MULTIPLE FRAMINGS AND DIVERGENT RESPONSES: A COGNITIVE ACCOUNT OF INCUMBENT RESPONSES TO DISRUPTIVE INNOVATION

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Abstract

Research has shown that managerial cognition and cognitive frames play a prominent role in shaping organizational strategy under conditions of market uncertainty and ambiguity. While this work often has implications for understanding incumbent responses to disruptive innovation, relatively few attempts have been made to apply a cognitive lens directly to cases of disruptive innovation. Where a cognitive approach has been applied, it has often incorporated binary or dichotomous understandings of cognitive framing: often involving an opportunity/threat heuristic. Recent work has begun to suggest that cognitive positions held by organizational members can incorporate multi-dimensional and non-binary cognitive frames. This paper explores the cognitive processes involved in incumbent organizations following the emergence of a disruptive innovation. We conduct an in-depth case study of the response of Aviva plc. to a disruptive innovation – the rise of general insurance aggregator sites between 2005 and 2007 –to develop a grounded model of the cognitive forces involved. We propose that organisational members develop different framing positions, which can be mapped across three separate framing dimensions. Framing positions are distributed holographically throughout the organisation such that conflicting frames can be held by members of the same organisational department or group. The framing positions held by members influence organizational response strategies to disruptive innovations.

Keywords: cognitive framing, disruptive innovation, ambiguity, insurance

INTRODUCTION

The role of cognitive framing in decision-making under ambiguity is well established within the strategy literature on cognition and decision-making. However, despite having direct implications for understanding decision making processes within incumbent organisations following disruptive innovation, the role of cognitive frames in incumbents' decision-making has been relatively under explored within the disruptive innovation literature.

Where accounts have utilised cognitive framing in their explanation, these have often relied on the use of binary or dichotomous understandings of cognitive framing often relying on a broad opportunity/threat heuristic (Mintzberg *et al*., 1976; Nutt, 1984; Dutton & Jackson, 1987; Chattopadhyay *et al*, 2001). This opportunity/ threat dichotomy within the literature has been aided by its predictive power in explaining the influence of cognitive frames in the development of response strategies (Dewald & Bowen, 2010; Gilbert, 2006). Recent work, however, has suggested that the cognitive frames held by managers in conditions similar to those of incumbents following a disruptive innovation is often more complex and nuanced. Cognitive positions held by organizational members are not necessarily unidimensional (Dutton & Jackson, 1987), but can incorporate multi-dimensional (Osivevskyy & Dewald, 2015; Gioia *et al*, 2010), conflicting (Gilbert, 2005) and non-binary (Hahn *et al*, 2014) cognitive frames. Building on the latter, we examine the role of multiplexed cognitive framing following a disruptive innovation.

We begin with an exploration of the concept of disruptive innovation and the influential, macro-level theories that have dominated discussions on strategy formation. We propose that the environmental ambiguity in disrupted markets allows cognitive framing to play a significant explanatory role in the formation of incumbent strategy. A case study of the UK General Insurance division of Aviva plc., a large multi-national insurance and investment provider, during a period of disruptive innovation is used to explore the processes by which cognitive frames develop and impact firm decision-making. We propose a model of the multiplexed role of cognitive framing and develop implications for how cognition can complement traditional explanations of firm strategy following disruptive innovations.

THEORETICAL EXPOSITION

Incumbent Challenges: Disruptive Innovation and the Innovators Dilemma

A disruptive innovation is characterized as a product or service innovation that represents “a very different value proposition than had been available previously” (Christensen, 2013, xv). Product performance, measured against the existing standards of the market, will initially be lower as the innovation falls short of the standards of the existing value framework. The trajectory of the innovation along its alternative value framework will continue to the point where it’s standard can match that of the established market offering “knocking out…its established practitioners, with stunning speed” (Christensen, 2013, xvi). The development of disruptive innovations along an alternative value framework trajectory differentiate them from sustaining innovations, which are characterized by an incremental increase in performance as measured against the existing framework of the established market.

The destructive power of disruptive innovations can be demonstrated in both technological innovations, such as the hard drive industry (Christensen, 2013) and quartz watches (Glasmeier, 1991); and business model innovations, such as the change in digital music distribution (Burgelman & Grove, 2007). Sandström *et al* (2009) describe the challenges faced by the specialist camera manufacturer, Hasselblad, following the arrival of consumer-targeted digital imaging technologies. For much of its existence, Hasselblad had positioned itself as the “’Rolls Royce’ of the camera industry” (Sandström *et al*, 2009, 10) at the high-end niche of the professional and consumer market, measured by the ability to develop high quality images. While the arrival of digital imaging in the early 1980's did not appear to pose a significant challenge to Hasselblad as per traditional value dimensions (image quality) to measure product quality, it surpassed traditional photography in terms of ability to "store, replicate, send and manipulate photos" (2009: 12). As the quality of digital imaging improved, traditional photographic technologies becoming increasingly obsolete and Hasselblad's commitment to the traditional paradigm resulted in a difficult, "expensive" and "dramatic" transition into digital imagery.

A large portion of the literature surrounding disruptive innovation has focused on resolving the "innovator's dilemma" or how incumbent organizations fail to successfully respond to emerging disruptive innovations despite simultaneously doing "what is right for the near-term health of their established businesses" (Christensen, 2013, xiv). The dilemma is often treated as a binary problem; why do incumbents fail to engage with disruptive innovations when it is in their long-term interests to do so? While this understanding of the innovator's dilemma has appealed to practitioners, it struggles to capture the subtlety of the question for researchers; amalgamating a broader range of strategies into a binary choice between engagement and "inertia" (e.g., Gilbert, 2005; Tushman & O'Reilly, 1996).

To unpack the dilemma, it is important to consider the different strategies incumbents deploy when under the threat of disruptive innovation. Osivevskyy & Dewald (2015) differentiate the possible responses to disruptive innovation by the degree to which they (a.) strengthen the existing business model and (b.) adopt the disruptive model. Within this alternative framework, the challenge posed by the innovator's dilemma is to explain why incumbent firms choose to engage in a strategy involving little to no exploration or adoption of the disruptive business model. That is, why do they fail to explore the disruptive business model or technology, despite it being in the long-term interests of the firm to do so?

Macro-Level Explanations of Incumbent Responses: The "Economic View"

Traditional accounts have focused on macro-level explanations; examining the role of forces at the level of the firm or industry in driving incumbents' resistance. This is consistent with what Nadkarni & Barr (2008: 1395) refer to as the "economic view," where "industry structure is the primary influence on strategic action." This focus on industry structure is manifested by the attention given to resource incentives in influencing incumbent decision-making (Christensen, 2013, Macher & Richman, 2004). The crux of why incumbents choose not to explore disruptive business models, under this view, is that firm's incentives are aligned to the interests of their current stakeholders who "can hold the organisations captive" (Christensen, 2013: 128). These accounts tend to lend themselves to a resource-dependent understanding of firm strategy (Sandström, Magnusson & Jörnmark, 2009; Pfeffer & Salancik, 1978).

A second strand of the "economic view" focuses on the role of firm capabilities and their fit with industry structure (Benner & Tushman, 2002; Sosa, 2011). Incumbents' capabilities that had previously driven growth inhibit the firm's ability to respond effectively to the new market dynamics, and in turn create inertia; "the very same values, norms and attitudes that support a core capability and thus enable development can also constrain it" (Leonard-Barton, 1992: 119).

Disruptive Innovation and Ambiguity: Scope for Cognitive Accounts

While these studies have contributed significantly to research regarding the behavior of incumbent's facing disruptive innovation, they have paid less attention to individuals and groups within the organization. A number of scholars, including Benner and Tripsas (2012); Gilbert (2006), Hanh *et al* (2014); Nadkarni & Barr (2008) and Tripsas and

Gavetti, 2000) have explored the role of managerial cognition in incumbent decision-making when faced with disruptive threats.

The presence of environmental ambiguity provides a background within which cognition plays a significant role. While under uncertainty, managers are hindered by an "inability to predict the probability of particular outcomes," ambiguity reflects a lack of clarity on what the desirable outcomes are and how to achieve them (Zuzul, 2014: 7; Weick, 1995). Decision-making under ambiguous conditions will likely involve disagreement regarding what the desirable outcomes are, who the competitors are and what defines the market (McCaskey, 1982) as "interpretations are likely to diverge widely" (Kaplan, 2008, 673). Accounting for this internal process of coping with ambiguity introduces cognition as a third feature in shaping managerial decision-making when faced with a disruptive innovation.

