degrees of Freedom for Growth	Mehrdad Baghai, Stephen Coley, David White	Q1	Q2	Q3	Q4
2002	Bottom of the Pyramid	C.K. Prahalad and Stuart L. Hart	Q1	Q2	Q3	Q4
2002	Sustained Temporal Dynamics	Robert R. Wiggins, Timothy W. Ruefli	Q1	Q2	Q3	Q4
2003	Open Innovation	Henry Chesbrough	Q1	Q2	Q3	Q4
2003	Keller's Strategic Brand Equity Model	Kevin Lane Keller		Q2	Q3	
2009	Business Model Innovation	Lindgardt, Reeves, Stalk, & Deimier		Q2	Q3	
2010	Four Dimensions of Management	Julian Birkinshaw	Q1	Q2	Q3	Q4
2010	Adaptive Advantage	Reeves, Deimier, Morieux, & Nicol	Q1	Q2	Q3	Q4
2010	Business Model Innovation	David J. Teece		Q2	Q3	
2011	Options and Games Compeditive Strategy	Benoit Chevalier-Roignant and Lenos Trigeorgis	Q1	Q2	Q3	Q4
2013	Transient Competitive Advantage	Rita Gunther McGrath			Q3	
2015	Strategy Palette	Martin Reeves, Knut Haanaes, Janmejaya Sinha	Q1	Q2	Q3	Q4
2015	Innovation Strategy	Gary P. Pisano			Q3	Q4
2016	Complex Adaptive Systems (CAS)	Martin Reeves, Simon Levin, and Daichi Ueda	Q1	Q2	Q3	Q4

Table 12.3. – Chronologic emergence and development of seminal Improvisational anchored strategy models

Glancing at the summary table it becomes apparent that it was not until the late 1970s that Improvisational Strategies were able to gain traction, and it took clear and direct attacks onto Classic Rational Strategies to enter the scholarly conversation. Also in contrast to the Classic Rational strategies that pursued seminal contributions in a pure context of not mixing strategic stances it is apparent that Improvisational Strategies recognise and also develop the role that Classic Rational Strategies play alongside theories that develop Improvisational Theories. Also, worth noting is one of the reoccurring names of different seminal contributions over the span of several decades would be Henry Mintzberg who specializes in this improvisational quadrant.

Also featured amongst the theories coded in this list as having a strong Experimental Strategic stance are *Discovery Driven Planning*" (McGrath & McMillan, 1995) addressing rapidly responding to ever-evolving competitive and market changes with innovation strategy. This camp also includes other classic flexibility-as-strategy

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pieces that date from the 1990s, including "*Strategy as a Portfolio of Real Options,*" (Lehrman, 1998) and "*Judo Strategy.*" (Yoffie & Cusomano, 1999).

More recent additions include "*Stop Making Plans: Start Making Decisions,*" (Mankins & Steel, 2006) which made the case for continuous strategic planning cycles. And finally, it includes various approaches to running established companies as if they were start-ups, such as Steven Blank's "*Why the Lean Start-Up Changes Everything*" (2014).

Improvisational Theory Coding Case Study

An example of a seminal strategy model and theory coded as a predominantly improvisational strategy would be Henry Mintzberg's (1978) Deliberate and Emerging strategies. Similar to Pragmatic Strategies it would also be almost a decade before other strategy theorists like G.L. Urban, R. Carter, S. Gaskin and Z. Mucha (1986) would offer models like *First Mover Advantage* to continue building on this philosophy. Similarly, it would be two decades before Moncrieff (1999) offers a seminal evolution on Mintzberg's (1978) Deliberate and Emerging Strategy theory with a more detailed subdivision of classifications as discussed in Chapter 2. It would also be the emergence of this quadrant into Strategy Literature that would gave rise to the notion of dynamic strategies as outlined in Figure 12.4.
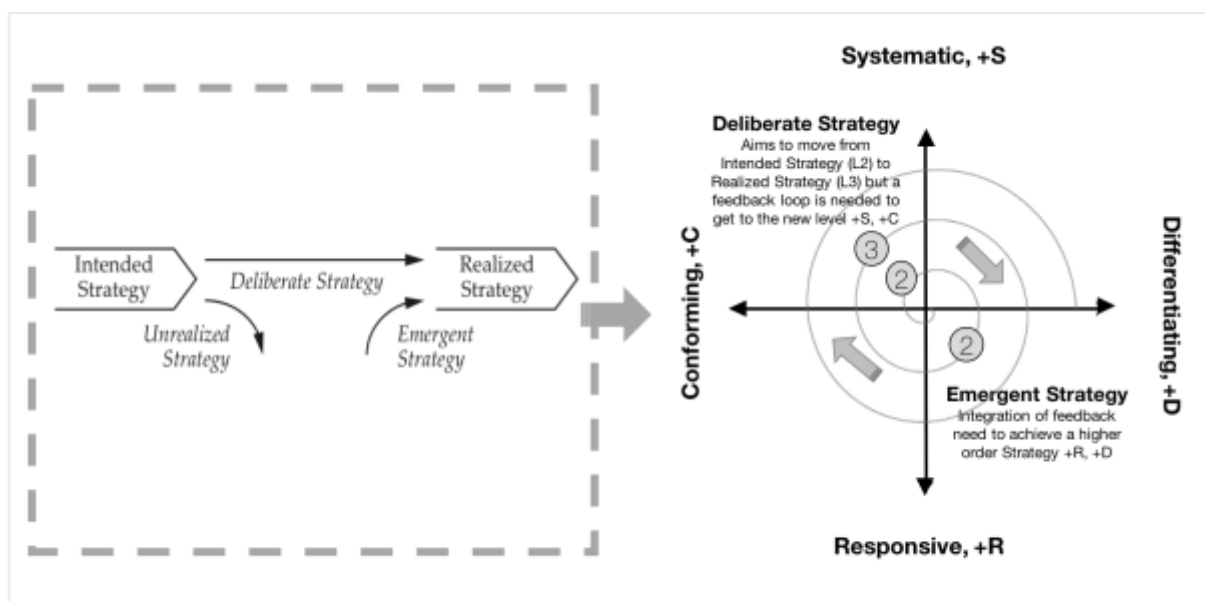
Figure 12.4. – Mintzberg's (1978) Deliberate and Emergent Strategies mapped onto M³

Applied Improvisational Strategy Case Study

One famous practical example of successful Improvisational Strategies (+R, +D) would include the India-based information technology (IT) services and solutions company, Tata Consultancy Services as documented by Reeves, Haanaes, & Sinha, (2015). Its sheer size and international clout allow Tata some powers to influence massive social systems, but technically it operates in a regulatory and technical environment that is hard to predict. It needs to be responsive to influencing social processes but also needs to continuously adapts to repeated shifts in technology (e.g. the evolution from client servers to cloud computing.) By taking a responsive approach (+R) that focuses on monitoring the environment, strategic experimentation, and organizational flexibility, Tata Consultancy Services has grown from $155 million in revenue in 1996 to $1 billion in 2003 and more than $13 billion in 2013 to become the second-largest pure IT services company in the world.

12.6. Consilience Strategy Models and Theories (+S, +D)

The (in)famous consilience strategist or scientist often adorns the cover of our western cultural entertainment, media, history books. These are often the underdogs who beat the odds, defied social expectations, or maybe even sacrificed themselves for a cause greater than themselves. But in randomly sampling the current (or past) world population, these strategists are not nearly as common as their legacy and fame would lead one to believe. Consilience strategies are synonymous with the consilience decision-making models outlined in Chapter 2.

Consilience Strategies (+S, +D) are similar to the Improvisational Strategies (+Q3) in that both intentionally chooses a higher-risk path over a higher control strategy (+C). Yet, because the process is not a quick and responsive adaptation to real-time information (+R), Consilience models (+S, +D) brings the strategy back full circle to strategic stances that have longer time horizons in mind (+S) with a significantly lower chance of a pay-out and more interconnected dynamic parts that need to align. The Consilience strategist is thus the ultimate rebel strategist that breaks from the established rhythm and perception on resources. This type of problem solving and innovation is most commonly exemplified when decision-makers recognize social patterns according to Bourdieu's theory of social practice but then intentionally chooses to "play by a different set of rules" in pursuit of a win.

This Consilience Strategist quadrant is also the area where the literature's logic on *competitive* strategy starts to break down. Whereas a strategy of 'doing what everyone else is doing' (+C) means a shrinking pie as new entrants take position and/or price wars keep pushing prices lower, overall profitability declines for the entire industry. This is absolutely grounds for looking at strategy as a competition or war. However, an example of competitors engaging in a differentiation strategy (+D) would be the practice of antitrust strategies were companies like Coke and Pepsi or employers like Apple and Google can make deals to not compete on price in the same week or for the same employee and in the process, destroy themselves. Such cooperative measures allow for the laws of gravity (and the nation-state) on *competitive and cooperative* strategy to evolve. Differentiation (+D), as oppose to Conformity (+C), has the capacity to expand the pie by staking out some sustainable position based on a unique advantage created by a longer-term optimization strategy.

Economist Paul Romer's aphorism: "A crisis is a terrible thing to waste," especially rings true amidst a situation shrouded in chaos or uncertainty as these transmutation strategies lend itself well to collaboratively shaping an ecosystem before the rules are written or re-written. This also means evolving the vantage point on traditional notions of social power as is commonly leveraged in (+C) strategy models.

