

## **Exploring and Conceptualising Ambidexterity of Paradoxical Innovation Theory (PIT)**

**By**

**Robert Davis and Leonie Menzies**

**Auckland Institute of Studies (AIS)**

### **Abstract**

In this paper, it is proposed that in the development of new and/or existing products and/or services, innovation can be defined as Paradoxical Innovation Theory (PIT). This theory suggests that innovation should represent the ambidexterity of paradoxical balance or dis-balance between: the momentum of innovation, its structure, purpose and its polychotomis-artefacts. PIT is further explored through an interpretivist grounded theory approach based upon 40 executive interviews in a publicly listed global healthcare firm. The approach discusses PIT by understanding ambidexterity in innovation through its purpose and structure as well as the need for paradoxical balance/dis-balance and polychotomies which are in a state of paradox.

Keywords: Ambidexterity, Innovation, Paradoxes

Track: EMAC 2017 Submission (unaccepted) - Innovation and New Product and Services Developments

Robert Davis is a Professor Academic Head of Business ([robertd@ais.ac.nz](mailto:robertd@ais.ac.nz)) ([drrobertdavis.com](mailto:drrobertdavis.com))

Leonie Menzies is a Senior Lecturer in Business ([leoniem@ais.ac.nz](mailto:leoniem@ais.ac.nz)).

## Introduction

The aim of this research is to explore and conceptualise ambidexterity of Paradoxical Innovation Theory (PIT). This is important because innovation is crucial for organisations to ensure their sustainability and competitiveness in the volatile markets they operate in (Andriopoulos & Lewis, 2010; Jacobs et.al., 2015; Lin, McDonough, Lin & Lin, 2013; Scott, 2014). However, as organisations have discovered, innovation is not necessarily a linear stage-gate approach (Alam, 2014). For example, if an organisation only focuses on incremental innovation, which is an outcome of the stage-gate approach, it will run the risk of missing opportunities that are presented in the external environment. (Lin et al., 2013). Radical innovation on the other hand, is characterised by higher risk-taking and usually a better return than incremental innovation (Alam 2014; Lin et al., 2013). However, the risk of radical innovation is that failure can lead to bankruptcy (Lin et al., 2013). Therefore, it has been found that organisational ambidexterity is essential for organisations to be successful in the long term. In other words, organisations need to take advantage of existing capabilities (incremental innovation), while at the same time explore new capabilities (radical innovation) (Andriopoulos & Lewis, 2010; Lin & McDonough, 2014; Schreuders & Legesse 2012; Scott, 2014).

This is a major challenge since organisational ambidexterity implies that innovation activities necessary for long term success, are in a state of paradox and compete for the scarce resources within the organisation (Lin, et al., 2013). Achieving organisational ambidexterity is not straightforward and many researchers have tried to resolve this complex issue. Yet, there is still an enormous amount of uncertainty of how to achieve incremental and radical innovation simultaneously (Andriopoulos & Lewis; Lin et al., 2013). Andriopoulos and Lewis (2010) noted that previous studies of organisational ambidexterity were, to a great extent, aimed at top management. Limited research regarding the management of these paradoxes across different levels, exist. In their study, Andriopoulos and Lewis (2010) examined how leading product design companies approach ambidexterity across different levels. However, further research is needed to determine how organisational ambidexterity and the associated management practices or approaches to innovation paradoxes vary across different contexts. We therefore examine ambidexterity of PIT in the context of a global publicly listed healthcare firm. The questions that guided this research are: *How do we conceptualise ambidexterity in PIT? What are the polychotomis paradoxes emerging in innovation within this specific context?*