The literature on the role of cognition in ambiguous contexts shows how sensemaking and cognitive framing influence managerial decision-making under ambiguity. Sensemaking enables ambiguous conditions to be overlayed with meaning through a process of "ongoing retrospective development of plausible images" (Weick, Sutcliffe & Obstfeld, 2005: 409; Taylor & Van Every, 2000, 275). This process reduces ambiguity insofar as understanding of the past can be used to aid understanding of the present (Kaplan & Orlikowski, 2012) but also involves using projected understandings of possible futures to anticipate possible outcomes (Weick, 1979).

Cognitive frames may be applied within this process of sensemaking. These frames are best understood as "structures of belief, perception, and appreciation" (Schon & Rein, 1994, 23). Frames function as a filter (Gilbert, 2006: 151) influencing what is seen as significant and how it is significant. The content of these frames can include representations of competitors (Reger & Huff, 1993: 105), the history of the organization and the demands of the market (Trispas & Gavetti, 2000: 1151). This influences how managers interpret and respond to changing market dynamics (Garud & Rappa, 1994; Eggers & Kaplan, 2013). This understanding of the role of cognitive framing posits that decision-making agents' processing of decisions is limited by restrictions on what can be known and what they are capable of processing (Eisenhardt & Zbaracki, 1992; Jones, 1999: 299). Against this background, frames operate as a heuristic to aid decision making when faced with complex, conflicting or ambiguous information.

A 'Socio-Cognitive' Perspective of Incumbent Decision Making

A related, stream of research has explored the role of cognition in moderating the influence of economic forces (such as firm capabilities and environmental incentives) in incumbent decision-making (Eggers & Kaplan, 2013; Benner & Tripsas, 2012). Trispas & Gavetti (2000)'s longitudinal study of the Polaroid group in the 1980's and 90's provides early support for the notion of cognition as a moderating force in the decision-making process. Despite being a leader in the analogue photography market, and having strong R&D capabilities, the group's management did not frame the emerging digital photography market as a threat to their business, firmly holding that "customers required "photographic' quality" (2000: 1151) which could not be met by digital inaging. This was reinforced by a commitment to a "razor/blade business model" (2000: 1151) within which the firm's margins were made from selling films. Despite having the capabilities to launch a digital camera as early as 1992, Polaroid resisted due to deeply engrained framing positions regarding the nature of the market and their role in it. There is a sense in which these cognitive frames moderated the value of the firm's capabilities in the eyes of their management to the extent that "the value of these capabilities is subject to interpretation" (Eggers & Kaplan, 2013, 293).

The dynamics of this interaction between cognition, resources and capabilities, in particular, the moderating effect of cognitive frames on the potency of capabilities and incentives, has questioned the power of traditional economic perspectives (Nadkarni & Barr, 2008, 1395) to explain incumbent behaviour in response to disruptive innovation. While resources and capabilities may generate conflicting incentives, their value is linked to managerial beliefs. Under a socio-cognitive perspective Rindova *et al* (2012), the value of resource incentives and capabilities is not objective, but rather “enacted” through cognitive frames and processes. Apparently objective enivironmental, industry and firm features and conditions are, under this view, a product of cognitive processes (Nadkarni & Narayannan, 2007). As Eggers and Kaplan (2013) note, the value of capabilities is dependent in part on managerial understanding of their environment such that “even the presence of capabilities may be useless without managerial interpretations of their match to the environment” (2013: 293).

While the role of cognition and framing has been well researched in strategic decision-making (Daft & Weick, 1984; Kaplan, 2008), the role of cognition in cases of disruptive innovation has attract attention more recently (Osivevskyy & Dewald, 2015; Dewald & Bowen, 2010; Gilbert, 2006; Nadkarni & Barr, 2008; Hanh *et al*, 2014). Of the research that has explored this context, there has been a particular focus on trying to understand the manner in which framing positions act as cognitive antecedents (Osivevskyy & Dewald, 2015) of incumbent responses to disruptive innovations. Exploring the newspaper industry during the emergence of digital publishing, Gilbert (2006) showed the effect that framing a discontinuous change as an opportunity or a threat had on the response strategies developed by managers. While framing the innovation as a threat, allowed galvanizing significant resource commitments, it also restricted the range of responses. Conversely, by framing the development of digital publishing as an opportunity managers were able to broaden the search processes to include more innovative solutions, but were able to generate less resource commitment. (cf., Dutton, 1992: Dutton & Jackson, 1987). Dewald & Bowen (2010) extended the position of Gilbert (2006) in their analysis of the behaviour of small incumbent real estate agents during a period of industry upheaval by incorporating a degree of intentionality in the understanding of opportunity and threat frames. A threat frame is treated as an outward-looking claim about the degree of the challenge posed. Conversely, an opportunity frame incorporates an "inward assessment" (2010: 200) about the potential presented to the firm.

Because the two frames differ in the scope of factors that they consider, it is possible to simultaneously frame a disruptive innovation as a threat (insofar as it provides a challenge to existing performance) and as an opportunity (the perceived benefits that the firm could gain by adopting the innovation). More recent research has begun to use a more nuanced classification of the frames held by managers. Osivevskyy & Dewald's (2015) found that framing the disruptive business model as a non-critical, performance reducing threat (that is, a threat that may result in "anticipated losses" but not "cessation of the entire business" (2015: 65)) was positively associated with intentions to adopt the new business model (2015: 70). Vitally, framing the disruption as a critical threat did not have the same effect. This nuance in the degree of threat perceived thus appears to influence the response strategy favoured by management.

Our review highlights several issues regarding the application of a cognitive lens to incumbent decision-making under disruptive innovation leading to our research questions. How do different framing positions influence response strategies to deal with a disruptive innovation? To what extent does the traditional "threat" and "opportunity" framework needs a revised understanding? How are different frames held by individuals, groups or organisations distributed through the organization?

METHODOLOGY

Our study can best be described as theory elaboration (Lee, 1999) insofar as it aims to use empirical data to incorporate novel theoretical insights. By drawing on a cognitive lens to examine the process of incumbent decision-making following a disruptive innovation, we attempt to "reconnect and redirect" (Lee *et al.*, 1999: 166) two separate research areas to develop novel insights.

Research Setting

We conducted an in-depth case study of the General Insurance arm of Aviva plc. in the UK between 2002 and 2007 in response to the disruption wreaked by the growth of aggregator sites. Aggregators brought a new value proposition to the general insurance market along two dimensions. From a consumer perspective, aggregators provided a convenient resource on which general insurance policies (including motor, home and travel insurance) could be compared, primarily by value. From a provider perspective, aggregators offered a new distribution platform, supplementing the traditional broker, and allowing access to a broad marketplace without the infrastructure and partnerships traditionally needed to distribute policies.

The development of aggregators in the general insurance markets displayed many traits of a disruptive innovation.[1] Prior to 2002, insurance products were primarily distributed through brokers, bancassurance schemes or direct sales through the insurance provider (Robertshaw, 2012). These products were distributed mostly over the phone or in person, with only 2% of UK motor insurance and 1% of UK home insurance sales taking

[1] In particular, this is consistent with a "low-end" disruptive innovation, insofar as it meets the needs of customers who had previously been "over-served" by the existing providers in the market. (Ansari et al, 2015; Christensen and Raynor, 2003; Christensen et al., 2004)

place online (Accenture, 2010) The launch of Confused.com in 2002 marked the beginning of a transition within the sector. By 2005, 20% of all motor policies were purchased through aggregators, increasing to 56% by 2012 (Datamonitor, 2012). Mirroring this shift in distribution behaviour came a social acceptance amongst consumers of aggregators as a mainstream option, By 2009, 78% of UK consumers reported that they were 'likely' to use an aggregator to source their motor insurance policy (Robertshaw, 2012, 3).

While aggregators began as a technical innovation, the focus on comparing policies based on price led to a steady commoditization of the sector. Many of the value dimensions along which insurance products had previously been sold (such as quality of customer service and affiliate discounts) could now be compared on aggregator platforms. Price became the key factor differentiating products in aggregator rankings. This was reinforced by consumers using price as a purchase driver. 30% of sales on aggregators across all policy lines went to the cheapest policy available, with 88% of all sales on aggregators coming from the top-5 cheapest ranked policies (Datamonitor, 2012). This change in the customer-insurer relationship was complemented by a shift in competitive dynamics. The creation of a new distribution platform enabled firms that did not have sufficient resources to set up a proprietary distribution channel to enter the national market with wider exposure than would have been earlier possible. This leveling of access to distribution channels lowered the barriers to entry for smaller firms who were willing to compete heavily on cost. The incumbents involved (including Aviva, RSA, DLG and Allianz) had to find a way to deal with aggregators while continuing to serve their existing market.