Theories in Action

A chronological table of management strategy theories driven largely by a systematic (+S) and differentiating (+D) stance of strategic decision-making under uncertainty is available in Table 12.4. A comprehensive list is available in Appendix E.

In observing the summary table, it is strikingly different from the other three quadrants' summary table. First it is the smallest accounting for only 27 of the 100 seminal contributions in Strategy to date. Secondly, even though consilience theories have been around since the 19th century, the advent of the first Consilience Strategy theory contribution was not until the 1980s. Thirdly, there is a very strong tendency for a theorist to not only develop the forth quadrant but also do so in context with all three other quadrants. Lastly, there is a clear trend of scholars collaborating when they make Consilience Strategy contributions.

Featured amongst the theories coded in this list as having a strong Consilience Strategic stance are strategists who innovate by doing *something new*. This includes strategies on finding or creating uncontested new markets as first articulated in "*Creating New Market Space*" and then further fleshed out in the mainstream minting of the concept of "*Blue Ocean Strategy*" (Kim & Mauborgne, 1999, Kim & Mauborgne, 2004). Other publications labelled seminal, include "*The Art of Design*" (Roth, 1999), "*Reinventing Your Business Model*" (Christensen, Kagermann, Johnson, 2008) and "*Discovering New Points of Differentiation*" (MacMillian, McGarth, 1997).

Year	Model Name	Theorist(s)	Q1	Q2	Q3	Q4
1986	S-Curve	R. Foster				Q4
1987	Mintzberg's 5 Ps	Henry Mintzberg	Q1	Q2	Q3	Q4
1989	Strategic Intent	Gary Hamel and C.K. Prahalad	Q1	Q2	Q3	Q4
1990	Business Process Re-Engineering (BPR)	Michael Hammer	Q1	Q2	Q3	Q4
1993	Ecosystem Strategy	James F. Moore				Q4
1996	Formulation and Implementation	Mintzberg, & Quinn	Q1	Q2	Q3	Q4
1996	Continuous Strategy Process (BS)	Robert S. Kaplan, and David P. Norton	Q1	Q2	Q3	Q4
1996	Value Net Framework	Brandenburger & Nalebuff				Q4
1997	Strategy under Uncertainty	Courtney, Kirkland, & Viguerie.	Q1	Q2	Q3	Q4
1997	Dynamic Capabilities	David Teece	Q1	Q2	Q3	Q4
1999	Profit Patterns	Slywotzky, Morrison & Moser	Q1			Q4
2000	Three Horizons of Growth	Baghai, Coley, & White	Q1	Q2	Q3	Q4
2000	Sevein Degrees of Freedom for Growth	Baghai, Coley, & White	Q1	Q2	Q3	Q4
2002	Bottom of the Pyramid	C.K. Prahalad and Stuart L. Hart	Q1	Q2	Q3	Q4
2002	Sustained Temporal Dynamics	Robert R. Wiggins, Timothy W. Ruefli	Q1	Q2	Q3	Q4
2002	Creating shared value (CSV)	Michael Porter and M. Kramer				Q4
2003	Open Innovation	Henry Chesbrough	Q1	Q2	Q3	Q4
2004	Value Innovation	W. Chan Kim and Renee Mauborgne		Q2		Q4
2005	Strategy Canvas	W Chan Kim and Renée Mauborgne				Q4
2010	Four Dimensions of Management	Julian Birkinshaw	Q1	Q2	Q3	Q4
2010	Adaptive Advantage	Reeves, Deimier, Morieux, & Nicol	Q1	Q2	Q3	Q4
2011	Options and Games Competitive Strategy	Chevalier-Roignant & Trigeorgis	Q1	Q2	Q3	Q4
2012	Social Empowerment	Nilofer Merchant	Q1			Q4
2015	Strategy Palette	Reeves, Haanaes, & Sinha	Q1	Q2	Q3	Q4
2015	Innovation Strategy	Gary P. Pisano			Q3	Q4
2016	Complex Adaptive Systems (CAS)	Reeves, Levin, & Ueda	Q1	Q2	Q3	Q4

Table 12.4. – Chronologic emergence and development of seminal Consilience anchored strategy models

Also, in addressing the challenges caused by disruptors are "*The Empire Strikes Back: Counterrevolutionary Strategies for Industry Leaders*," (D'Aveni, 2002) and *Surviving Disruption* (Christensen & Wessel, 2012) detailing systematic ways to

determine when it is too soon to abandon your business to a disruptor (+D). Much of Porter's later work would also fit here.

Consilience Theory Coding Case Study

An example of a seminal strategy model and theory claimed outside the discipline of Strategy but intricately important and valuable at showcasing key components of the Transmutation Strategy would be Elenor Ostrem's (1990) common pool resource (CPR) management strategies. Common property systems typically protect the core resource and allocate the fringe resources through complex community norms of consensus decision-making. Common resource management has to face the difficult task of devising rules that limit the amount, timing, and technology used to withdraw various resource units from the resource system. Setting the limits too high would lead to overuse and eventually to the destruction of the core resource while setting the limits too low would unnecessarily reduce the benefits obtained by the users.

Analysing the design of long-enduring CPR institutions, the theory identified eight design principles which are prerequisites for a stable CPR arrangement:

1. Clearly defined boundaries
2. Congruence between appropriation and provision rules and local conditions
3. Collective-choice arrangements allowing for the participation of most of the appropriators in the decision-making process
4. Effective monitoring by monitors who are part of or accountable to the appropriators
5. Graduated sanctions for appropriators who do not respect community rules
6. Conflict-resolution mechanisms which are cheap and easy of access
7. Minimal recognition of rights to organize (e.g., by the government)
8. In case of larger CPRs: Organization in the form of multiple layers of nested enterprises, with small, local CPRs at their bases.

We thus observe the theory as taking a differentiated (+D) view on power as enterprises of various sizes are recognized for bringing different resource to a collaboration. And even though 'community rules' need to be defined (+S), conformed to (+C) and graduated sanctions need to be implemented in response to violations (+R), it becomes evident that Revolutionary Strategies need all three the other quadrants as (shorter-term) building blocks for (longer-term) sustainable change.

Applied Consilience Strategy Case Study

One case study exemplifying the concept of Conscience Strategies (+S, +D) could include Novo Nordisk in a case study compiled by Reeves, Haanaes, & Sinha, (2015). To win in the Chinese diabetes care market during the 1990s, Novo couldn't predict the exact path of market development, since the diabetes challenge was just beginning to emerge in China. However, by collaborating with patients, regulators, and doctors, Novo Nordisk could influence the rules of the game. Now, Novo is the uncontested market leader in diabetes care in China, with over 60 percent of the insulin market share.

12.6. Grand Theories (and Theorists) on Strategy (+S, +R, +C, +D)

Ultimately there are two strategy scholars whose work has shown up repeatedly in making new and sizeably novel contributions to Management Strategy since the advent of the discipline: Michael Porter and Henry Mintzberg.

In many respects the two strategy scholars are different. Porter focuses on deliberate strategies like the 5 Forces (1979), Niche Strategy (1980), Value Chain (1985), Diamond Model (1990), Three Factor (1996) where the past can help predict the future. Mintzberg's strategies on the other hand focuses on emerging strategies (1987), Formulation and Implementation (1996) which takes the vantage point that strategy emerges over time as intentions collide with and accommodate a changing reality. Emergent strategy is a set of actions, or behaviour, consistent over time, "a realized pattern [that] was not expressly intended" in the original planning of strategy. Emergent strategy implies that an organization is learning what works in practice.

Though the two scholars may not necessarily see eye-to-eye on the details of models and theories, one important point stands out when mapping their respective theories to the Strategic Decision-Making under Uncertainty Model: Much like the field of strategy both these scholars have evolved over the course of their respective careers to also touch on each of the four different quadrants of the Strategic Decision-Making under Uncertainty Model.

Porter's Strategy Theory Journey

Porter's kicked off his career by kicking against the establishment's laser-like focus on 'competition and price' by introducing four additional competitive forces (1979). As depicted in Appendix E, Porter contributed many more seminal and value added theories over the decades with the focus initially on more complex Classic Rational Strategies (+S, +C) but also in later years started addressing Improvisational strategies (+R, +D) and Creating Shared Value (+S, +D).

Ultimately it was 17 years after his first article that Michael Porter addressed the 'What is Strategy?' and created five categories (1996) for strategies to be filed under:

1. Seeking a single ideal competitive position in an industry (+S, +C).
2. Benchmarking and adopting best practices (+S, +C).
3. Aggressive outsourcing and partnering to improve efficiencies (+S, +C).
4. Focusing on a few key success factors, critical resources, and core competencies (+C).
5. Rapidly responding to ever-evolving competitive and market changes (+R, +D).

Mintzberg's Strategy Theory Journey

Mintzberg also kicked off his career around the same time as Porter by challenging the establishment's Classic Rational Strategies (+S, +C), but instead of going deeper into the complexity like Porter, Mintzberg instead went wider and introduced the responsive strategy factors (Mintzberg, 1973). A few year later he also launched the scholarly dialogue for Improvisational Strategies (+R, +D)[6] and dynamism (+L)[7] (Mintzberg, 1987). But ultimately it was his 5 Ps of Strategy that brought the discipline full circle (in the context of the Strategic Decision-Making under Uncertainty Model) for the first time.

