Exploring why organizations do not subject their business models to formal empirical testing

Syrus Islam
Department of Accounting
Auckland University of Technology
Auckland, New Zealand
syrus.islam@aut.ac.nz

Abstract

Although the prior literature suggests several compelling benefits in testing business models, very few organizations go for such a test. However, little empirical research has been done to understand managers’ decision of not subjecting business models to formal empirical testing. Drawing upon data from an in-depth field study, unlike normative literature which proposes that managers do not test business models due to laziness and thoughtlessness, the current study suggests that there are rational reasons for not subjecting business models to formal empirical testing. In particular, this study shows that managers do an expected cost-benefit analysis in relation to several factors associated with business model testing. The current study also suggests that, alongside cost-benefit factors, support factors play an active role in business model testing. Finally, this study develops a theoretical framework of ‘business model testing likelihood’ by mapping cost-benefit and support factors. This paper argues that cost-benefit factors and support factors complement in increasing or decreasing the likelihood of testing a business model. Overall, this study adds to our understanding of managers’ decision of not testing business models and also contributes to the nascent literature on when a business model is (un)likely to be tested.

Keywords: Business models; Performance measurement; Cost-benefit; Rational reasons; Business model testing likelihood.
1. Introduction

A business model built on the causal structure is said to have several benefits. However, only a few organizations test the causality of their business models (Ittner & Larcker, 2003). While the literature has addressed the benefits and processes of testing business models (e.g., Campbell, Datar, Kulp, & Narayanan, 2015; Ittner & Larcker, 2009; Malina, Nørreklit, & Selto, 2007), very little attention has been paid to understand managers’ decision of not pursuing a statistically verified business model.

The prior literature has long argued that a causal structure-built business model has several benefits such as predicting future effects of current action (Eccles, 1991) and tying a strategy to future financial results (Magretta, 2002). However, scholars have emphasized to test and verify the causal structure underlying a business model (Ittner & Larcker, 2009; Kaplan & Norton, 1996).

Although testing of business models can offer several benefits (see Kaplan & Norton, 2004; Ittner & Larcker, 2003), surprisingly, only a few organizations actually test their business models (Ittner & Larcker, 2003). Ittner and Larcker (2003) argue that managers do not test their organizations’ business models because of laziness and thoughtlessness. Unfortunately, empirical research on understanding managers’ decision of not testing business models is remarkably scant, with Huelsbeck, Merchant, and Sandino (2011) a notable exception. The current study aims to contribute this literature by addressing the following research question: Why do organizations not subject their business models to formal empirical testing?

Given limited theory and empirical evidence, this research uses an inductive theory-building case study approach (Eisenhardt & Graebner, 2007; Siggelkow, 2007). The current study contributes to the literature in the following ways. First, in contrast to Ittner and Larcker (2003) who propose that managers do not test business models due to laziness and thoughtlessness, the current study suggests that managers have rational reasons for not testing their organizations’ business models. This paper shows that managers do an expected cost-benefit analysis in deciding whether to go for testing business models.

Second, the normative literature suggests that testing of business models is universally beneficial and that all firms should test their business models (Ittner & Larcker, 2003; Kaplan & Norton, 2001). In contrast, seen from a rational perspective, the current study suggests that benefits of business model testing are firm-specific. This paper shows that there are some cost-
benefit factors, which determine whether testing of business models would be net beneficial to a particular firm.

Third, the existing literature on business model testing (e.g., Huelsbeck et al., 2011; Ittner & Larcker, 2003; Malina et al., 2007) has largely ignored the role of support factors in testing business models. The current study extends this literature by suggesting that cost-benefit factors alone do not fully explain managers’ decision of (not) testing business models. Rather, it is the support factors that play an active role in business model testing decision.

As a final contribution, the current study develops a theoretical framework of ‘business model testing likelihood’ by mapping the cost-benefit and support factors. This paper suggests that cost-benefit factors and support factors act as a complement in increasing or decreasing the likelihood of testing a business model. This study thus responds to the recent call of Huelsbeck et al. (2011, p. 1652) for doing more research to understand “when and how business models are and should be tested”.

The rest of the paper is structured as follows. The next section provides the literature review. The third section details the research methodology. The paper then presents and analyses the empirical findings drawn from the case organization and also develops the theoretical framework of business model testing likelihood. Next, the main insights that this paper brings to the existing literature are discussed. The final section concludes the paper and offers some avenues for future research.