Data Sources

To improve levels of accuracy and validity, we collected data from a number of sources, including semi-structured interviews with former senior management and current employees of the organisation, archival documents and historical third-party analyst reports. 12 interviews were conducted with individuals who had held management roles with Aviva during the relevant period (2002-2007) and had input into decisions regarding the firm's response to aggregators. This included individuals responsible for marketing, product/service innovation, service delivery, pricing and product management. To mitigate social desirability response bias[2] (Arnold & Feldman, 1981, 377) we seleced individuals who no longer worked for the insurance industry. This was intended to reduce the risk of responses being made with reference to current perceptions of 'acceptable' or 'appropriate' beliefs within the organisation or industry.

To increase external validity, findings from interviews with former management were triangulated (Jick, 1979) with content analysis of archival documents from Aviva and external analyst commentaries. 49 archival documents from Aviva were reviewed in this process; including investor reports, transcripts of speeches made by senior management, regulatory filings and AGM transcripts. These were used to build an understanding of the "intended image" (Brown *et al.*, 2006, 102) that senior management sought to portray and to unobtrusively corroborate the understanding gained from interviews (Webb and Weick, 1979). Archival third-party commentaries (including analyst reviews and industry reports) were used to build an understanding of the contextual ambiguity in the industry. Finally, two interviews with current management were used to corroborate findings and to increase the validity of findings and the robustness of the model (Kirk & Miller, 1986).

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[2] Characterised by conditions in which participants try to garner 'approval' through use of "culturally acceptable and appropriate" responses (Marlowe & Crowne, 1964, 109)

Our decision to use a historic case design, and therefore to leverage retrospective interviews and archival documents as data sources, is borne out of a need to overcome two particular challenges facing case studies in the literature on disruptive innovation. The first challenge was to mitigate any potential motivational biases amoungst the sample selected for depth interviews. Motivational biases can develop amoungst current employees when their organizational roles influence their responses (Lerner, 1976). The political benefits of particular responses or degrees of involvement can ultimately shape and bias the data collected (Pettigrew, 1973; Pfeffer, 1981). By speaking with former employees, we are able to mitigate the political or career incentives of certain responses, and in turn reduce any motivational bias. Rigourous analysis using former employees necessitates that the case setting we address is also historical.

The second challenge is a more peculular attribute of case research in the innovation literature. Specifically, that researchers may display a ‘pro-innovation bias’ (Rogers, 1983) in traditional longitudianal case research. Once embedded in an organization, researchers may present a bias towards the innovations of their organization or group. In retrospective cases, objectivity is improved by forcing a degree of detatchment from the interests of the organization. Through historical data collection and analysis, we can “maintain both in appearance and in fact an appropriately opan mind about the desireability of the innovation” (Leonard, 1990, 257).

Data Analysis

While we aim to extend on existing theory, the data analysis followed the Gioia methodology (Gioia, Corley & Hamilton, 2012) more often associated with grounded theory (Glaser & Strauss, 1967). While we drew on existing literature to develop the initial research question and identify relevant theorertical concepts, we are consistent with grounded theory insofar as we employ techniques intended to develop an interpretive model of the role of cognition "grounded in the views of participants in the study" (Creswell, 2012: 14).

In the data collection process, we tried to get as "close to the informant's experience" (Gioia *et al*, 2012, 17) as possible so as to ease the "discovery of new concepts rather than affirmation of existing concepts" (2012: 17). Interviews were left broadly open, with a flexible protocol (2012, 26) to ensure that the topics seen as relevant by informants could be explored. Clarification questions were made with reference to findings from previous interviews, rather than existing theory (Langley, 1999: 693). Similarly, secondary content was coded against the vocabulary derived from interviews to ensure that the terminology used was consistent with the understanding of those involved in the organisation.

Data from interview transcripts and content analysis were categorized into 1st order concepts (Gioia *et al*, 2012, 21) that were subsequently grouped under 2nd order theme headings based on the topic they refer to and the perspective they take (Strauss, 1987). In the penultimate stage of the data analysis, the complete list of 2nd order themes were linked into common aggregate dimensions that pulled them together. These aggregate dimensions function as emergent theoretical constructs, inductively built out of the first and second order concepts (Gioia *et al.*, 2012, 20). These three levels of analysis were subsequently pulled together into a process model demonstrating their interrelationships. Aggregate dimensions provided conceptual headings for each phase in which the interrelationship between the 2nd order themes was detailed in a process model. The results of this model were twice fed back into interviews with a current employee to iteratively test its soundness and identify any discrepancies.

FINDINGS

Data Structure

Figure 1 provides a representation of the data structure developed from our analysis.

----------------------------Insert figure 1 here--------------------------

Threat Perceptions & Environmental Ambiguity

Interviews supported the notion that, between 2002 and 2005, the incumbent insurance providers were aware of aggregators, but did not perceive them as immediately relevant to their business. As one Customer Experience Manager noted, “we knew about price comparison sites from their inception, but for a long time they appeared to appeal only to a pretty commercially unattractive niche; namely young men looking for a bargain with no brand loyalty.” This was reinforced by a sense that aggregators’ growth was structurally limited by the focus on online distribution. A former Director of IT Strategy noted that “you have to remember that in 2002, less than half of UK households had internet access, and less than 10% of those had something like primitive broadband…its impact was pretty limited by the infrastructure available.”

None of the informants could identify a particular moment or event that marked an end to this perception, though a consensus did emerge that aggregators were actively discussed in meetings from 2004-2005. Aviva’s former Brand Director, for example, discussed an “emerging realization” that had become a permanent force and “weren’t going anywhere.” A similar point was made by the group’s former Director of IT Strategy, who discussed the growing acknowledgement that there was a “critical mass” of customers. “We had to recognize that customers were returning to them, and they were going to be a permanent part of the market in the UK”.

The “permanent” presence of aggregators in the market appeared to trigger a period of increasing ambiguity. Taken for granted assumptions about the structure and dynamics of the UK general insurance market were no longer automatically credible. A widening pool of providers changed the interactions between customers and insurers. Aviva's former Customer Strategy Director noted:

> "The problem was that our discussions required us to understand who a 'good' customer was, which competitors were in 'our' set, whether it was possible to avoid commoditization...The market was changing so quickly that none of these things were established anymore."

Managers did not just question the likelihood of a desired outcome, but also the extent to of the outcome's desirability. This is consistent with the notion of ambiguity where both risks and the range of options are unclear, and more information "may not resolve misunderstandings" (Weick, 1995: 92). There was no 'established' answer, leading to a co-exixtence of heterogeneous beliefs, perspectives and strategies, with no one approach being able to claim 'legitimacy.'

Response Positions

As shown in Figure 1, two broad strategic positions emerged. To understand what these capture, it is important to identify what they do not entail. Interviewees highlighted that by 2005 all parts of the organisation recognized aggregators as relevant and incompatible with the existing business model. As such, there was no strategic position consistently aligned with maintaining the status quo. A former Customer Experience Director noted:

> "You couldn't make a product, marketing or customer focused decision without taking into account a platform system that is taking 50% of the acquisitions line. While there were different views about how to cope with it, you couldn't bury your head in the sand and pretend that it didn't exist".

The two response strategies that emerged were *adapt* and *differentiate* (figure 1). Strategies and tactics were devised to either allow the firm to adapt to the commoditized market that aggregators were generating, or to sufficiently differentiate the organisation to avoid such commoditization. The first response, '*adapt*', was defined by a set of strategic priorities aimed (in the words of a former Marketing Manager) at "beating cheap aggregator-based players at their own game." The focus was on competing on cost, the primary value dimension from which aggregators differentiated products. This position incorporated a belief that Aviva would not be able to indefinitely resist the increased commoditization, and as such it was better to adopt commoditization as a positive strategy. This sentiment was captured by the former Head of Operations: "If we wanted to, we could have competed on price and attempted to 'buy' customers…this would have pulled us into a price war, but we knew that was something we could win." Informants identified a range of tactics to adapt to the increasingly commoditized market; including restructuring and optimizing existing departments, "buying" customers by absorbing the cost of acquisition and cutting value-add services, such as in-house call centers.

Discussions with informants revealed a second cluster of strategic responses to the threat of aggregators, '*differentiate.*' This position was defined by tactics aimed at enabling Aviva to resist the "creeping commoditisation" (former Innovation Manager) of its business. The range of initiatives varied both in terms of the transformative nature and commitment required. Internal discussions covered topics from investing in strengthening and differentiating the brand to introducing new rewards schemes and improving customer service. The former Customer Propositions Director noted:

> "There were a number of ideas being shared in the industry at the time regarding clever risk models; pooled risk profiles amongst friendship groups, telematics systems, rewards for customers who lower their risk profile. The main goal behind each of these was to build a strong brand based around quality and trust, and retain customers with products they couldn't get on price comparison sites."