Mintzberg's (1978) 5 Ps of Strategy presented categorical expansions to the concept of Strategy that extended beyond the generally accepted 'planning' (which is the first

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[6] See Chapter 4.4 for a detailed discussion of Mintzberg's Emerging and Dynamic behaviors theory
[7] See Chapter 2.4 for a detailed discussion of Mintzberg's Dynamism Theory

P). To the list he added: Strategy as a *ploy, perspective, pattern,* and *position.* In the original 1987 theory these functions reflect distinct categories, but viewed in the context of the Strategic Decision-Making under Uncertainty Model these same categories can now also be observed as relative to one another based on the dominance of the different strategy drives. The mapped model is presented in Figure 12.5.
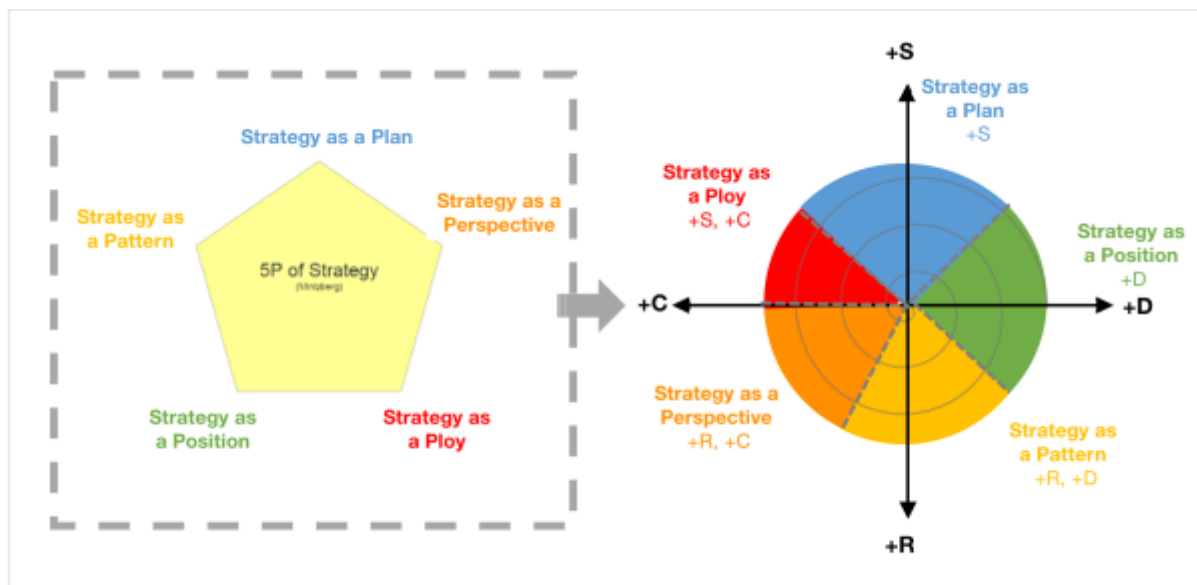
Figure 12.5 – Mintzberg's (1978) 5 Ps of Strategy mapped onto M³

Strategy can be a plan (+S) – some sort of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation (+C). By this definition strategy have two essential characteristics: they are made in advance of the actions to which they apply, and they are developed consciously and purposefully. Coded, it is thus systematic (+S) and a mechanism for a broader body of stakeholders to conform to (+C)

Strategy can be a ploy (+S, +C) – as a plan, a strategy can be a ploy too, really just a specific manoeuvre indented to outwit an opponent or competitor. Coded, it is thus premeditated (+S) and an exercise or exploitation of power or knowledge over another conforming entity (+C).

Strategy can be a perspective (+R, +C)– its content consisting not just of a chosen position, but of an integrated way of perceiving the world. Strategy in this respect is to the organizations what personality is to the individual. What is of key importance

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is that strategy is a perspective shared by members of an organization, through their intentions and/or by their actions. In effect, when referring to strategy in this context, it primes the concept of the collective mind – individual united by common thinking and/or behaviour. Coded it is thus perceiving and responding (+R) with assimilation (+C) to cultural norms of a collective.

Strategy as a pattern (+R, +D) – if strategies can be intended (whereas general plans or specific ploys) they can also be realized. In other words, defining strategy as plan is not sufficient; there is also a need for a definition that encompasses the resulting behaviour (+R). Strategy as a pattern – specifically, a pattern in a stream of actions. Strategy is consistency in behaviour, where or not intended. The definitions of strategy as plan and pattern can be quite independent of one another: plans may go unrealized, while patterns may appear without conception. Coded, the patterning thus moves the plan "off the boardroom shelf' and onto to "shop floor" with action that responds in real-time (+R), to real threats or external factors that was not considered in theory (+D).

Strategy as position (+S, +D)– specifically a means of locating an organization in an "environment". By this definition strategy becomes the mediating force, or "match", between organization and environment, that is, between the internal and the external context. Coded, the position is thus the marriage of that what is intended (+S) and practical (+R) and the differentiated position (+D) is also one more readily to optimize anticipated or potential change relative to high control competing positions.

Most recently both Porter and Mintzberg have also converged onto *Consilience Decision-Making under Uncertainty* or *Concillence Strategies* (+Q4) all be it in radically different ways. Porter has been focusing on Corporate Social Responsibility, suggesting a fairly fundamental change in how corporate American runs itself. Meanwhile, Mintzberg has been working on *Rebalancing Society: radical renewal beyond Smith and Marx. This convergence of two distinct branches of strategy with fundamentally different lenses is yet further evidence of the emergence of consilience in itself.*

As is evident from coding not only the ten combined seminal contributions by Porter and Mintzberg but also various other scholars in the field of Strategic Management to

date, is that all the different drives have at this time in history been explored and introduced into management literature. This serves as evidence of the existence of all four drives and also provides insight in types of focal points the different drives have enjoyed over the past century.

The fact that every model and theory to this date can be classified according to the four strategic decision-making under uncertainty modes also affirms validity on the path of understanding how the model and theory come together. The emergence of new patterns and interrelatedness furthermore provides insight into the concept of emergence, development, change, adaptation and transformation itself.

The four modes conceptualize relations to social constructs as well as objects or natural sciences in the field of management strategy. Strategies focused inside the field of control results in Classic Rational (+S, +C) or Behavioural Strategies (+R, +C), whereas strategies focused outside the field result in Improvisational (+R, +D) or Consilience Strategies (+S, +D). Strategies like Behavioural (+R, +C) and Improvisational (+R, D) Strategies focused on intuition and awareness for market change would have a shorter time horizon and fall under Responsive Strategies (R+) and finally strategies like Classic Rational (+S, +C) and Consilience (+S, +D) that have a more stable platform to work off and a longer time horizon can afford to plan and calculate investments around Systematic Strategies (+S).

12.4. Conclusion

Ultimately this chapter set out to do look at strategy theories in two ways: literature for the strategic decision-making under uncertainty model and theory, as well as to review empirical data because all researchers are in fact strategic decision-makers under uncertainty.

In the first instance, the literature confirms that the same four drives (+S, +R, +C, +D) and the same four quadrants that characterize decision theory can in fact also be represented in strategy even though the vocabulary used may different. Thus, the connection of linking decision theory to strategy literature is established.

In the second instance the chronology revealed that even though the literature of decision theory and management strategy did not unfold over the same timeline, both started with Classic Rationality (+S, +C), then moved to Behavioural Economics (+R, +C), and most recently strong cases can be made that seminal contributions had also been occurring for Improvisation (+R, +D) and Consilience (+S, +D). It is also understandable that in both cases academia has (and is likely to continue to) lean towards the systematic, objective and controlled classic rational strategies (+S, +C) since that is most dominantly the arena in which most scholars have been trained, where the higher indexed journals chose to focus, where funding agencies have higher assurances of lower risk outcomes. If that is true, a deliberate decision will need to be made to not neglect theories outside of the first quadrant, as each have a role to play in the advancement (+L) of the social sciences via decision-making and strategy. Evidence to date supports that it is through the advancement of all the quadrants levels of complexity, emergence of new levels of sophistication in classic rational strategies (+S, +C) can also be achieved.

Finally, by using the four modes to code over one hundred of the most seminal strategy theories (and recognising that all the modes can be accounted for) also reinforces that the same phenomenon has been identified by other researchers even though different terminologies may have been used. It also addressed the concern raised in Chapter 3 with regards to the necessary number of ethnographies needed to construct a new theory. Chapter 13's empirical data furthermore suggests that it would have been unlikely that a six or (additional) ethnographies would have illuminated gaps in basic tenants of the model that emerged from ethnographic data.

CHAPTER 13

CONCLUSION

What started out as inquiry into inter-organizational collaboration in early stages of collaborative relationship formation to articulate conditions that give rise to emergent innovation, ultimately resulted in a descriptive theory capable of integrating modes, models and momentum and a new epistemology being introduced into management studies.

Philosophically this thesis commenced with a utopian philosophical position articulated by British philosopher William Whewell as 'consilience of inductions' - a process by which an induction, obtained from one class of facts, coincides with an induction obtained from a different class. Thus, consilience is a test of the truth of the theory in which it occurs 1840:74). More than a century and a half later the call for empirical evidence on how this gets accomplished from a socio-political standpoint once again sounded with US Medal of Science and two time Pulitzer Prize winner O.E. Wilson's bestseller "Consilience: The Unity of Knowledge." The book resurrected the revolutionary idea and developed it further from a biology heavy focus on the integration of fields.