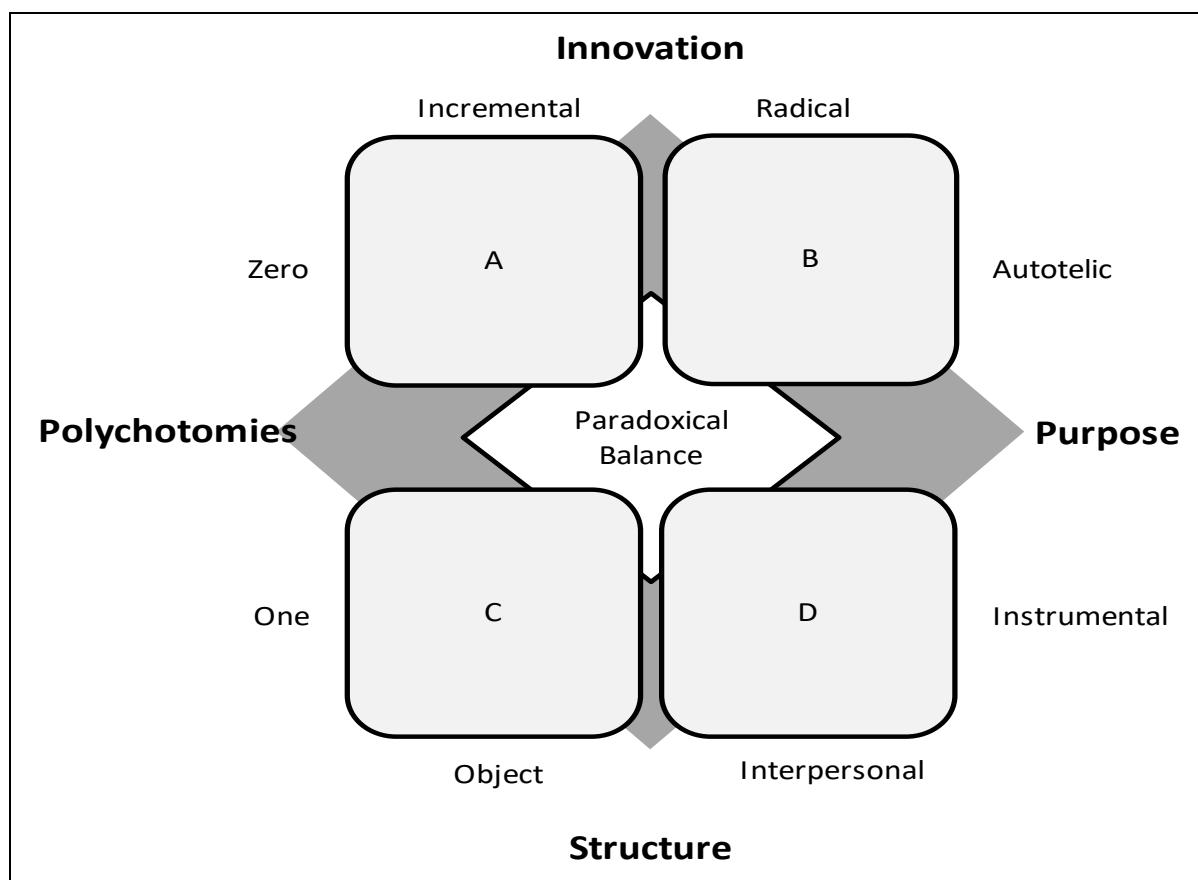
This paper is structured as follows. It proceeds from the introduction and presentation of the research questions to a brief discussion of the emerging conceptual model that has evolved from the

interpretivist grounded theory data collection and analysis as well as a review of the literature on innovation and organisational ambidexterity: Paradoxical Innovation Theory (PIT). The methodology follows, concluding the paper with the key findings and conclusions. This paper makes an important contribution as it provides further evidence for marketing theory and practice, challenging the linear stage-gate approach to product and service innovation. Based on a real case we uncover the role of paradox in innovation ambidexterity (Andriopoulos & Lewis, 2010). Our initial findings further develop the conceptual model that provides guidance for the management of ambidexterity in product and service innovation.

### Conceptual Model

In the development of new and/or existing products and/or services, innovation can be defined as Paradoxical Innovation Theory (PIT) (Figure 1). This theory suggests that innovation should represent the ambidexterity of paradoxical balance or dis-balance between: the momentum of innovation, its structure, purpose and its polychotomies-artefacts.

**Figure 1. Paradoxical Innovation Theory**



The model is defined as:

1. Momentum of the incremental and the radical. The momentum dynamically interplays with innovation purpose, structure and polychotomies.
2. Structure or the nature of the innovation interaction which is driven by; (1) Object Actions which are focused on the individual and/or the (2) Interpersonal Actions which culminate the collective.
3. Purpose or the objective which are broadly defined as the: (1) Autotelic Action or closed end internal objectives and/or the (2) Instrumental Actions which focus on open ended external objectives.
4. Polychotomies which are the paradoxical states which represent the outcome of dis-balance. The effect of the polychotomies on innovation are observed by their artefacts. We nominally call these Zero (one-side) or One (the other-side) but they could be extended to n-sides.