It is important to reiterate that both strategic positions acknowledged that aggregators were undercutting Aviva's existing position. This acknowledgment was consistently framed as a threat with the immediate implication of a loss to the business. A former Brand Manager noted that even those in favour of differentiation saw aggregators as a threat that required a reaction. “There was a sense amoungst many that ‘if we stay where we are, we are going to price ourselves out of the market that aggregators have created, without giving people a reason to pay more or be loyal.’” Our analysis shows that there were significant divergences in *how* this threat was framed, and how the organisation was framed as capable of dealing with it.

Frame Dimensions

Our analysis revealed multiple framing dimensions resulting in a heterogeneous range of beliefs associated with the identification with one of the two strategy positions. These are shown in Figure 1 as the dimensions concerning the ‘*Threat Type*’, ‘*Threat Urgency*’ and ‘*Firm Heritage.*’

Threat type**:** The first frame dimension concerns the type of the threat that aggregators were perceived to pose. A key point of divergence was found in individuals’ understanding of this threat, and precisely what it undermined. The polar extremes of this dimension concerned whether aggregators were framed as a *threat to volume* or a *threat to margins.* By framing aggregators as a *threat to volume*, individuals perceived that the primary challenge price comparison sites posed was their ability to act as a catalyst in the reduction of Aviva’s market share and the volume of acquisitions. When prompted, multiple informants noted that adverse impact on the volume of acquisitions was their greatest fear. A former Head of Product and Pricing noted that “scale was crucial to our business model. The volume of policies you hold impacts on the organisational risk profile, which we wanted to keep as low as possible.” A former Strategy Director noted that the first reaction was to maintain historical levels of acquisition; “when you are looking at loosing customers rapidly the first reaction, at least my first reaction, is to try and get back to where we were, even if it meant a race to the bottom in the short-term.” A second perspective framed aggregators as primarily posing a *threat to margins*.

Aggregators were seen as a commoditizing force and a threat to the levels of customer lifetime value (CLV) that Aviva had previously maintained. The concern was less about the revenue accumulated from the market, but rather about with the margins that could be extracted from each customer. "Once you begin to sacrifice those margins to increasing commoditization, it is very hard to regain them. It was a brilliant position to have, and we needed to protect it."

These framings reflect a divergence regarding which elements of Aviva's position were worth prioritizing. A former Brand Manager commented: "Are we an expensive niche player or a general mass market provider? As it was we were neither, but the price comparison sites forced us to choose." Framing aggregator growth as primarily a threat to volume was associated with a preference for strategies from the "adapt" strategy position. Aviva's former Head of Product and Pricing, for example, noted that maintaining market share by volume required accepting the commoditization of the market; "the response had to be 'how can we retain that volume?'…Ultimately, that needed to be achieved through pricing." Conversely, the framing of aggregators as a threat to margins took commoditization to pose an alternative question, specifically: "How can we justify to customers that we are worth paying more for?" (Former Customer Experience Director).

Threat urgency: The second major framing dimension to emerge concerned how urgent the threat from aggregators was, and how quickly a response had to be found. While both dimensions recognized that aggregators posed a threat, the divergence along this spectrum represents a difference in understanding regarding the timeframe required for a response.

By framing the growth of aggregators as an *urgent crisis*, respondents understood aggregators to provide a threat not just to Aviva's business model, but also to its survival of Aviva. As the former Head of Corporate Marketing noted, there was a fear amongst many (including the informant) that Aviva could loose its market position in a very short space of time. “Polices renew every year, so in theory we could loose our entire book 12 months from now.” Other informants, including a former Marketing Manager, discussed the need to “plug the leak” caused by acquisitions increasingly being processed on aggregator platforms.

The heightened sense of imperative that resulted from framing the problem as an urgent crisis was associated with *adapt* strategies. The focus on resolving the immediate challenge of a reduction in new acquisitions appeared to narrow the scope of the objectives; from the standpoint of Aviva’s long-term health to the next set of results. As a conversation with the former Customer Propositions Director highlighted, “whenever results turned against us, attention was drawn to looking at how to reverse the problem as soon as possible. We became very tactical and short-termist.” Interviewees highlighted a tendency to prioritize tactics that were intended to optimize short-term returns, including competing on price. As a former Insight Manager noted “in a tight market, innovative plans to differentiate the organisation are seen as a bit of a luxury.”

Our analysis revealed that some Aviva managers did not share this sense of urgency; rather they framed aggregators as leading to an evolution of the market. A number of informants referred to aggregators as a long-term challenge, but not an immediate threat to business survival. A former Innovation Manager noted: “we were not going to suddenly become irrelevant…but we did have to find a way to operate in a market where aggregators were a major distribution channel.” A number of informants, including the former Head of Strategy highlighted that aggregator sites “rather had a co-bionic relationship with us, where we used them as a distribution channel; their business model was not out to destroy us.” This mitigated sense of urgency appeared to be associated with a broader perspective on the range of desirable straegic responses. The former Head of

Strategy noted: "Things had to change…as things stood, we were in for an uncomfortable few years, but it was less a question of 'what do we do?' and more 'who do we want to be?' We needed to be less reactionary and take a long-term view"

Firm Heritage: The final framing category that emerged concerned the understanding that organisational members had about the heritage of Aviva's General Insurance business. Two polar frames emerged, framing the oganisation's heritage as either Pioneering or Functional. This dimension concerns the organisation's heritage, rather than its identity. An understanding of the organisation's heritage may be incorporated into an organisation's collective identity beliefs (Brown, 2006), but they are not indistinguishable. Framing the organisation's heritage as 'functional' does not equate to the organisation having a 'functional' identity.

The *functional* framing incorporated the belief that Aviva had never really differentiated itself in the market, but rather had always found success by becoming very effective at distributing and pricing its policies. The former Customer Propositions Director noted that "fundamentally, what we offer hasn't changed in hundreds of years, we are still building products based on collective risk and pricing them to attract new customers." Several respondents referred to the functional history that the general insurance business line played within the broader Aviva group, citing that it was historically treated as secondary and supportive of the larger investment lines of the organisation. A former Innovation Manager noted that "part of the challenge was that a lot of people saw general insurance as a cash generator for the investment business. Our role was supportive of the wider business."

The beliefs associated with the *functional* framing of heritage were consistent with the strategies associated with the *adapt* position. The argument that Aviva had never been a differentiated organisation was associated with a view that competing on price was consistent with the organisation's heritage. When discussing the history of the organisation, the former Head of Strategy noted that "It's not sexy, but we have always focused on pricing well and being operationally agile because ultimately that is what has helped us build a solid business."

Conversely, the *pioneer* framing position was defined primarily by a belief that the Aviva brand had historically differentiated the organisation and that it had an innovative history. Many respondents noted the organisation's ventures into providing policies directly to customers (bypassing brokers) in the late 1990's as evidence of their innovative heritage. The former Head of Corporate Marketing noted that "we had spent a long time building the Norwich Union Direct offering, and I think that gave us a certain pedigree as an innovative first-mover." A presentation by Richard Harvey, the Norwich Union Chief Executive in 2002, suggested that rebranding the organisation as Aviva was more in keeping with the values of "innovation", "growth" and "progression" (Harvey, 2002). Our conversations highlighted that some in the organisation framed the organisation's heritage in this manner. The former Head of Global Branding noted: "We were different; we weren't always the first mover, but we were good at scaling innovations. I think we saw ourselves as historically being much more bold than, say, AXA or Allianz."

This framing position was more consistent with the tactics of the *differentiate* strategy By framing the organisation as a group with a pioneering, innovative and forward-looking heritage, members appeared to be more open to innovative responses. As the former Head of Corporate Marketing noted: "there is no reason we shouldn't try to maintain that differentiated value-add position."

Interaction among Framing Dimensions

Variation along different framing dimensions influenced the compatibility of an individual's beliefs with either the *adapt* or *differentiate* strategic positions. As such, an individual who framed the threat as a threat to volume, highly urgent and who framed Aviva's heritage as a functional organisation would find their perspective more in line with the adapt strategy, and as such would prioritise tactics aimed at competing on price.

It is important to note that these three framing dimensions, though interrelated, are separate. The frames of 'threat to volume', 'high urgency' and 'functional heritage', as well as the set of 'threat to margin', 'low urgency' and 'pioneer heritage' did at times in discussions with informants appear to be mutually constructive. A conversation with a former Innovation Manager, for example, appeared to link the firm's pioneer heritage to a lower urgency; "I suppose because we were always a market leader, and because we had led the way into the direct channel, there was a sense of arrogance that was surprisingly good at insulating us". Conversely, it was possible to simultaneously hold framing perspectives that could lead to incompatible response strategies. A conversation with the former Insights Manager, for example, appeared consistent with framing the organisation as a pioneer, but the threat as highly urgent and a threat to volume, claiming that "we were quite innovative and customer focused" but also that "focusing on the customer definitely becomes a bit of a luxury when you are loosing market share so rapidly." The results of these discussions appear to indicate that the cognitive frames held by managers were often complementary, but not mutually interdependent.