However what critics like biologist peer H. Allen Orr (Boston Review, 1998) perceived as the central limitation, to an otherwise well-articulated philosophy, was the need for a more thoughtful and explicit account of the collaboration methods leading to the emergent phenomena of innovation as a desirable outcome for consilience. Wilson's work on the social science part of his theory was primarily theoretical as he discussed at great lengths complex problems like the 'environmental crisis' that needed to be addressed collaboratively. Wilson's theoretical premise was: "If economists and ecologists should put their heads together to incorporate measures of environmental health into traditional economic indices they should be able to come up with solutions that do not involve the collapse of the social science."

This thesis' started out as a response to scientific consilience community's request for empirical data to shed light on the understanding the emergence of innovation in complex inter-organizational collaborations that need multiple stakeholders at the

table to solve a problem. Historically the arena of collaboration and collective decision-making (or problem solving) under uncertainty had been overrun by research on power dynamics and the philosophical underpinnings of Pierre Bourdieu and Stewart Clegg. These behaviourists decision-making theorists and their theory contributors have for decades been building up a body of knowledge on how in a board room full of strategic decision-makers it is the social hierarchy, not the objective and detached weighing of facts, that will dictate the strategic direction and degree of creativity in the innovation in their actions. Lower power 'decision-makers' were bound to fall in line once the more powerful strategic decision-makers made and marketed their decision's point of view.

Not disputing traditional notions of power in collaborative decision-making this thesis sought out a deviance sample to showcase the conditions that contribute to consilience decision-making and the emergence of higher-risk innovation. The five real-time international ethnographies over several years revealed that consilience strategic decision-making do exist and are not only rationalized retrospectively (Collaboration 5 - Healthcare). However, in order to achieve it, the behavioural and classic rational strategic decision-making under uncertainty is necessary and important in order to get to the more challenging consilience types of decision-making. The empirical data also revealed that an additional higher-risk innovation model group exist as was observed and classified as improvisational strategy decision-making under uncertainty (Collaborations 3 and 4 – Economic Development and the Software Start-up). Neither, however, remained in that single mode for an extended period of time, but it becomes apparent how that mode of short-term decision-making also builds longer-term value. As expected Classic Rational (C1) and Behavioural (C2) Strategic Decision-Making under Uncertainty also existed and provided helpful comparative baseline points for assembling and illuminating complexities and interdependencies associated with each of the four types of Strategic Decision-Making under Uncertainty modes.

This study concludes ultimately that opportunity exists to expand the monoculture view of strategy as a systematic mechanism for conforming decision-making under uncertainty. As was evident from ethnographic embedment with strategic experts across five different industries, the emergence and development of a single idea with potentially high velocity impact depended not only on *systematic* and *conforming*

modes, but also their respective polar opposite counter parts: *responsive* and *differentiating modes*.

The M³ theory and model of this thesis introduces a descriptive framework for strategic decision-making in uncertain and changing environments that transcends the dichotomous classic *rationality* and *bounded rationality*. It weighs in specifically on the purposeful pursuit of higher levels of uncertainty where strategy can benefit with a conscious and deliberate systematic approach. This would be *hyper rationality decision-making* under uncertainty. However, it also weighs in on strategies that benefit from higher levels of uncertainty with impulsive and responsive approaches. These would be *improvisation*.

As presented in figure 13.1, the resulting M³ theory is unique in its ability to present complex strategies as essentialist (modes), relative (models), and dynamic (momentum) to plot the trajectory of emergence, change, transformation and adaptation over time. The reason the theory and model can flex to accommodate a variety of data types is partially due to the *social realism* epistemology framework foundation wherein it has been created.
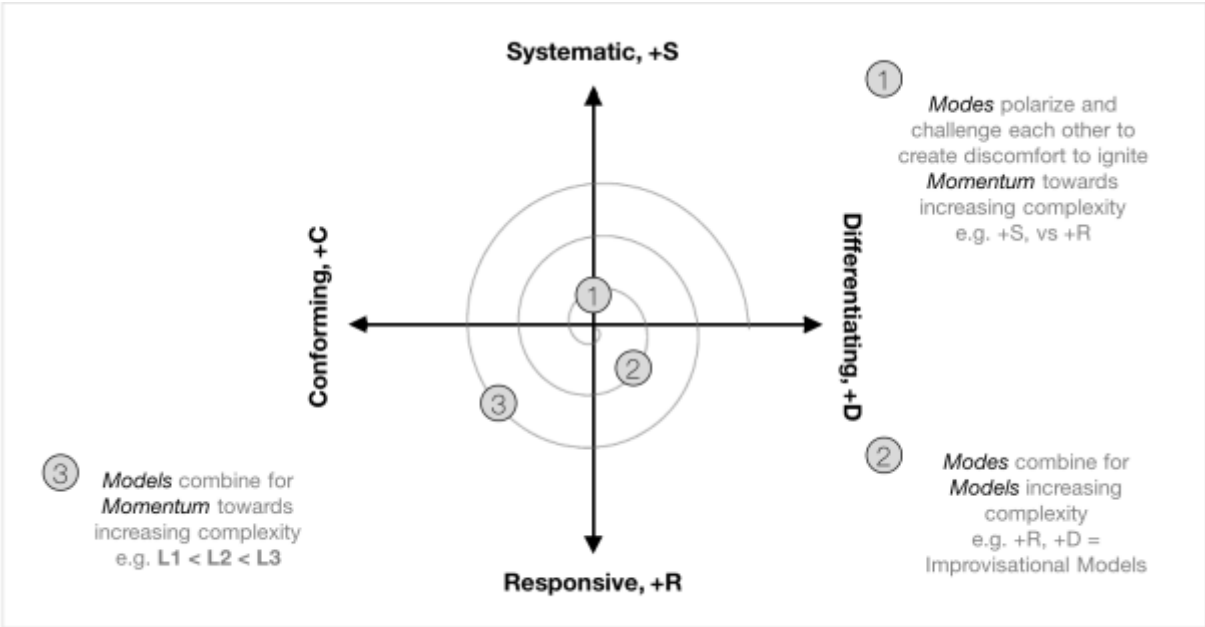
Figure 13.1. – M³ Strategic Decision-Making Uncertainty: modes, models and momentum

This thesis constructed and assessed the validity of the M³ Theory is informed by three distinct but interrelated and simultaneous empirical streams of data:

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i   *field data* from five ethnographic case studies, with research participant feedback loops;

ii *the mapping of over 200 published management theories* to review the evolution of strategic decision-making theory over the past one hundred years; and

iii *prototyping* the principles of the M³ theory during the construction of this doctoral thesis.

Practical Implications

The practical implications of the thesis can be used to inform strategic decision-making under uncertainty in a variety of domains. The strategic decision-maker engaged in collaborative idea generation and development can increase the productivity and efficiency by identifying their personal and organizational strategic modes, models and momentum on the type of change they are fundamentally pursuing. By aligning the idealized socio-cognitive strategic position with the communication mediums used (modes), the type of workshops selected (models), and the type of movement that the collaboration is comfortable with (momentum). Additionally, the theory can help inform on the type of lower level participants involved, and the choice in intermediary facilitators of the process, users can increase the purposeful generation and development of ideas for the right type of change at the right time.

Similarly, this theory can be used by a variety of the strategic decision-makers: with researchers; those doing grant applications, ethics approval paperwork, or engaging with data and writing papers or books can use the vocabulary and framework to steer into unknown and unknowable territory with less penalty and more reward. Each decision-maker also stands to benefit from the framework as it applies to scoping and tracing unknown unknowns. To them the model provides a canvas to help anticipate particularities of small sample sizes, over reliance on non-representative populations, and perceptions of social conformity that may not align with behaviour.

Theoretical Implications

Fundamentally the model offers an integrative framework from within which strategic decision-making under uncertainty can be conceived with higher levels of

clarity and an expanded vocabulary for addressing components associated with higher levels of uncertainty. Specifically, the model subsumes the field of innovation, change management and decision-making and maps well developed but disparate concepts in meaningful relation to one another.

Adopting and extending the epistemology of Social Realism from Sociology, the M³ Theory also makes new theoretical contributions as it introduces management literature to a new methodology for framing knowledge that is simultaneously essentialist and relativist. In the Model three layers of information can simultaneously be represented in the plotting of a statistical stance. The layers are:

- *essentialist* modes – the mapping of a static categorical position within the wider uncertain environment;
- *relative* models – the mapping of a particular position relative to another strategic stance; or
- *dynamic* momentum – the mapping of the movement of a strategic stance over a period of time.

Circling back to Chapter 1 and the broader construct of Agnoiology and strategically dealing with the unknown (and possibly knowable unknown), Michael Smithson (2016) likens ignorance to an island. As our island of knowledge grows larger and larger, so too the shoreline expands. In his analogy, the shoreline represents the intersection of knowledge meeting ignorance. As we incrementally gain ground on knowledge we also improve our ability to ask the appropriate questions that enable us to learn more thus perpetuate the cycle of learning.