## Methodology

The organisational context for the research is a publicly listed global healthcare firm. Interviews were conducted with 40 executive staff across the organisation in 2013. The identity of the organisation and its participants is anonymous. Interview transcripts were prepared for analysis in verbatim. The aim of the research is to explore and conceptualise innovation in ambidexterity of Paradoxical Innovation Theory (PIT). Therefore, the methodology is based on the interpretivist grounded theory approach (Glaser & Strauss, 1967) where “researchers serve as instruments in the interpretation of the data from which the theory emerges” (Davis & McGinnis, 2016, p. 255). Consistent with the approach, interviews were unstructured and there were no pre-conceptualisations. The interviews were carried out by 2 experienced interviewers in the grounded theory approach to data collection and analysis. After each interview, there was a post-reflective process to consolidate the emerging findings, themes and possible analysis codes. Reflection also allowed for interviewers to share their findings creating the possibility for across interview ‘pollination’ and validation of findings. The grounded theory development process followed a procedure of categorisation, abstraction, comparison, dimensionalisation, integration, and iteration (Canniford & Shankar, 2013; Spiggle, 1994). Categorisation is a process of open coding to create named categories.

This was carried out through manual, Nvivo coding and Leximancer word pattern analysis of field notes and manuscripts (Strauss, 1987). Abstraction followed to group categories into higher order constructs to create relationships amongst categories allowing for a more complete conceptualisation of the participant’s experience. Comparison allowed for systematic and unordered analysis of data within

and across interview transcripts as well as the development and review of initial propositions. This was followed by dimensionalisation across interviews. This created an understanding of variation across categories. Integration started the process of building a grounded theory. A coding and analysis approach sought to determine the conditions around the emerging theory and cause/effect relationships (Davis & McGinnis, 2016). Finally, iteration sat alongside categorisation, abstraction, comparison, dimensionalisation and integration: going forward and back (and across data) within the process of theory development, using interviews, reflections, field notes and memos, the literature, and interviewer exchange to aid the inductive process.

## Results

The presentation of the results follows two core themes. First, to create a context for understanding ambidexterity in innovation, we explore what innovation is. Second, we discuss the polychotomies and explore some of the emerging organisational paradoxes.

### ***What is innovation?***

“I don't have one view. I think there's a wide range of what innovation means and what it can mean. And they're all valid, you know I don't think there is a fixed definition of that term, you know ranging from generation of ideas, great, are they new ideas. Are they new to us? Are they just new ideas to the world, you know different ideas, you know rehashing, recycling, rebranding ideas? Or is it in the application of those ideas into something profitable, or demonstrable beyond the idea itself and everything in between and beyond? So I mean for me I think all of those things have their place in the general idea of innovation.” [Participant 80]

In this organisation, innovation is a paradox of balances or dis-balances between the polychotomies. It should be noted that we don't use the term dichotomies because the dis-balance may exist between more than two aspects. First, innovation is a dis-balance in terms of *momentum* (Figure 1) between the incremental vs. radical approaches. It emerges from the scientific and engineering based process of discovery. This incremental approach is very carefully teamed and project managed with the mantra that innovation is not a craze. However, to allow this linear stage-gate approach to dominate would preclude the radical. (Alam, 2014; Lin et al., 2013). Second, it is also interesting to discover that in this organisation, innovation is not focused on the customer. The customer is the central part of the vision in the future; but not central to innovation. An analogy of the important difference between vision,

customer and innovation arises from extreme mountain biking. Professionals are trained and practice the art of focusing on the future 5 metres away (the vision) to lead the immediate actions of their bikes steering and control (the innovation).

In this context, the vision focuses on the customer in terms of their needs. This 'far away' vision (*purpose*) is translated into the immediate. The customer becomes an object of science and engineering. This dis-balance is a contrast also between the conscious vision vs. unconscious innovation. Third, paradoxical innovation emerges when organisations are continually in the state of developing the philosophy of their business (Scott, 2014). In this case, it is seeking an understanding of the core engine. The independent parts are a quadrant: Process, Product, Therapy, Hospital. The dependant outcome is: cost out and increase revenue. Here the process and product is in continual incremental development. Whereas, the different core therapies are focused on radical innovation emerging from incremental development.