It is important to note that the framing dimensions represent spectrums, bracketed at either end by distinct idealized frames. Individual members beliefs and perspectives may align with these frames completely or in part, or hold a view somewhere in between. It is possible, for example, for individuals to frame the threat posted by aggregators as "pressing" (in the words of the former Customer Experience Director) or as "requiring attention" (in the words of a former Strategy Director); neither of which are consistent with framing the threat as urgent or non-urgent, but rather a nuanced position in between.

Frame Distribution

We also identified the manner in which cognitive frames were distributed in the organization, or the extent to which particular frames were uniquely attributable to particular groups. Our analysis revealed that, while there was some clustering of frames in particular groups, teams or departments, conflicting frames would also often be held by members of the same organisational group. Frame positions were thus spread more evenly throughout the organisation than we had expected. We identified three factors related to the distribution of cognitive frames; organisational position, personal franchise in current system and previous exposure to organisational transformation.

Organisational perspective: The first contextual factor that emerged concerns the position of the individual within Aviva, in particular, the extent to which the department or team were placed in was *inwardly* or *outwardly* orientated. An *inwardly* orientated team held more responsibility for operational outcomes, and were referred to as "mid office" or "back office." In practice, this would include teams with responsibility for finance, pricing, risk and operations. Conversely, *outwardly* oriented teams, groups and departments can be identified by their focus on interactions with external stakeholders. This can include departments with responsibility for customer relationships (including marketing and customer service) and intermediaries (sales and corporate partnerships). These groups were referred to as "front office" teams.

Discussions highlighted a tendency for those in outwardly focused roles to frame the type of threat posed by aggregators as a threat to margins. Informants suggested that these individuals had more oversight and responsibility for adding value to the customer proposition through differentiated offerings or improved service. Consequently, there was a greater belief in the firm's ability to increase product margins than existed for those in more inwardly orientated roles. The former Global Brand Director noted: "Our responsibility had always been to add value to the brand, so I suppose it was natural that we wanted to protect that value."

***Personal franchise in current system*:** A second contextual factor to emerge was the degree of personal investment, or personal franchise in the status quo. Individuals who were Aviva "lifers" (in the terminology of a former Business Development Director), and had achieved success were more likely to have a strong personal franchise in the status quo. As the former Business Development Director noted; "If you have found success within the 'old' Aviva, you will be quite heavily personally invested in it." Our analysis suggests that individuals with a high degree of investment in the status quo tended to perceive the threat from aggregators as more urgent. By undermining Aviva's existing business model, aggregators posed a highly personalized threat to the careers of those who had found success within the organisation's existing business model. As the former Head of Change noted: "if you had spent 30 years with Aviva, and had a mortgage and a pension, the first instinct was often going to be protecting what you had in the short-term." A former Innovation Manager corroborated this claim:

> "These people were like the anti-bodies of the organisation. Whenever there was the threat of change - and this could be driven from within the company or by market changes - they would respond by rapidly resisting. Their mindset was pretty narrow…geared at protecting what they had in the short-term."

Previous exposure to organisational transformation: The final contextual dimension to emerge concerned the degree of personal experience that organisational members had with transformation, innovation and risk. This exposure could be garnered internally through involvement in new ventures within the Aviva group, or externally through interactions with competitors and third parties. Our analysis supported the notion that those with high degrees of prior exposure to organisational transformation projects and innovative ventures within Aviva[3] framed the organisation's heritage in keeping with the *pioneer* frame. Conversations suggested that this exposure positively influenced their understanding of how open to and capable of innovative transformations the organisation was. This was captured in a conversation with the former Director of Corporate Marketing, who noted: "I had been involved heavily with the launch of Aviva Direct, so I suppose I had seen how innovative we were already."

Framing the threat posed by aggregators as a threat to margins was also more consistent with the beliefs of those who had prior exposure to innovative organisational transformations. Our analsyis supported the notion that individuals who had prior exposure to customer –focused innovation projects were more inclined to protect the margins that Aviva had established. A former Innovation Manager highlighted this; "we had spent a lot of time trying to differentiate ourselves so that we could go after a higher value market, it seemed a shame to sacrifice that position and those margins."

[3] Includes ventures such as the launch of Aviva Direct in 2001; the group's online and phone based distribution channel and Quote Me Happy in 2003; a second Aviva group brand originally aimed at motor insurance for young drivers

TOWARD A MODEL OF THE ROLE OF COGNITIVE FRAMING IN RESPONSES TO DISRUPTIVE INNOVATION

Our analysis identified several cognitive factors, contextual background and aggregate themes that were salient in the process of developing a response strategy at Aviva. It also served to highlight the mutual relationships and influence between these core factors. Based on our findings, we develp a model of the interplay between these factors and the dynamic relationships between the three frame dimensions, response positions and contextual factors. See figure 2.

--------------------------Insert Figure 2 here--------------------------

Our model incorporates the role disruptive innovations as an antecedent of environmental ambiguity (Weick, 1995; Zuzul, 2014). In our case, this triggered a period of sensemaking, during which members evaluated information about their environment, the firm's capabilities and the potential incentives provided by the market. Central to this sensemaking process were three *Framing Dimensions*; the *Type of Threat* posed by the disruptive innovation, the *Urgency of the Threat* posed to the organisation and the *Heritage of the Organisation*. Each framing dimension is bracketed by an idealized cognitive frame that marks the furthest extent of the frames reported on the topic. In practice, many personal frames fall somewhere on the spectrum of beliefs between these two extremities. These framing dimensions are complementary, but not mutually interdependent.

The idealized frames that fall on these extremes are consistent with the assumptions that undermine one of the two *Strategic Response Positions*. These frames each represent a cluster of associated strategies and tactics concerned with fulfilling the objective of either successfully competing with aggregators based on price, or differentiating the organisation and targeting a narrower but higher value market. Framing strategies closely associated with framing aggregators as posing an urgent threat to volume, or perceiving the organisation to have a functional heritage, were associated with beliefs consistent with the strategy of price-based competition with aggregator-based providers in a commoditized market. Conversely, framing strategies closely associated with framing aggregators as posing an urgent threat to margins, or perceiving the organisation to have an innovative heritage, were associated with beliefs consistent with a strategy of further differentiation.

DISCUSSION AND CONTRIBUTIONS

We began by advocating the use of a cognitive lens in understanding incumbent decision-making following a disruptive innovation and the need for a more nunced, grounded model of the role of cognition in incumbent decision making. Our analysis allows us to offer contributions to the primary literature streams we drew on.

Contributions to the Disruptive Innovation literature

Our account differs from the rationalist, industry level accounts of the 'economic' position (Nadkarni & Barr, 2008). The divergence in internal understandings of a discontinuous change, and consequential divergence in opinion regarding the optimal response to the disruptive innovation, provides support for the notion that cognition influences the process of response development to disruptive innovation (Gilbert, 2006; Dewald & Bowen, 2010; Osivevskyy & Dewald, 2015). The relationship between the framing dimensions we identified and the strategic response positions of *adapt* and *innovate* corroborates recent research on the role of framing in managerial decisions under ambiguity. The notion that framing a strategic issue as a highly urgent threat to volume results in less innovative response strategies is consistent with a prior research. Gilbert (2006)'s study into the response of two US newspapers to Internet publishing found that those parts of the organisations that framed the discontinuous change as a threat were able to galvanize greater resources towards responding, but responded in a highly “rigid” and “inflexible” manner (2006: 157). Similarly, Dewald and Bowen (2010) demonstrated that heightened threat perception leads to strategic entrenchment and deliberate resistance to change. We extend this research to suggest that the concept of ‘threat’ in the context of framing disruptive innovations can be further distinguished by the type of threat that the disruptive innovation is framed as, and the extent to which the disruptive innovation is framed as an urgent threat. Framing the threat as more critical or urgent is associated with greater levels of entrenchment and lower levels of innovation in the strategic responses considered.

This is not to question the value of economic perspectives on resources and capabilities (Nadkarni & Barr, 2008, 1395) in understanding disruptive innovation, but rather to highlight the role of cognition. Specifically, the divergence in framing of the nature and urgency of the threat and the heritage of the organization supports the notion that the environmental conditions, including the incentives in the market, should not be treated as static, given and objective but rather *enacted* through “the processes of perception, interpretation and action” (Rindova, 2012: 156). We show the value of a cognitive lens in understanding strategic responses to disruptive innovation.