Though at the face value it may seem like combing the metaphoric shoreline would be a highly attractive proposition for curious strategic decision-makers, it is also worth noting that with the exhilaration of novelty seeking also comes the balance of failure, frustration and fatigue. In connecting with Thomas S. Kuhn's (1962) *The Structure of Scientific Revolutions*, the strategic decision-maker's challenge is to intellectually (+S) and affectively (+R) navigate this territory between the known (+C) and unknown (+D), directly confronting preconceptions and inconsistencies in data. Though, the centre of the island may present itself as safer and more certain, it cannot be assumed that there will always be enough space and resources to remain in the safe comfort zone of known knowledge with small incremental advances. It may also be

irresponsible to squander high capacity strategic talent by only expecting or demanding small incremental advances to benefit humanity long-term or when some developments demand a revolutionary paradigm shift. Considering the quadratic advances in advanced technology, social network dynamics over the last 15 – 25 years, and even changing global governance, the time may have come to re-evaluate how scholarly, educational and management values and incentives are prioritising advancing knowledge and skill sets in dealing with unknowales and unknowns.

Ultimately the M^3 Theory of Strategic Decision-Making under Uncertainty offers a new set of tools for innovators to manage uncertainty at the shoreline to keep scaling knowledge and capacity building under uncertainty. This thesis offers decision-makers and collaborators resources for comparing, developing and evolving strategic stances in interesting, dangerous, exciting and uncertain environments. By balancing and integrating the momentum generated by the opposing drives of systematic (+S), responsive (+R) strategies, as well as conforming (+C) and divergent (+D) strategies, the combination of drives can be deployed to keep evolving humanity's complex relationship with the ever-changing constant paradox of unknownables and unknowns.

APPENDICES

APPENDIX A

Interdisciplinary Survey of Historic Perspectives on

Decision-Making under Uncertainty Coded

(pre-commercial internet)

Year	Q1	Q2	Q3	Q4	Theorist(s)	Origin	Field	Concept
Prehistory		Q2				Chinese	Literature	For millennia, human decisions guided by interpretations of entrails, smoke, dreams and the like; hundreds of generations of Chinese rely on the poetic wisdom and divinations instructions complied in the I Ching
Prehistory		Q2				Greek	Literature	For millennia, human decisions guided by interpretations of entrails, smoke, dreams and the like; The Greeks consult the Oracle of Delphi. Prophets and seers of kinds peer into the future
600 B.C.			Q3		Lao Tzu	Chinese	Philosphy	Lao Tzu teaches the principle of "nonwillful action": letting events take their natural course
600 B.C.		Q2			Confucius	Chinese	Philosphy	Confucius says decisions should be informed by benevolence, ritual, reciprocity, and filial piety
500 B.C.	Q1					Greek	Politics	Male citizens in Athens, in the early form of democratic selfgovernment, make decisions by voting
400 B.C.		Q2			Plato	Greek	Philosophy	Plato asserts that all perceivable things are derived from eternal archetypes and are better discovered through the soul than through senses
400 B.C.	Q1				Aristotle	Greek	Philosophy	Aristotle takes an empirical view of knowledge that values information gained through the senses and deductive reasoning
399 B.C.	Q1	Q2				Greek	Law	In an early jury-trial decisions, 500 Athenian citizens agree to send Socrates to his death
333 B.C.				Q4	Alexander the Great	Greek	Politics	Alexander the Great slices through the Gordian knot with his sword, demonstrating how difficult problems can be solved with both strokes
49 B.C.				Q4	Julius Caesar	Roman	Politics	Julius Caesar makes the irreversible decision to cross the Rubicon, and a potent metaphor in decision making is born
800s	Q1					Hindu-Arabic	Mathematics	The Hindu-Arabic number including the zero, circulates throughout the Arab empire, stimulating the growth of mathematics
1000s	Q1				Omar Khayyam	Hindu-Arabic	Mathematics	Omar Khayyam uses the Hindu-Arabic number system to create a language of calculation, paving the way for the development of agenda
1300s	Q1					English	Religion	An English friar proposes what became known as "Occam's razor", a rule of thumb for scientists and others trying to analyze data: the best theory is the simplest one that accounts for all evidence
1600s					Thomas Hobson			Stable keeper Thomas Hobson presents his customers with an eponymous "choice": the horse nearest the door or none
1602				Q4	William Shakespeare	English	Literature	Hamlet facing arguably the most famous dilemma in Western literature, debates whether "to be, or not to be"
1620				Q4	Francis Bacon	English		Francis Bacon asserts the superiority of inductive reasoning in scientific inquiry
1641	Q1				Rene Descartes	French		Rene Descartes proposes that reason is superior to experience as a way of gaining knowledge and establishes the framework for the scientific method
1654	Q1				Pascal & de Fermat	French	Mathematics	Prompted by a gamblers' question about the "problem of points", Blaise Pascal and Pierre de Fermat develop the concept of calculating probabilities for chance events
1660	Q1				Blaise Pascal	French	Mathematics	Pascal's wager on the existence of God shows that for a decision maker the consequences, rather than the likelihood, of being wrong can be paramount
1738	Q1				Daniel Bernoulli	Swiss	Mathematics	Daniel Bernoulli lays the foundation of risk science by examining random events from the standpoint of how an individual desires or fears each possible outcome
1800s	Q1				Carl Friedrich Gauss	German	Mathematics	Carl Friedrich Gauss studies the bell curve, described earlier by Abraham de Moivre, and develops a structure for understanding the occurrence of random events
1907	Q1				Irving Fisher	American	Economics	Economist Irving Fisher introduces the net present value as a decision making tool, proposing that expected cash flow be discounted at the rate that reflects an investment's risk
1921	Q1				Frank Knight	American	Economics	Frank Knight distinguishes between risk, in which an outcome's probability can be known (and consequently insured against), and uncertainty, in which an outcome's probability is unknowable
1938		Q2			Chester Barnard	American	Management	Chester Barnard separates personal from organizational decision making to explain why some employees act in the firm's interest rather than their own
1944	Q1				John von Neumann & Oskar Morgenstern	Hungarian-; & Austrian-American	Economics	John von Neumann and Oskar Morgenstern in Game Theory describe a mathematical basis for economic decision makingLike most theorists before them, they take the view that decision makers are rational and consistent
1946			Q3			American	Industry	The Alabe Crafts Company of Cincinnati markets them Magic 8 Ball
1947		Q2			Herbert Simon	American	Management	Herbert Simon argues that because of the costs of acquiring information, executives make decisions with only "bounded rationality" – they make do with good enough decisions Rejects the notion that decision makers behave with perfect rationality
1948				Q4		American	Industry	Project RAND separates from Douglas Aircraft and became a non-profit think tank Decision makers uses its analyses to form policy on education, poverty, crime, the environment, sand national security
1950s				Q4		American	Industry	Research at the Carnegie Institute of Technology and MIT led to the development of early computer-based decision support tools
1951				Q4	Kenneth Arrow	American	Economics	Kenneth Arrow introduced the Impossibility Theorem which holds that there can be no set of rules for social decision making that fulfils all the requirements of society
1952	Q1				Harry Markowitz	American	Economics	Harry Markowitz demonstrates mathematically how to choose diversified stock portfolios so that the returns are consistent
1960s	Q1				Learned, Christensen, Andrews and others	American	Management	Edmund Learned, C. Roland Christensen,Kenneth Andrews and others develop the SWOT (strengths, weaknesses, opportunities and threats) model of analysis, useful for decision when time is short and circumstances complex
1961				Q4	Joseph Heller	American	Literature	Joseph Heller's term "catch-22" becomes a popular shorthand for circular, bureaucratic illogic that thwarts good decision making
1965				Q4		American	Industry	Corporations use IBM's System/360 computers in stat implementing management information systems
1965	Q1	Q2			Roger Wolcott Sperry	American	Medicine	Nobel laureate Roger Wolcott Sperry begins publishing research on the functional specialization of the brain's two hemispheres
1966				Q4		American	Linguistics	"Nuclear option" coined with respect to developing atomic weapons and used to designate a decision to take the most drastic course of action
1968	Q1				Howard Raiffa	American	Economics	Howard Raiffa's Decision Analysis explains many fundamental decision making techniques, including decision trees and the expected value of sample (as opposed to perfect) information
1970	Q1				John D.C. Little	American	Engineering	John D.C. Little develops the underlying theory and advances the capability of decision-support systems
1972		Q2			Irving Janis	American	Psychology	Irving Janis coins the term "groupthink" for flawed decision making that values consensus over the best result
1972			Q3		Cohen, March & Olsen	American	Management	Michael Cohen, James March and Johan Olsen publish "A Garbage Can Model of Organizational Choice" which advices organizations to search for their information trash bins for solutions thrown out earlier for lack of a problem
1973	Q1				Black, Scholes & Merton	American	Finance	Fischer Black, Myron Scholes and Robert Merton show how to accurately value stock options, beginning a revolution in risk management
1973		Q2	Q3		Henry Mintzberg	Canadian	Management	Henry Mintzberg describes several kinds of decision makers and positions decision making within the context of managerial work
1973	Q1	Q2			Vroom & Yetton		Management	Victor Vroom and Philip Yetton develop the Vroom-Yetton model which explains how different leadership styles can be harnessed to solve different types of problems
1979	Q1	Q2			Amos Tversky & Daniel Kaheman	American & Israeli	Psychology	Amos Tversky and Daniel Kaheman publish their Prospect Theory that demonstrates that the rational model of economics fail to describe how people arrive at decisions when facing the uncertainties of real life
1980s		Q2				American	Linquistics	"Nobody gets fired for buying IBM" comes to stand for decisions whose chief rationale is safety
1984	Q1				W. Carl Kester	American	Management	W. Carl Kester suggests that managers think of investment opportunities as options on the company's future growth
1984	Q1	Q2			Daniel Isenberg	American	Management	Daniel Isenberg explains that executives often combine rigorous planning with intuition when faced with a high degree of uncertainty
1989	Q1				Howard Dresner	American	Industry	Howard Dresner introduces the term "business intelligence" to describe the set of methods that support sophisticated analytical decision making aimed at improving business performance
1992	Q1	Q2			Max Bazerman & Margaret Neale	American	Management	Max Bazerman and Margaret Neale connect behavioural decision research to negotiations in Negotiating Rationally
1995		Q2			Anthony Greenwald	American	Psychology	Anthony Greenwald develops the Association Test, meant to reveal unconscious attitudes to beliefs that can influence judgement

APPENDIX B

Criteria for Evaluating Confessional Ethnography

Ethnographic methodology is not typically evaluated in terms of philosophical standpoint (such as positivism and emotionalism). Ethnographic studies do however need to be evaluated in some manner. No consensus has been developed on evaluation standards, but Richardson (2000: 254) provides five criteria that ethnographers might find helpful. Jaber F. Gubrium and James A. Holstein's (1997) monograph, *The New Language of Qualitative Method,* discusses forms of ethnography in terms of their "methods talk."