2. Literature review

Several academics and consultants have advocated putting key elements of an organization’s operations into a stylized business model to show how those elements are linked to each other to deliver the strategy. A business model articulates how the pieces of a business fit together (Magretta, 2002). Some examples of these models are the balanced scorecard and associated strategy map (Kaplan & Norton, 1996, 2004) and the performance prism (Neely, Adams, & Kennerley, 2002). These business models are said to be superior to multifactor dashboard approach to performance measurement, since they are built around a hypothesized causal structure (e.g., Kaplan & Norton, 1996).
However, scholars have emphasized on testing the hypothesized causal structure in business models (e.g., Kaplan and Norton, 1996, 2001; Ittner and Larcher, 2003). For example, Ittner and Larcher (2003, p. 91) mention:

> If companies don’t investigate whether there is a plausible causal relationship between actions and outcomes, they condemn themselves to measuring aspects of performance that don’t matter very much.

Testing the validity of hypothesized links in business models is said to have numerous benefits. For example, Ittner and Larcher (2003, p. 91) found that companies that “consistently built and verified causal models” on average had 2.95 percent higher returns on assets and 5.14 percent higher return on equity than companies that did not have causal models. In another study, Campbell et al. (2015) conducted an ex-post audit of failure of strategy implementation of a convenience store chain. The authors conclude that statistical analysis would have detected the problem earlier (Campbell et al., 2015). It is also said that not validating the business models can lead to a substantial waste of limited resources in the pursuit of unwanted purposes (Ittner & Larcher, 2003).

Considering the above-mentioned benefits of testing business models, it is expected that most organizations test the hypothesized causal structure of their business models. Surprisingly, the opposite is true. In a survey of 157 companies across various industries, Ittner and Larcher (2003) found that only 21 percent companies tested the causal structure in their business models. This raises an important question: Despite compelling benefits of testing business models, why do so many managers not subject their organizations’ business models to formal empirical testing? To date, the literature has largely remained silent in this regard and provides mostly untested descriptive assumptions, such as those mentioned by Ittner and Larcher (2003) – laziness and thoughtlessness.

To my knowledge, Huelsbeck et al. (2011) are the only scholars providing an empirical evidence-based explanation of why managers do not go for testing their organizations’ business models. Huelsbeck et al. (2011) tested the hypothesized causal structure in the business model of a US-based medical testing equipment manufacturing company and found only weak support for the validity of the business model. Interestingly, by seeing this result, the company’s management was neither surprised nor disturbed; rather, the management remained confident about the accuracy of the business model. Huelsbeck et al. (2011) address this seeming paradox with the help of two main factors – managers’ prior confidence in the business
model’s validity and power of the statistical tests performed. The authors argue that, as like their case organization, when managers have a higher level of prior confidence in the validity of the business models, they will demand very powerful tests to refute their high confidence in the models and vice versa. The authors conclude that there are rational reasons for not testing business models in that managers do an expected cost-benefit analysis to decide whether to test business models.

Although the study of Huelsbeck et al. (2011) is illuminating, it is only the beginning of exploring this phenomenon empirically. There might be other factors that managers might evaluate from a cost-benefit perspective in deciding whether to test business models. Further, it is little known whether there are other perspectives that might complement or substitute the cost-benefit perspective in managers’ decision of (not) testing business models. Hence, an in-depth field study is warranted to explore this phenomenon in greater detail.

3. Research methodology

Given limited theory and evidence for why organizations do not test their business models, this study uses an inductive theory-building case study approach (Eisenhardt & Graebner, 2007; Siggelkow, 2007). In the case of a theory-building research, the case(s) has to be chosen on the basis of theoretical sampling to illuminate the focal phenomenon (Eisenhardt, 1989). In line with this aim, this paper builds upon a single organization – PowerNZ (not real name), which was pursuing a business model that had not been subjected to formal empirical testing.

PowerNZ is a New Zealand–based energy and environmental infrastructure service provider. The company provides a wide range of services, including services to electricity generation, transmission and distribution to industrial and residential electricity users; infrastructure services to fibre optic asset management; solid waste management services; and greenspace management services.

Empirical evidence for this paper was collected from December 2014 to November 2015 through interviews, archival records (both written and electronic), e-mail exchange, and informal on-site (e.g., company’s cafeteria) and off-site meetings (e.g., sponsored hospitality events). It was found that the General Manager (Capability & Risks), the Business

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1 Theoretical sampling is purposefully non-random, as opposed to random sampling which is appropriate for theory-testing deductive research using statistical analysis (Eisenhardt & Graebner, 2007)
Improvement and Risk Manager, and the Chief Financial Officer were mainly responsible for the overall design and implementation of PowerNZ’s business model. As a result, these three senior managers were primarily interacted in this study. To preserve their anonymity, they are referred to as Senior Manager #1, Senior Manager #2, and Senior Manager #3, not necessarily in the same order. A total of 18 interviews were conducted, mostly lasting between 30 minutes and an hour and a half. Table 1 provides more details about data collection. Extensive notes were taken during all interviews, which were written up on the same day to capture the fuller descriptions.