Contributions to the Cognition and Framing literature

The three framing dimensions we identified present an alternative categorization to the ‘opportunity’ and threat’ frames widely referred to in the literature regarding the role of cognition in decision-making under ambiguity (Gilbert, 2006; Osiyevskyy & Dewald, 2015). This particular categorization originated in Dutton and Jackson (1987) in which framing a “strategic issue” (1987: 77) as an ‘opportunity’ was classified by a “positive” perception of the situation where “gain is likely” and one believes they have control

(1987: 80). Conversely, a ‘threat’ suggests a broadly “negative” perception, in which “loss is likely and…one has relatively little control” (1987, 81).

From a purely naturalistic perspective, the framing dimensions we identified suggests that the idealized frames of ‘opportunity’ and ‘threat’ may emerge less consistently in practice than prior literature would suggest. As discussed above, both those who supported the *adapt* and d*ifferentiate* position framed aggregators as a threat to the business insofar as both perceived them negatively, and likely a cause of loss for Aviva. What separated their perceptions were divergent understandings of exactly what aggregators were a *threat to* and how *urgent* the threat was.

Our model presents an alternative account of the framing dimensions that emerge following a disruptive innovation. Rather than schematically classifying disruption as a threat or opportunity, organisational members use multiple framing dimensions to develop a multi-faceted view of the nature of the threat (type of threat), the urgency of the threat and the expected capabilities of the firm (through an understanding of the firm’s heritage). These framing dimensions suggest a more granular approach to framing in cases of incumbent decision-making triggered by a disruptive innovation. This allows members to distinguish between different understandings held internally regarding the nature of the ‘threat’ posed by a disruptive innovation. This movement away from classifying frames as an opportunity or threat is consistent with the with the alternative, grounded, accounts proposed in Gioia & Thomas (1996), Gioia et al. (2010) and Zuzul (2014).

Furthermore, we suggest treating framing dimensions as a *spectrum* of positions on a particular issue. Prioer work has tended to treat cognitive frames as binary positions, without specifying the possibility of the varying degrees of agreement and acceptance. Our model depicts the spectrum of beliefs held by members between the two abstracted categorical cognitive frames, which can be accepted to a greater or lesser degree. This typology of frames fits with Doty & Glick (1994)'s notion of a typology as being identified using "ideal types" which may or may not materialize (1994: 234). Similarly, the notion of a continuum of framing positions bracketed at polar ends by idealized cognitive frames is consistent with the recent work of Hahn et al. (2014: 466); who utilizes a similar model of framing positions such that "ideal types rarely exist in pure form, the actual frames of decision makers will lie between the end points."

We also address was the manner in which frames might be distributed in an organisation. Our findings are consistent with the "holographic" distribution of frames (cf., Albert & Whetten, 1985). A holographic distribution occurs when all framing positions and beliefs can be found across all units and divisions of the organization as against a 'specialised' distribution in which different framing positions are held by different organisational units or divisions. This is not to claim that all framing positions are evenly dispersed throughout an organisation, but rather that no framing position may be exclusive to any one organisational unit.

The contextual factors that correspond to particular framing positions, such as "personal franchise in the status quo" and "personal exposure to innovative transformation," can be highly personal and operate at the level of the individual. This is consistent with the recent work of Osiyevskyy & Dewald (2015) who found that the personal-level features of an individual's prior risk experience significantly correlated to their framing of an industry disruption as an opportunity. It would also appear to be consistent with Kaplan & Trispas (2008)'s suggestion that "actors'…frames do not spring up randomly, but rather are the encoding of their prior history" (2008: 791). Similarly, the finding that cognitive frames can correspond to highly personal contextual factors is consistent with Hanh et al (2014)'s hypothesis that "we would expect that a range of factors at personal, organizational, and institutional levels will influence the formation of cognitive content and structure” (2014, 481). While much of prior work on disruptive innovation has tended to treat disruption as an organizational level pheonoemon, we add nuance by showing how a disruptive threat may not be a “one size fits all” and framed differentally by different individuals within an organization.

LIMITATIONS & FUTURE RESEARCH

It is important to note two broad limitations of our study that also offer avenues for further research. These concern the generalizability of the findings to alternative cases and the extent to which the findings can provide an explanation of the mechanisms in place. The use of an interpretive case to develop a grounded model of the nature and role of cognitive framing enhances the internal validitiy of the model and its accuracy in describing the processes in play. This interpretive methodology, however, may reduce the generalizability of the finidngs across other cases of disruptive innovation. The methodology used demands a trade-off of internal descriptive validity against universalisable generalizability. While the findings cannot be gereralized, our conceptual insights have translatable implications for similar cases of incumbent decision-making in cases of disruptive innovation in the service sector.

Secondly, while our model outlines the process by which cognitive framing relates to response positions and contextual factors, further research is required to identify the mechanisms by which these factors influence one another. A large sample, quantitive study could test the extent to which the contextual factors outlined as significant in the distribution of cognitive frames function as cognitive antecedants of the development of these frames. Similar studies could also test the relative moderating strength of the three framing dimensions (individually and jointly) on preferences regarding strategic responses.

REFERENCES

Accenture, (2010). The Evolution of Aggregators: Impacts and Future Challenges for Insurers. [online] London. Available at: http://www.accenture.com/microsites/insights/Documents/pdfs/RoleOfAggregators_09_10.pdf [Accessed 26 Jan. 2015].

Albert, S. & Whetten, D. (1985). Organisational Identity. In Cumming L.L. & Staw, B.M. (Ed.) Research in organisational behaviour, Vol 7, Greenwhich: JAI Press, 1-52.

Ansari, S. and Krop, P. (2012). Incumbent performance in the face of a radical innovation: Towards a framework for incumbent challenger dynamics. Research Policy, 41(8), 1357-1374.

Ansari, S., Garud, R. and Kumaraswamy, A. The Disruptor's Dilemma: Tivo and the U.S. Television Ecosystem. Forthcoming in Strategic Management Journal.

Arnold, C. & Feldman, D., (1981) Social Desirability Response Bias in Self-Report Choice Situations, Academy of Management Journal, 24(2), 377-385

Barr, P., Stimpert, J., & Huff, A. S. (1992). Cognitive change, strategic action, and organizational renewal. Strategic Management Journal, 13, 15–36.

Benner, M. (2010). Securities Analysts and Incumbent Response to Radical Technological Change: Evidence from Digital Photography and Internet Telephony. Organization Science, 21(1), 42-62.

Benner, M. and Tripsas, M. (2012) The Influence of Prior Industry Affiliation on Framing in Nascent Industries: The Evolution of Digital Cameras. Strategic Management Journal, 33(3), 277-302

Benner, M. and Tushman, M. (2002). Process Management and Technological Innovation: A Longitudinal Study of the Photography and Paint Industries. Administrative Science Quarterly, 47(4), 676-706.

Brown, T. J. (2006) 'Identity, Intended Image, Construed Image, And Reputation: An Interdisciplinary Framework And Suggested Terminology'. Journal of the Academy of Marketing Science 34.2 99-106

Burgelman, R. and Grove, A. (2007). Cross-boundary disruptors: powerful interindustry entrepreneurial change agents. Strategic Entrepreneurship Journal, 1(3-4), 315-327.

Chattopadhyay, P., Glick, W. and Huber, G. (2001). Organizational Actions In Response To Threats And Opportunities. Academy of Management Journal, 44(5), 937-955.

Christensen, C. (2013). The innovator's dilemma. Boston, Mass.: Harvard Business Review Press.

Clark, S., Gioia, D., Ketchen, D. and Thomas, J. (2010). Transitional Identity as a Facilitator of Organizational Identity Change during a Merger. Administrative Science Quarterly, 55(3), 397-438.

Creswell, J. (2012). Qualitative inquiry & research design. Thousand Oaks: Sage Publications.

Daft, R. and Weick, K. (1984). Toward a Model of Organizations as Interpretation Systems. Academy of Management Review, 9(2), 284-295.

Datamonitor, (2012). UK Insurance Aggregators 2012.

Dewald, J. and Bowen, F. (2010). Storm Clouds and Silver Linings: Responding to Disruptive Innovations Through Cognitive Resilience. Entrepreneurship Theory and Practice, 34(1), 197-218.

Doty, D. and Glick, W. (1994). Typologies as a Unique Form of Theory Building: Toward Improved Understanding and Modeling. The Academy of Management Review, 19(2), 230.

Dutton, J. and Jackson, S. (1987). Categorizing Strategic Issues: Links to Organizational Action. The Academy of Management Review, 12(1), 76-90.

Eggers, J. P., and Kaplan, S. 'Cognition And Capabilities: A Multi-Level Perspective'. The Academy of Management Annals 7.1 (2013): 295-340.

Eisenhardt, K. and Zbaracki, M. (1992). Strategic decision making. Strat. Mgmt. J., 13(S2), 17-37.