- *Substantive contribution*: "Does the piece contribute to our understanding of social-life?"
- *Aesthetic merit*: "Does this piece succeed aesthetically?"
- *Reflexivity*: "How did the author come to write this text…Is there adequate self-awareness and self-exposure for the reader to make judgments about the point of view?"
- *Impact*: "Does this affect me? Emotionally? Intellectually?" Does it move me?
- *Expresses a reality*: "Does it seem 'true'—a credible account of a cultural, social, individual, or communal sense of the 'real'?"

For the purposes of specifically the social realism confessional ethnography, the data presentation and analysis had been further refined to focus on *reliability*, *validity*, *juxtabosition*, *moderation*, *interlacing*, *minimalism* and *dialogic* qualities in an attempt to produce the highest quality scientifically rigorous work.

Reliability

In the context of the confessional ethnography taking a developmental snapshots approach, reliability is consistent with Hammersley (1992:67) and Kirk & Miller (1986:19) definition for being to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions. The critical categories in this thesis would thus be: 1) the developmental snapshots, and 2) the coding of the strategic drives.

In pursuit of this categorical consistency of the same observer in different occasions

the following checks and balances were introduced: five different case studies of emergent new initiatives are presented so that the categories can be understood relative to each other. Additionally, 100 strategy models were analysed for the evidence of the same drivers, an additional 100 management theories were also coded, and lastly this thesis's model development was put through the same reliability wringer as a prototype. The first four collaborations informed the model building, the fifth collaboration was a quality control check afterwards, all the strategy and seminal management models refined the definitions and complexities of the drives and the prototype sought to challenge and illuminate the optimization of all that was learned from practice and theory.

In pursuit of categorical consistency across different observers, At the point that this thesis was written [three] individuals had been briefed on the coding criteria for snapshots and drives and reliably are able to reach consensus on both the categorical snapshots and drives of the collaboration, as well as coding of drives that they have no socio-political connection to.

Validity

In the context of confessional ethnography and taking developmental snapshots on the strategic decision point that serve as primary information points in the emergence and development of ideas Validity relates Hammersly's (1992:67) and Kirk & Miller's (1986:19) definition to the representativeness of the data and the truthfulness of an ethnographer's interpretation. It expresses the extent to which an account accurately represents a social phenomenon or event.

In pursuit of the representative of the data the representative of the data is once again reiterated when the strategic drives observed in the four collaborations was consistently spotted in the fifth. It was also spotted hundreds of time in the development of strategic and management models and was indeed applicable to the development of this thesis.

In pursuit of the truthfulness of the ethnographer's interpretation observations were video and audio recorded as well as archived when possible. Additionally, formal and informal documentation such as reports, PowerPoint, collaboration spaces, emails,

texts, paper napkins, were archived. And lastly handwritten notes during an observation, field notes during a reflection period and headnotes after time has passed were all collected and referenced back to. Additionally, two very distinct tracks were taken on the field notes. The first, affective field notes were collected almost daily and chronicled passionate unfiltered responses. They were not written in English to allow for a translation barrier and the freedom to have unfiltered thoughts but often also descended into rational to do lists. The second set of field notes were a systematic and rational dialogue with the strategists and academics whose work connected. It also involved dialogue with strategists and academics whose work did not connect there was an incentive to work harder to see if it could be integrated. This dialogue was in English. Many of these conversations did not talk back unless there was a live email, phone, Skype or in-person outlet for it too.

As observed by Silverman (1993:156) respondent validation or member checking after the fieldwork has been concluded constitutes another strategy for enhancing validity. Pre-final renderings of perceptions of truth was also shared with participants to give them a chance to inform on their perceptions of truth from their vantage point and to protect their socio-political stance if this thesis could fulfil its truth without doing harm. With regards to the concern of Czarniawska-Joerges in questioning the usefulness of participants' feedback as a measure of validity, pointing out that people in the field might have political reasons for both supporting and denying claims made by the researcher (similarly Hammersley 1992; Miles 1979), this specific these may take a less traditional position. Since snapshots of ideas' evolution are driven by socio-political interests what the participants wish to convey is highly relevant to the reader of the ethnography is highly relevant. If there is a difference of opinion between perceived (or conveyed) truths this ethnography needs to create the space for it.

Juxtapositions

Under the term 'criticality' Golden-Biddle & Locke (2007), as well as Marcus & Fischer (1986) has some important observations. Golden-Biddle and Locke examined, and found that 'criticality' was achieved by challenging readers to pause and think about specific situation, by provoking them to answer questions, and by guiding readers through novel ways of thinking. Marcus & Fischer found that 'cultural

critique' is achieved when the foreign culture is held up as a mirror to the audience's culture so that readers learn something about themselves as they juxtapose cultures, assumptions and practices. Absolutely valid anchor points for this ethnography, the concern however is with the term 'criticality'.

In this ethnography perceiving the *tension* between the different opposing drives that moves ideas forward is important. However, giving equal weight to the validity of each is also important. Through the eyes of a foreign non-conformist who recognizes but rejects easy paths, the politically astute reader may experience tension that challenges their preferred strategic stance on matters. Through the affective vulnerable writing the rationalist expert may experience tension that challenges their preferred strategic stance. Likewise, if the opposing drives of conforming to generally accepted norms and systematic objective analysis is also present, in once single package, the supporting a reader in experiencing the full 360 of drives could be achieved. This model is built on the premise that all of the drives are important for transformation of an idea, so the ethnography needs to also prototype that tension.

Moderation

In this objective of illuminating clear juxtapositions it is however important to ward against being excessive or too hyper in relation to where the socially accepted norm line stand at the time of publication in the culture of academia. Behar (1996:14) warns about confessional texts becoming too autobiographical: "Self-serving and superficial, full of unnecessary guilt and excessive bravado." Van Maanen (1998:93) refers to such excesses as "vanity ethnography" where confessional ethnographic texts are reduced to private muses and demons of a field worker.

To ward against this the limitation of eight snapshots have been placed on the evolution of each collaboration. This focuses the reader's attention to flashes of the most critical events in context of the energy that was around it at the time. The energy of the field worker is important because it is the constant threat that ties all the collaborations together but it is worthless if it cannot be mirrored without funhouse distortions the mirror image and energy balance of the reader. Three actions to help with striking the a better moderation balance include: i) drawing strongly from sources other than the field worker's field notes and head notes in the pre-final draft, ii) creating the space to receive valuable additions that thoughtfully serve the central

premise of the research intent in the feedback on the pre-final draft, iii) creating a space to allow outsiders not familiar with the narratives to inform where continuity gaps or exposition can be made more clear and accessible.

Interlacing

Wrapping the actual ethnographic content around the consistent thread of the confessional field worker material with the actual ethnographic content (e.g. Behar 1996), as oppose to doing a traditional ethnographic account and then an autobiographical content at the end (e.g. Van Maanen, 1998, Kunda 1992; Rabinow 1977; Whyte 1996) also does two things. First it helps with the *moderation* discussed earlier. Behar (1996:18) observes that Interlacing the self-reflexive confessional with the actual ethnographic material also minimizes the risk of the autobiographical content overpowering the actual ethnographic content, or vice versa. Secondly, it also helps with the juxtaposition explained earlier because a constant comparison can be perceived of phenomena in relation to each other. Whythe (1996) explains that even though the confessional tale of the field worker in the appendix is effective as a tool for teaching other ethnographers about the research process, its ability to achieve [juxtaposition] (or cultural critique) is uncertain given that interest in these tales is predicated on the actual ethnography's prior success. In the interlacing the field worker prior successes and failures subservient to the context of the snapshot.

Minimalism

Just like the eight snapshots of the transformations that ideas underwent over the course of a year's collaboration are minimalist in comparison to a continuous video stream over multiple years, so too the information of the field worker self would serve the snapshot best if it does not clutter decision-making under uncertainty with horded items. Behar (1996:13) explains this point of view as: "To assert that one is a "white middle-class woman" or a "black gay man"...is only interesting if one is able to draw deeper connections between one's personal experience and the subject under study. That does not require a full-length autobiography, but it does require a keen understanding of what aspects of the self are the most important filters through which one perceives the world and, more particularly, the topic being studied. Again, reaching the right minimalistic balance requires in the final draft critically looking at the findings and discussion items that were used, or importantly not used,

and removing that which is not supporting the reader in achieving a full view of the snapshot. And just like the first five objectives before, "checking if things are as autobiographically lean as it can be without hurting the snapshot will require listening carefully to outsider opinions.