This state of theory development can only lock the hospital into the process and product's incremental development. The de-balancing effect of incremental science, engineering and the radical can make the patient de-centric or an object. Fourth, to exist as a participant in this organisational context requires the need for *structure*. Innovation is driven on a project by project basis with a strong business plan approach. But often the objectives of the project teams are the same. They compete and there is overlap (wastage). Wastage occurs when one team fails and another succeeds. However, failure is viewed in a positive light. Failure is defined as managing obstacles to avoid in the future. Knowing the obstacles also confirms advantage when the organisation observes competitors innovating in known dead-ends. Fifth, the fulcrum of balance in ambidexterity is the importance of time and management, driven by an internal business plan/project teams focused on innovative products and processes. This organisation's philosophy creates a huge amount of endless innovation pathways that arise from external and internal sources.

### ***Polychotomis paradox***

Further, we argue that the state of paradox can be observed through innovation polychotomies that are more about the philosophy of this business rather than innovation itself. For example, the polychotomis tensions that create paradoxical balance/dis-balance are as follows:

1. Long Tenure Staff vs. New Blood: Tenured staff are bogged down with previous organisation structure and an engineering orientation about "the way things are done around here." New staff bring new and global practices to the firm.

2. Separation vs. Integration: The organisation itself is split into 3 units' business units that leverage the same core technology. But on observation, operation and particularly in terms of innovation, they appear to be 3 different companies. In fact, there is intense competition and overlap.
3. Control (rigidity) vs. Freedom (flexibility): The strong engineering focus is on scientific incrementalism and control. The sense of the corporate line also drives this rigidity towards risk aversion. Stated freedom creates flexibility which unhinges the stage-gate with creativity and radicalism.
4. Socialist vs. Capitalist: The previous organisational culture has created a metaphor of the current structure as socialist group vs. the old (and embedded) capitalist individual. Like a philosophy, each seeks to wrestle innovation towards an opposing place. These conflicting approaches also challenge the flat vs. hierarchical organisational structure dominant within the socialist or capitalist.
5. International Best Practice vs. #8 Wire: The organisation's philosophy arises from a historical orientation dominated by the cottage industry and pure innovation through random creation orientation. As the organisation grows into a corporation, innovation starts to seem like a process driven by the likes of the Toyota and/or European approaches.
6. Overlap vs. Specialisation: The current innovation process demands overlap and wastage. However, specialisation can create focus as the organisation moves towards a corporation.
7. Engineer vs. Other: Engineer dominated and as a consequence, the reduction of marketing and design input into the innovation process. Often the consequence is masculine input: aggression and competition. The "other" is balanced by the customer as the engineering objects which are often feminine and infantile.
8. Shareholder Value vs. Altruism: Innovation in this context is gained through giving, that is, the patient (end user) unconsciously guides incremental innovation towards the vision. In fact, the altruistic relationship is from the patient towards the organisation. This unconsciousness allows the organisation to engage in experimentation on the object and trial beyond the norm. The organisation's brand is also situated in the hospital setting but it appears out of place: symbolic of invasive ownership. The exploitative theme is legitimised by the underlying organisational goal as shareholder value.

To further expand our discussion of Shareholder Value vs. Altruism we highlight a key relationship between the organisation's innovation process and customer site (hospital). This relationship is an important innovation source for relational interactions that contribute to both incremental and radical innovation:

“Hospital X was used heavily for the original Product A. We’ve still got a good relationship there. With the Product B we actually had to develop relationships in other hospitals. We’d decided we wanted to spend a lot of time putting it on babies in hospitals and so we needed several places to do that. So, it’s a concern in the longer term and we’ll run out of units to work on.” [100]

These relationships are essential because despite dis-balances and paradoxical polychotomies, they focus the innovation process on a central outcome:

“I think you’ve got to be focussed on what you’re actually trying to deliver otherwise your innovation is useless. And you’ve got to know, you know, what are you actually trying to create. Without the purpose and the direction and the ability to do it you just never get innovation really. And even with those things sometimes you’ll probably never get innovation. You know, it depends on the people in the team, the culture, the environment, the manager.” [130]

Oddly, some of the relationships are so close that access is unhindered and unconscious:

“So, using that as an example because most people can get that, so we do have very strong relationships with the hospitals around the place. For a while we had swipe cards and you could just wander in and out of hospital.” [160]