Finaccord, (2010). Where to next for the Where to next for the web aggregators?. [online] Available at: http://www.finaccord.com/documents/Presentations/ fsf_18-05-10.pdf [Accessed 19 Jan. 2015].

Gamson, W. (1992). Media Images and the Social Construction of Reality. Annual Review of Sociology, 18(1), 373-393.

Garud, R. and Rappa, M.A. (1994) 'A Socio-Cognitive Model Of Technology Evolution: The Case Of Cochlear Implants'. Organization Science 5.3 344-362.

Gilbert, C. (2005). Unbundling The Structure Of Inertia: Resource Versus Routine Rigidity. Academy of Management Journal, 48(5), 741-763.

Gilbert, C. (2006). Change in the Presence of Residual Fit: Can Competing Frames Coexist?. Organization Science, 17(1), 150-167.

Gioia, D. A., Corley, K. G., Hamilton, A. L., (2012) Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. Organizational Research Methods 2013 16(1) 15-31

Gioia, D., Price, K., Hamilton, A. and Thomas, J. (2010). Forging an Identity: An Insider-outsider Study of Processes Involved in the Formation of Organizational Identity. Administrative Science Quarterly, 55(1), 1-46.

Gioia, D. and Thomas, J. (1996). Identity, image, and issue interpretation: Sensemaking during strategic change in academia, Administrative Science Quarterly, 41: 370-403.

Glaser, B. G., & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research. Chicago, IL: Aldine.

Glasmeier, A. (1991). Technological discontinuities and flexible production networks: The case of Switzerland and the world watch industry. Research Policy, 20(5): 469-485.

Harvey, R. (2002). CGNU Plc Annual General Meeting.

Hakim, C. (1987) Research design. Strategies and Choices in the Design of Social Research, London: Allen and Unwin

Hahn, T., Preuss, L., Pinkse, J. and Figge, F. (2014). Cognitive Frames in Corporate Sustainability: Managerial Sensemaking with Paradoxical and Business Case Frames. Academy of Management Review, 39(4), 463-487.

Huff, A. (1982). Industry influences on strategy reformulation. Strategic Management Journal, 3 (2), 119-131.

Jauch, L. and Kraft, K. (1986). Strategic Management of Uncertainty. Academy of Management Review, 11(4), 777-790.

Jick, T. D. (1979) Mixing qualitative and quantitative methods: Triangulation in action, Administrative Science Quarterly, 24: 602–611.

Jones, B. (1999). Bounded Rationality. Annual Review of Political Science, 2(1), 297-321.

Kaplan, S. (2008). Cognition, Capabilities, and Incentives: Assessing Firm Response to the Fiber-Optic Revolution. Academy of Management Journal, 51(4), 672-695.

Kaplan, S. and Orlikowski, W. (2013). Temporal Work in Strategy Making. Organization Science, 24(4), 965-995.

Kaplan, S. and Tripsas, M. (2008). Thinking about technology: Applying a cognitive lens to technical change. Research Policy, 37(5), 790-805.
Kirk, J. and Miller, M. (1986). Reliability and validity in qualitative research. Beverly Hills: Sage Publications.
Langley, A. (1999). Strategies for theorizing from process data. Academy of Management Review, 24, 691-710
Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. Strategic Management Journal, 13(S1), 111-125.
Lee, T. W. (1999). Using qualitative methods to organise research. Sage Publications, Thousand Oaks, CA.
Lee, T. W., Mitchell, T. R., Sablynski, C. J., (1999), Qualitative research in organizational and vocational psychology. Journal of Vocational Behaviour, 55, 161-187.
Macher, J. and Richman, B. (2004). Organisational responses to discontinuous innovation: a case study approach. International Journal of Innovation Management, 08 (01), 87-114.
March, J. (1978). Bounded Rationality, Ambiguity, and the Engineering of Choice. The Bell Journal of Economics, 9(2), p.587.
Markides, C. (2006). Disruptive Innovation: In Need of Better Theory*. J Product Innovation Man, 23(1), 19-25.
Marlowe, D. & Crowne, D. P. (1964) The approval motive. New York: Wiley.
Mazzolini, R. (1981). How strategic decisions are made. Long Range Planning, 14(3), 7-8.
McCaskey, M. (1982). The executive challenge: managing change and ambiguity. Boston: Pitman.
Mead, G.H. (1932) The philosophy of the present. Open Court Publishing Co., Chicago, London.
Mitchell, W. (1989) Whether or when? Probability and timing of incumbents' entry into emerging industrial subfields. Administrative Science Quarterly, 34: 208-230
Mittal, V. and Ross, W. (1998). The Impact of Positive and Negative Affect and Issue Framing on Issue Interpretation and Risk Taking. Organizational Behavior and Human Decision Processes, 76(3), 298-324.
Mintzberg, H., Raisinghani, D. and Theoret, A. (1976). The Structure of "Unstructured" Decision Processes. Administrative Science Quarterly, 21(2), 246-275
Nadkarni, S. and Narayanan, V. (2007). The Evolution of Collective Strategy Frames in High- and Low-Velocity Industries. Organization Science, 18(4), 688-710.
Nadkarni, S. and Barr, P. (2008). Environmental context, managerial cognition, and strategic action: an integrated view. Strat. Mgmt. J., 29(13), 1395-1427.
Nisbett, R. E., & Ross, L. (1980). Human inference: Strategies and shortcomings of social judgment. Englewood Cliffs, NJ: Prentice-Hall.
Nutt, P. (1984) Types of Organizational Decision Processes. Administrative Science Quarterly, 29: 414-450
Osiyevskyy, O. and Dewald, J. (2015). Explorative Versus Exploitative Business Model Change: The Cognitive Antecedents of Firm-Level Responses to Disruptive Innovation. Strategic Entrepreneurship Journal, 9(1), 58-78.
Pfeffer, J. and Salancik, G. (2003). The external control of organizations. Stanford, Calif.: Stanford Business Books.
Porac, J., Thomas, H. and Baden-Fuller, C. (1989). Competitive Groups As Cognitive Communities: The Case Of Scottish Knitwear Manufacturers. J Management Studies, 26(4), 397-416.

Pounds, W. (1969) The process of problem finding. Industrial Management Review, 11, 1- 19.
Reger, R. and Huff, A. (1993). Strategic groups: A cognitive perspective. Strategic Management Journal, 14(2), 103-123.
Rindova, V., Becerra, M. and Contardo, I. (2004). Enacting Competitive Wars: Competitive Activity, Language Games, and Market Consequences. The Academy of Management Review, 29(4), p.670.
Rindova, V., Reger, R. and Dalpiaz, E. (2012). The Mind of the Strategist and the Eye of the Beholder: The Socio-Cognitive Perspective in Strategy Research. In: G. D'Agnino, ed., Handbook of Research on Competitive Strategy, 1st ed. Camberley: Edward Elgar Publishing, 147-165.
Robertshaw, G. (2012). Online price comparisons sites: How technology has destabilised and transformed the UK insurance market. Journal of Revenue and Pricing Management, 11(2), 137-145
Sandström, C., Magnusson, M. and Jörnmark, J. (2009). Exploring Factors Influencing Incumbents' Response to Disruptive Innovation. Creativity and Innovation Management, 18(1), 8-15.
Schön, D. and Rein, M. (1994). Frame reflection. New York: Basic Books.
Schwenk, C. (1984). Cognitive simplification processes in strategic decision-making. Strategic Management Journal, 5(2), 111-128.
Shapira, Z. (1993). Ambiguity and risk taking in organizations. J Risk Uncertainty, 7(1), 89-94.
Sosa, M. (2011). From old competence destruction to new competence access: evidence from the comparison of two discontinuities in anticancer drug discovery. Organization Science, 22(6), 1500-1516.
Starbuck, W. and Milliken, F. (1988). Executives Perceptual Filters: What They Notice And How They Make Sense. In: D. Hambrick, ed., The Executive Effect: Concepts and Methods for Studying Top Managers, 1st ed. Greenwich, CT: JAI Press, 35-65.
Staw, B., Sandelands, L. and Dutton, J. (1981). Threat Rigidity Effects in Organizational Behavior: A Multilevel Analysis. Administrative Science Quarterly, 26(4), 501-524
Strauss, A. (1987). Qualitative analysis for social scientists. Cambridge [Cambridgeshire]: Cambridge University Press.Taylor, J. and Van Every, E. (2000). The emergent organization. Mahwah, N.J.: Lawrence Erlbaum Associates.
Tripsas, M. and Gavetti, G. (2000). Capabilities, cognition, and inertia: evidence from digital imaging. Strategic Management Journal, 21(1011), 1147-1161
Tushman, M. and O'Reilly, C. (1996). The Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. California Management Review, 38(4), 8-30.
Webb, E., and Weick, K., (1979) "Unobtrusive measures in organizational theory: A reminder." Administrative Science Quarterly, 24: 650–659.
Weick, K. (1979). The social psychology of organizing. Reading, Mass.: Addison-Wesley.
Weick, K. (1995). Sensemaking in organizations. Thousand Oaks: Sage Publications.
Weick, K., Sutcliffe, K. and Obstfeld, D. (2005). Organizing and the Process of Sensemaking. Organization Science, 16(4), 409-421.