Dialogic

A dialogic space is necessary to allow field worker's perspective or memory of details to be exceeded by those of research participants with different perspective or clearer memory. If evidence of this is not found the dialogue level is not at a high enough quality. Interpretations and findings may be expounded on by the study's participants while conclusions are still in the process of formulation.

To evaluate this the pre-final review draft need to allow for space and template so that feedback can be reported and built upon. This should also serve as a check for the theory. Additionally, readers reviewing only the final draft should see clear evidence of differences between the field worker and other participant's perceptions or attitudes. Best effort should also be put forth to ensure participants' rationality if different from the field worker is as clear and articulate as possible.

APPENDIX C

EMAIL FOR CLOSING THE FEEDBACK LOOP

Dear [name of research participant in a specific collaboration],

Hope you are well and you are enjoying the last stretch of summer.

Thank you again for allowing me to follow the development of the [name of collaboration as the participant refer to it] a year or two ago as one of five ethnographies for research in emergence and strategic decision-making under uncertainty. Attached are 7 or so snapshots that stood out as the most important or revealing decision points from my vantage point over the period of time that I was involved. Specifically of interest is your take on the snapshots that YOU were involved in (as indicated by your name in red but you are also welcome to read wider). Your response to three questions are of particular interest:

1. **Snapshot picks:** From your point of view was these also the top defining moments as the project moved forward? What would you say is the final snapshot today on the project now that a year (or more) has passed?
2. **Accuracy of content**: is there any factual details or perceptions with which you disagree that could be corrected? Same applies if there was something I missed that is worth including in your opinion.
3. **Strategic stances:** On the last page is a model with four quadrants that resulted from your and the four other case studies' development. If you had to pick from the four options on the last page, what strategic stance you used for your strategic decision-making under uncertainty on this project, which would you most closely identify with? Is this similar to what you have picked on other similar projects? Was the collaborators with whom you worked in the same quadrant? Please explain.

Hope it would be convenient for you to respond in writing over the next few days? If you prefer to visit in Skype that is absolutely an option too. My skype ID is still: emmalinde.roelofse. Sincerely looking forward to your response.

Only the best,

Lindi

EMAIL ATTACHEMNT 1 (the case write-up with content almost identical to one listed in this thesis)
EMAIL ATTACHEMNT 2 (follows)

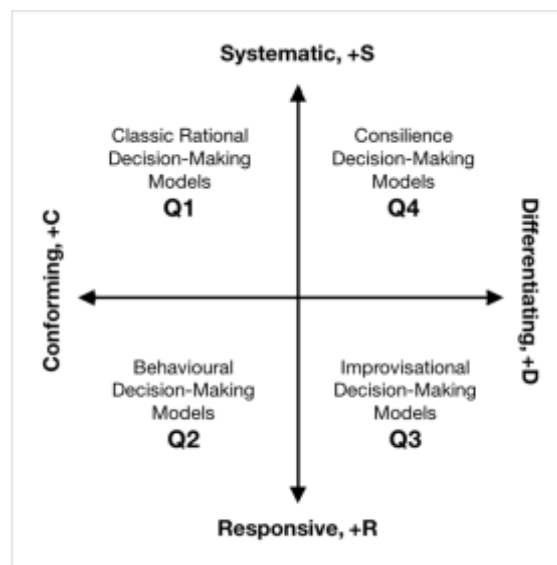# What quadrant do you identify with most on this Project?

Figure 1 – The Strategic Decision-Making under uncertainty Model

Q1. *Classic Rational Decision-Making under Uncertainty Models* (+S, +C) – are concerned with making logically sound decisions by conforming to multi-step processes following a rational, orderly and linear path from problem identification through solution. Like its two anchoring strategic drives would suggest, these models are concerned with systematic strategies (+S)[8] that conform to expectation of power centres (+C)[9]. Pioneering rational decision-making under uncertainty emerged with theorists like Blaise Pascal (1670) and his *Famous Wager,* and Daniel Bernoulli (1738) and his *St. Petersburg Paradox*. This is the type of decision-making that is most commonly taught in formal education.

Q2. *Behavioural Decision-Making under Uncertainty Models* (+R, +C) – recognize human decision-making's limitations with regards to available information, time, processing ability, and place a premium on the schemas and mental short cuts to prevent information overload. This includes the use of social cues and sensitivity to loyalty, trust and the pursuit of outcomes that satisfactorily are sufficient to meet a minimum qualification threshold. Like their two anchoring strategic drives would suggest, these models are concerned with responsive strategies (+R)[10] that conforms to expectation of power centres (+C). An astute awareness of organizational politics is often required of persons not holding comprehensive formal power and that same astute awareness also applies to people in formal power as they use it to get collaborators to conform to their strategic stance. Pioneering behavioural decision-making theorists include Nobel laureate Herbert A. Simon (1957) who introduced the models' central tenants of *bounded-rationality* and *satisficing,* and Charles Edward Lindblom (1959) who introduced *gradualism*. Today many economists also refer to Behavioural decision-making as the next frontier and holy grail. This is the type of intuitive 'feel of the game' decision-making that comes with experience.

Q3. *Improvisational Decision-Making under Uncertainty Models* (+R, +D) – is "bringing to the surface, testing, and restructuring one's intuitive understanding of phenomena on the spot, at a time when action can still make a difference" (Weick, 1996: 147). In spite of findings (Kahneman and Tversky, 1979), that humans are generally risk averse, purposeful decision-

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[8] *systematic strategies* (+S) - the drive towards increasingly sophisticated rational cognitive processes. These processes plan, purposefully compartmentalize, and regulate emotions

[9] *conforming strategies* (+C) - the drive towards converging power by adapting or conveying a socially perceived superior norm. These processes include the exploitation of existing power

[10] *responsive strategies* (+R) - the drive toward increasingly sensitized intuitive cognitive processes. These processes are reflective, associative, action-orientated and emotionally expressive

making strategies do exist where a strategic stance is taken intentionally in pursuit of higher levels of uncertainty. Higher levels of innovation are often at the core of these strategic stances as strategic decision makers respond in real-time to changes and information that might not be fully anticipated. As the two anchoring strategic drives suggest, when giving in to these differentiating (+D)[11] impulses is reactive, and the response not rationally calculated (+R), it would be synonymous with what is commonly referred to in music or theatre as *improvisation*. Pioneering management scholars have only been exploring this strategic stance in the context of management for the past decade or two because such a premium is traditionally put on control and order in management. Introducing the terminology into management literature are scholars like Moorman and Miner (1998) and Cunha, Cunha and Kamoche (1999). Improvisation is also generally accepted to include *bricolage* (Lévi-Strauss, 1967; Baker et al., 2003; Garud & Karnøe, 2003), *adaptation* (Campbell, 1969; Stein, 1989) and *serendipity* (Merton, 2002) in dealing with change and ambiguity.

Q4. Consilience Decision-Making under Uncertainty *Models* (+S, +D) –are decision-making under uncertainty that unifies knowledge and draws strength from the integration of objective knowledge from various sources. It is also the intentional and simultaneous process of creating and destroying something else of value by the same group of decision-makers. Similar to *Improvisation* models, these strategic decision-maker take big risks that could have serious personal and professional consequences if the more radically innovative approach frails, yet if it succeeds three is offer a much longer-term benefit for a greater collective. In context of the four drives it is thus the rational and calculated (+S) decision even when the (short-term) odds are against the strategic decision-maker (+D). Though this more extreme uncertainty decision model option is not as commonly modelled by decision-making theorists as in Hollywood, biographies, and media this is the dark horse that legends are made of. There has however been a considerable uptake in recent years of strategy theorists contributing models to the development of strategic stances which are the purposefully pursuing solutions in uncertain and changing environments. In Management Studies, much of the work of Clay Christensen's (1997) *Disruptive innovation*[12] and Otto Scharmer's (1999) *Theory U* and 2009 Nobel laureate Elanor Ostrom's *Common Pool Resource Management* makes contributions to this quadrant. High-level *post-conventionalism ethical decision-making* (Kohlberg, 1957) would be another example. However, the word and philosophy originates as discussed in Chapter 1 outside of management studies while advocating for an integration of knowledge as is commonly done by innovative strategic decision-makers but discussed using different vocabulary.

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[11] *differentiating strategies* (+D) - the drive towards diverging power by deviating from the norm and empowerment for exploration. These processes include novelty-seeking, sabotage, risk-taking, experimentation, play, flexibility, discovery, and higher level innovation.

[12] Note that there are two different types of disruptive innovation. The first type is where the decision-maker is simultaneously the creator and destroyer of some aspect of value if it a part of the Consilience model (+S, +D). The second type where the decision-maker is creating value for themselves but destroying value for another (competitive) party. In the latter case the disruptive innovation would be classified as a part of the improvisation model (+R, +D).

APPENDIX D

June 30 to July 1, 2014

Information, Consent and Debriefing Sheet

The objective of this research project in collaboration with Gateshead Council is to gather insight from experts connected to economic development on collaboration processes.

The aims of this research undertaking are twofold:
1. To make a theoretical contribution to strategy, trust, and inter-organizational collaboration in early stages of collaborative relationship formation; and
2. Discover and disseminate knowledge and insights for improving the process of inter-organizational collaboration for economic vitality and resiliency [Collaboration 3], Intra-organizational development of product extensions.