Table 1 Qualitative data gathering schedule.

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<tr>
<th>Data</th>
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<tr>
<td>Interviews</td>
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<tr>
<td>Chief financial officer</td>
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<tr>
<td>General manager, Capability &amp; Risks</td>
<td>6</td>
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<tr>
<td>Business improvement and risk manager</td>
<td>8</td>
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<tr>
<td>Documents</td>
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<td>Strategy documents</td>
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<td>Performance measurement documents</td>
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<tr>
<td>General company documents (e.g., values, hierarchy)</td>
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In keeping with this paper’s use of inductive methods (Eisenhardt & Graebner, 2007), data were arranged to identify common themes and unique insights in relation to managers’ decision of not subjecting the business model to formal empirical testing. These emergent findings were then compared with existing research to refine different construct definitions, abstraction levels and theoretical relationships (Eisenhardt, 1989).

4. Empirical findings and analyses

In FY 2012–13, PowerNZ made a company-wide strategy review and decided to exit from the property investments and water and civil construction business. PowerNZ took these decisions to ensure profitability to energy and environmental service sectors, as well as to reduce its risk profile and exposure to volatile construction contracting and property investment markets. In the face of this major strategy turnaround, in 2014 PowerNZ developed a revised business model, known as the “Value Driver Tree” (see Figure 1). However, PowerNZ had not performed a formal test to ascertain the validity of underlying linkages in its business model.
Figure 1 An extract of PowerNZ’s business model (adapted from the company materials)

But why had PowerNZ not tested its business model? This study identified a total of six contributing factors in this regard. Out of six factors, three were found to be evaluated in relation to expected costs and benefits of testing a business model. Hence, they are grouped as cost-benefit factors. On the other hand, the other three were found to play a rather supportive role in testing the business model, which are grouped as support factors. The following section elaborates on this observation in more detail.

4.1 Cost-benefit factors

4.1.1 Data availability

Without the availability of necessary data, it is unlikely that an organization can test hypotheses underlying its business model. In the same vein, this study finds that lack of necessary data was one of the major reasons for not testing PowerNZ’s business model. However, lack of
necessary data *per se* was not seen as the main reason; rather, managers evaluated it from a cost-benefit perspective.

To reflect the updated strategy, PowerNZ’s revised business model contained some new variables as well as some old variables. As there were some new variables (e.g., provide right support to the business) in the revised business model, which were yet to be fully operational, PowerNZ did not have necessary data to test the total business model. However, managers had the opportunity to conduct a partial test of the business model – i.e., the portion of the business model for which data were available for underlying variables. But conducting a partial test of the business model did not make sense on the ground of a cost-benefit analysis.

Look, we have some data, although not all. So, we could do some tests. But that would have been piecemeal basis, and would not give us the total picture. But you know, you got to incur lots of costs for that [i.e., a partial test]. And this cost [of a partial test] would not be significantly lower than if you were to test your total [Value] Driver Tree. So, the value you would get from partial testing [as opposed to testing of the total business model] doesn’t outweigh the costs. So, what I mean is that you got to think about your costs and benefits of [doing a] partial test and [a] full test [of the business model]. (Senior Manager #2).

Not conducting a partial test of the business model can be explained from a rational viewpoint. Let’s discuss it first from the value perspective. A business model tells the ‘story’ of how an organization will deliver its strategy (Magretta, 2002). Only testing of the whole business model provides an opportunity to validate the total ‘story’. Whereas testing of the partial business model will only help to validate the partial ‘story’. In the case of a business model, different parts are tightly related and have chain effects (e.g., Ittner & Larcker, 2003; Kaplan & Norton, 2004). That is, different parts of a business model do not work independently. Modifications of variables (if required after a partial test) in one part of the business model are likely to have an impact on the organization of variables in the other part(s) of the business model. Therefore, the value from a partial test is likely to be limited, since it will be remained unknown that what would be the implication of results from the tested part(s) of the business model for the untested parts. Further, if the untested parts were to test, the results of those untested parts could have had implication for the tested parts of the business model. Thus, the value of conducting a partial test of a business model is likely to be significantly lower than that of a complete test of the business model.
Whereas from the cost perspective, the converse is likely to be true for conducting a partial test and a complete test. That is, the costs, especially the fixed costs such as the cost of hiring consultants to perform rigorous empirical tests and costs of maintaining large database, to be incurred to conduct a partial test of a business model is unlikely to be significantly lower than that of a complete test of the business model. Therefore, although a partial test of a business model can provide some useful insights, albeit incomplete, such a test is unlikely to sustain from a cost-benefit perspective.