Whetten, D. A. (1988). 'Sources, responses, and effects of organizational decline'. In K. S. Cameron, R. I. Sutton and D. A. Whetten (eds.), Readings in Organizational Decline, Ballinger, Cambridge, MA, 1988, 151-174

Yadav, M., Prabhu, J. and Chandy, R. (2007). Managing the Future: CEO Attention and Innovation Outcomes. Journal of Marketing, 71(4), 84-101.

Zuzul, T. (2014). Framing Clashes: Divergent Frames and Negative Emotions in Innovation Work. Working Paper. Harvard Business School.

Figure 1: Data Structure (Part 1)

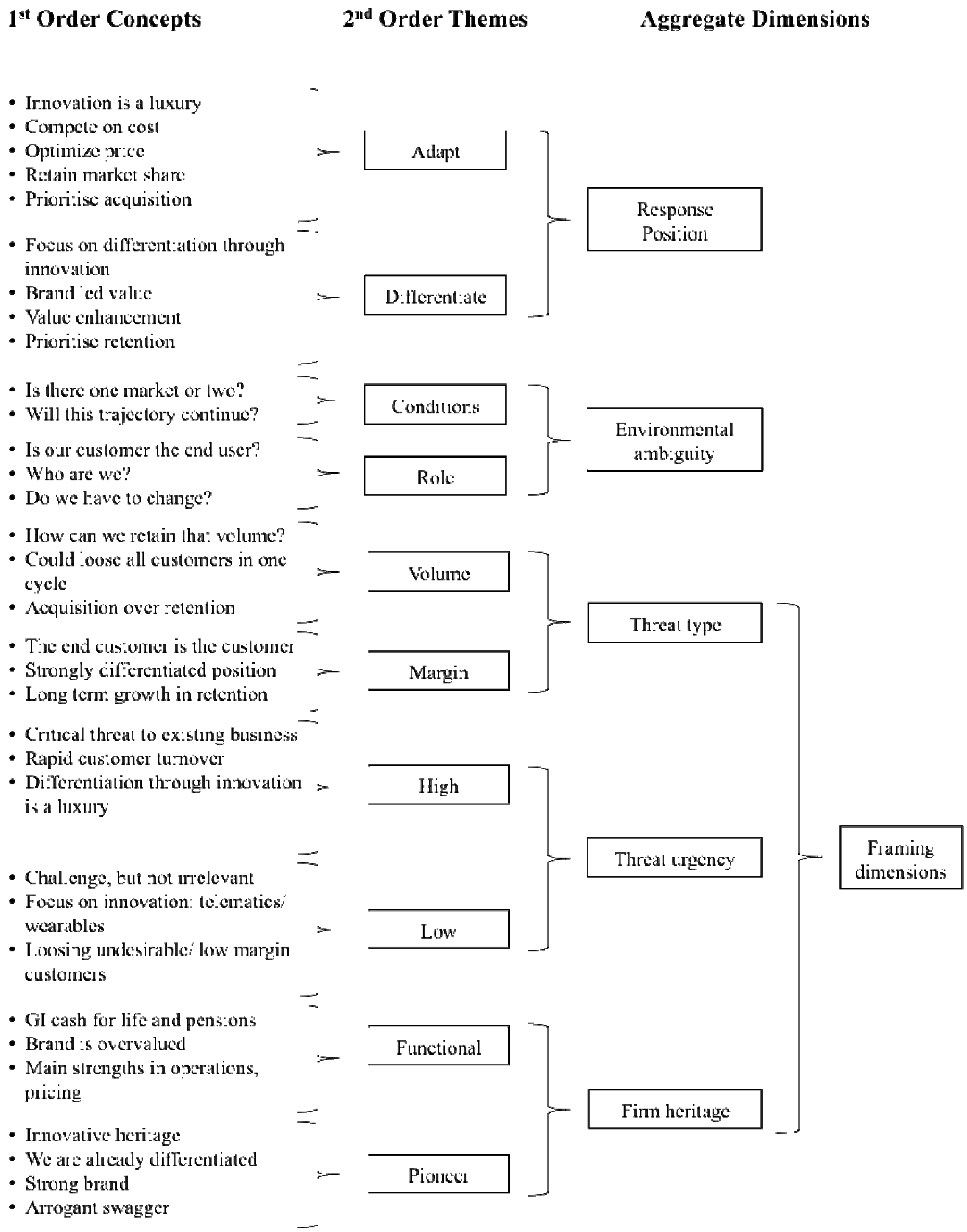

Figure 1: Data Structure (Part 2)

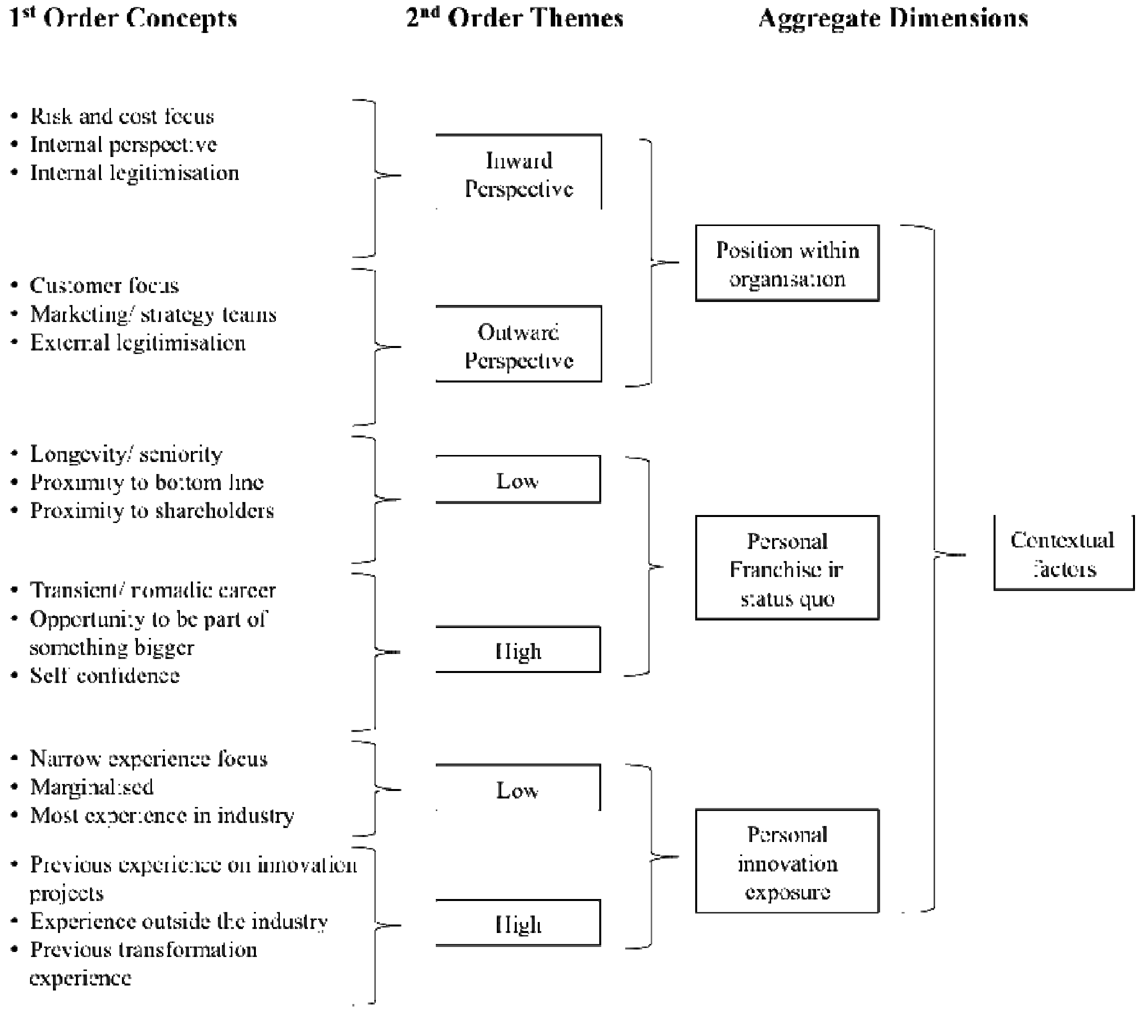

Figure 2: A Model of the Role of Cognitive Framing in Responses to Disruptive Innovation