Debriefing on information gathered will be available via the host organization via a formal report, but you can also contact the researcher directly to obtain conclusions about the study by emailing Emmalinde Roelofse at e.roelofse@ncl.ac.uk

Some participants may also be invited to partake in an interview following the event; this is entirely voluntary.

Anonymity of the content you share will be assured unless you explicitly give permission to be identified. The event's proceedings will be recorded for research as well as economic development related purposes. As is customary at public events, please let me know if you wish to opt out of the research at e.roelofse@ncl.ac.uk.

Sincerely,

Emmalinde Roelofse
Doctoral Researcher
Strategy and Innovation
Newcastle University Business School
e.roelofse@ncl.ac.uk

APPENDIX E

Chronologic List of 100 Seminal Strategy Theories Coded

Year	Model Name	Q1	Q2	Q3	Q4	Theorist(s)
1954	Management by Objecives (MBO)	Q1				Peter Drucker
1957	Ansoff Matrix	Q1				H. Igor Ansoff
1959	Industrial Orgaization	Q1				Joe Statan Bain
1959	Gradualism	Q1	Q2			Charles Edward Lindblom
1960	Total Quality Management	Q1				Taiichi Ohno
1962	Structure follows Strategy	Q1				Alfred D. Chandler
1962	Diffusion of Innovations		Q2			Everet M. Rogers
1964	La Prospectives (like Scenario Planning)	Q1				G. Berger
1965	Scenario Planning	Q1				Herman Kahn
1965	Product Lifecycle	Q1				Theodore Levitt
1967	Five Product Levels					P. Kotler
1967	PEST Analysis	Q1				Francis Aguilar
1968	Ishikawa Diagram (or fishbone diagram)	Q1				Kaoru Ishikawa
1969	SWOT Analysis	Q1				Alfred Humphery
1970	ADL Matrix	Q1				Arthur D. Little
1970	Growth-Share Matrix	Q1				Bruce D. Henderson
1971	Andrews' Strategy Framework	Q1				Kenneth Richmond Andrews
1972	Experience Curve	Q1				[Boston Consulting Group]
1973	Red Queen Effect	Q1				Leigh Van Valen
1974	Profit Impact of Market Strategies (PIMS)	Q1				Sidney Schoeffler, Robert Buzzell & Donald Heany
1975	3Cs	Q1				Kenichi Ohmae
1976	Rule of Three and Four	Q1				Bruce D. Henderson
1977	Real Options	Q1				Merton, Brennan, and Schwartz
1978	Deleberate and Emergent Strategies	Q1		Q3		Henry Mintzberg
1978	Logical Incrementalism	Q1				James Brian Quin
1979	Five Forces	Q1				Michael E. Porter
1980	Four Phases of Strategy	Q1				Frederick Gluck, Stephen Kaufman & A. Walleck
1980	Niche Strategy	Q1				Michael E. Porter
1980	McKinsey's 7s	Q1				Robert H. Waterman, Jr.and Tom Peters
1981	BCG Advantage Matrix	Q1				Richard Lochridge
1982	Total Quality Management	Q1				W. Edwards Deming
1982	Tech. Paradigms and Tech. Trajectories		Q2			Giovanni Dosi
1982	Diversification Strategy and Profitability	Q1				R. P. Rumelt
1984	Resource-Based View	Q1				B. Wernerfelt
1985	Porter's Value Chain (Genertic Strategies)	Q1				Michael E. Porter
1986	Six Sigma	Q1				Bill Smith and Bob Galvin
1986	S-Curve				Q4	R. Foster
1986	First Mover Advantage (FMA)			Q3		G.L. Urban, R. Carter, S. Gaskin and Z. Mucha
1987	Mintzberg's 5 Ps	Q1	Q2	Q3	Q4	Henry Mintzberg
1988	Time Based Competition			Q3		George Stalk, Jr.
1989	Strategic Intent	Q1	Q2	Q3	Q4	Gary Hamel and C.K. Prahalad
1989	Benchmarking	Q1				Robert Camp
1990	Business Process Re-Engineering (BPR)	Q1	Q2	Q3	Q4	Michael Hammer
1990	Diamond Model	Q1				Michael Porter
1991	VRIO Analysis					J.B. Barney
1990	Core Competencies	Q1				C. K. Prahalad and Gary Hamel
1991	Commitment	Q1				Pankaj Ghemawat
1992	Capabilities Competition	Q1				George Stalk, Phillip Evans, & Lawrence Shulman
1992	Mass Customization			Q3		Stan Davis
1993	Distinctive Capabilities Framework		Q2			John Kay
1993	Ecosystem Strategy				Q4	James F. Moore

List of 101 strategies continues with the advent of the commercial internet

Year	Model Name	Q1	Q2	Q3	Q4	Theorist(s)
1994	Competing for the Future		Q2			Gary Hamel and C. K. Prahalad
1994	Hypercompetition			Q3		Richard A. D'aveni
1995	Return on Quality (ROQ)	Q1				Rust, Zahorik, & Keiningham
1995	Value Migration			Q3		Adrian Slywotzky
1996	Formulation & implementation of strategy	Q1	Q2	Q3	Q4	Henry Mintzberg, and James Brian Quinn
1996	Three Factor	Q1	Q2	Q3		Michael Porter
1996	Value Net Framework				Q4	Adam M. Brandenburger and Barry Nalebuff
1996	Paranoid Company			Q3		Andy Grove
1996	8-Step Model for Leading Change		Q2			John Kotter
1996	Continuous Strategy Process (Balanced Scorecard)	Q1	Q2	Q3	Q4	Robert S. Kaplan, and David P. Norton
1997	Disruptive Innovation	Q1	Q2	Q3	Q4	Clayton Christensen
1997	Strategy under Uncertainty	Q1	Q2	Q3	Q4	Hugh Courtney, Jane Kirkland, & Patrick Viguerie.
1997	Bowman's Strategy Clock	Q1				Cliff Bowman and David Faulkner
1997	Dynamic Capabilities	Q1	Q2	Q3	Q4	David Teece
1997	Triple Bottom Line	Q1	Q2	Q3		John Elkington
1998	Value Chain Deconstruction	Q1				[Boston Consulting Group]
1999	Delta Model	Q1	Q2	Q3		Arnoldo C Hax; Dean L Wilde II
1999	Digital Strategy			Q3		
1999	Strategy Dynamics			Q3		J. Moncrieff
1999	Profit Patterns	Q1			Q4	Adrian Slywotzky, David Morrison & Ted Moser
1999	Temporary Advantage			Q3		Charles H. Fine
2000	Three Horizons of Growth	Q1	Q2	Q3	Q4	Mehrdad Baghai, Stephen Coley, David White
2000	Sevein Degrees of Freedom for Growth	Q1	Q2	Q3	Q4	Mehrdad Baghai, Stephen Coley, David White
2000	Tipping Point		Q2			Malcolm Gladwell
2001	Strategy Diamond	Q1				Donald Hambrick and James Fredrickson
2001	Strategy as Simple Rules	Q1				Donald Sull and Kathleen Eiisenhardt
2002	Bottom of the Pyramid	Q1	Q2	Q3	Q4	C.K. Prahalad and Stuart L. Hart
2002	Sustained Temporal Dynamics	Q1	Q2	Q3	Q4	Robert R. Wiggins, Timothy W. Ruefli
2002	Creating shared value (CSV)				Q4	Michael Porter and M. Kramer
2003	Keller's Strategic Brand Equity Model		Q2	Q3		Kevin Lane Keller
2003	Open Innovation	Q1	Q2	Q3	Q4	Henry Chesbrough
2004	Hardball		Q2			George Stalk and Robert Lachenauer
2004	Value Innovation		Q2		Q4	W. Chan Kim and Renee Mauborgne
2005	Strategy Canvas				Q4	W Chan Kim and Renée Mauborgne
2009	Finding, formulating, & developing a doctrine	Q1				Vladimir Kvint
2009	Business Model Innovation		Q2	Q3		Lindgardt, Reeves, Stalk, & Deimier
2010	Business Model Innovation		Q2	Q3		David J. Teece
2010	The Business Model Canvas	Q1	Q2			Alex Osterwald and Yves Pigneur
2010	Four Dimensions of Management	Q1	Q2	Q3	Q4	Julian Birkinshaw
2010	Adaptive Advantage	Q1	Q2	Q3	Q4	Reeves, Deimier, Morieux, & Nicol
2011	Strategy without Design	Q1				Robert C. H. Chia and Robin Holt
2011	Options and Games Competitive Strategy	Q1	Q2	Q3	Q4	Benoit Chevalier-Roignant and Lenos Trigeorgis
2012	Social Empowerment	Q1			Q4	Nilofer Merchant
2013	Capturing Many Possible Future Histories	Q1				Alexander Wissner-Gross, and Cameron Freer
2013	Algorithmic Strategy	Q1	Q2			Tyler Cowen
2013	Five-Step Strategy Model	Q1				A.G. Lafley and Roger Martin
2013	Transient Competitive Advantage			Q3		Rita Gunther McGrath
2015	Innovation Strategy			Q3	Q4	Gary P. Pisano
2015	Strategy Palette	Q1	Q2	Q3	Q4	Martin Reeves, Knut Haanaes, Janmejaya Sinha
2016	Complex Adaptive Systems (CAS)	Q1	Q2	Q3	Q4	Martin Reeves, Simon Levin, and Daichi Ueda

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