“Obviously, ours is on live participants and often, or probably 99 per cent of the time our patients can’t consent to doing trials because they’re unconscious or very acutely unwell.” [370]

The organisation plays a key role in one of the hospitals, by funding the care unit:

“Traditionally Organisation X have been very involved in the unit. They fund part of our research department. They obviously fund the room; they fund a lot of things. And all of the products that have been I guess tested in the past, we’ll just bring it in, and oh yeah, we’ll just try it on this person and we’ll see what we think. The same sort of thing as if you decide to change to a different toothpaste.” [370]

However, it is recognised that this type of relationship can become de-railed by the innovation process and there is a continual need to revisit concise and clear frameworks for healthcare ethics and fair competitive practice:

“But I think like you said if I’m trying to talk about it or hand it over or something like that it all sounds a little bit wishy washy. And I guess, we can often be audited by pharmaceutical companies, and again it’s very clear what they want, what process. We’ve definitely ticked all the boxes for the ethical and legal requirements but we probably should have a more concise and clear framework that we should be working from. Everything else in the hospital is protocol driven, very clear, on the computer, open, everyone can see it.” [370]

But often, innovation and the desire for capitalist shareholder value dismisses the need for protocol “to get thing done”:

“But it’s having the experience I think to be able to know how to get things through the system here. Now there’s a lot of clutter in our organisation, with the regulatory environments that we work in, with all the quality procedures and everything that we need to have and you know. And what they do is they add a layer of complexity to everything. What I find is that you can get people that can cut through all that to get things done, but most of the people get caught up in it.” [270]

## Conclusions

We propose that Paradoxical Innovation Theory (PIT) suggests that to innovate, innovation should represent ambidexterity which is a paradoxical balance or dis-balance between: the momentum of innovation, its structure, purpose and its polychotomis-artefacts. Innovation is the dis-balance between the incremental and radical. The seamless meaning between the vision of the future and the immediate object of science and engineering. The continual dis-balance and state of imposed paradox means that this organisation continually needs to define and reflect on the philosophy of its business through the defined independent inputs and dependant variables’ outputs. Ambidexterity in innovation is supported by structure and the careful observation of the business plan and project managed teams. Future research will seek to further explore the qualitative data to expand on the implications of PIT to innovation theory and practice.

## References

Alam, I. (2014). Moving beyond the stage gate models for service innovation: the trend and the future. *International Journal of Economic Practices and Theories*, 4(5),637-646.

Andriopoulos, C. & Lewis, M. (2010). Managing innovation paradoxes: ambidexterity lessons from leading design companies. *Long Range Planning*, 43,104-122.

Canniford R. & Shankar A. (2013). Purifying practices: how consumers assemble romantic experiences of nature. *Journal of Consumer Research*, 39 (5), 1051–1069.

Davis, R.A., & McGinnis, L. (2016). Consumption Guilt: Rationalising Excessive Fan Behaviour, *Journal of Retailing and Consumer Services*, 28, 252–262.

Glaser B.G. & Strauss A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, IL: Aldine Publishing Co.

Jacobs, S.R., Weiner, B.J., Reeve, B.B., Hofmann, D.A., Christian, M., Weinberger, M. (2015). Determining the predictors of innovation implementation in healthcare: a quantitative analysis of implementation effectiveness. *BMC Health Services Research*, 15(1),142-164.

Lin, H., McDonough III, E.F., Lin, S. & Lin, C.Y. (2013). Managing the exploitation/exploration paradox: the role of a learning capability and innovation ambidexterity. *Journal of Product Innovation Management*, 30(2), 262-278.

Lin, H. & McDonough III, E.F. (2014). Cognitive frames, learning mechanisms and innovation ambidexterity. *Journal of Product Innovation Management*, 31(S1),170-188.

Scott, N. (2014). Ambidextrous Strategies and Innovation Priorities: Adequately Priming the Pump for Continual Innovation. *Technology Innovation Management Review*, 44-49.

Schreuders, J., & Legesse, A. (2012). Organizational Ambidexterity: How small technology firms balance innovation and support. *Technology Innovation Management Review*, 2(2),17-21.

Spiggle S. (1994). Analysis and interpretation of qualitative data in consumer research, *Journal of Consumer Research*, 194–203.

Strauss A. (1987). *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press.