Further, in the business model, for most of the old variables (e.g., deliver profit, cashflow, regulated revenue, etc.), PowerNZ had data for more than past 15 years. However, comparable historical data were not available for all the new variables in the business model, since not all the new variables were operationalized at the same time. Rather, some new variables (e.g., deliver projects on time) were operationalized for more than a year; some (e.g., deliver high quality service) were operationalized for less than a year; and some were operationalized for only a few months.

Despite having data for all underlying variables in many hypotheses, lack of comparable data was an important reason for not testing these hypotheses. Testing of hypotheses without having a reasonable period of comparable data for underlying variables was not considered to be able to generate much insight. Consequently, such a test did not make “any sense” to the managers and was regarded as testing for the “testing sake” only. The following quote explains it:

You got to have historical data for all these variables [pointing at different variables in the business model] to test your hypothesis. But, currently, we don’t have enough data for them [i.e., different variables]. We have many new variables [in the business model] that are getting measured only recently. So, you have hypotheses [pointing at different links in the business model], but you don’t have same period data for these variables [pointing at different variables in the business model]. So, you can do the test. But the question is: Would that make any sense? Would your test actually give you much insight? Or it [the test] would be only for the testing sake! (Senior Manager #1).

This paper argues that managers’ decision of not testing a hypothesis due to lack of comparable data is rational. Because, on one hand, testing of hypotheses without having a reasonable period of comparable data for underlying variables does not have enough statistical power to refute or support these hypotheses (Cohen, 1988) underlying a business model (see also Huelsbeck et al., 2011). On the other hand, testing of hypotheses underlying a business model is associated with several costs such as the cost of managers’ time and efforts, database maintenance, and
hiring consultants. From a rational perspective, therefore, managers are unlikely to incur costs by means of conducting a not-enough-powerful test, given the limited insights likely to be generated from such a test.

The above findings are relevant for PowerNZ’s business model which can be referred to as an early-stage business model – the model that is developed or has gone through a major modification recently. Do these findings also likely to be pertinent for a mature business model – the model that is not developed or has not gone through a major modification recently? This paper argues that the above findings will also have relevance to mature business models, especially organizations operating in a dynamic business environment. The business models of organizations operating in a dynamic business environment change frequently to reflect the rapid changes in the business environment. In such a situation, it is likely that some variables in the business model would be newly operationalized, whereas some variables would yet to be operationalized, since the basis of their measurement might not be agreed by the top management yet. The former will create a problem regarding the availability of comparable data, while the latter will make the problem in relation to a partial vs. a complete test of a business model. Therefore, like early-stage business models, despite having mature business models, organizations operating in a dynamic business environment are unlikely to go for testing their business models on the ground of a cost-benefit analysis.

On the other hand, mature business models of organizations operating in a relatively stable business environment are unlikely to go for frequent changes. In such a situation, an organization is likely to follow a particular business model for a longer period of time without any major modifications. This allows an organization to have a reasonable period of comparable data for underlying variables in hypotheses, as well as to have necessary data to make a complete test of a business model, which is likely to make sense from a cost-benefit perspective.

**Proposition 1:** From a rational viewpoint, when an organization does not have i) data to perform a complete test of its business model and/or ii) a reasonable period of comparable data for underlying variables in its business model, the organization is unlikely to test its business model.

4.1.2 The business model’s stability

PowerNZ’s revised business model came into existence to reflect the updated strategy. In the first six months after its development, the business model came across various changes in terms
of both numbers and contents of underlying variables and their expected relationships. These changes took place based on managers’ assumptions without backed by any formal test. After the first six months of the business model’s development, the changes were still continued, although the frequency and degree of changes were dropped to some extent but not to a great extent. Managers noted that the business model was yet to be reached to a solid state, which might take a couple of years more. A senior manager explained it as follows:

So, you can say this is Version 1. It’s probable that in Version 2 or 3 there will be some items that are not here. Again there are some items here which are nebulous and we need to update them. So, for example, we did a little bit of them in last week. We identified that procurement is a very vital part of our business, but it is not included in the [Value] Driver Tree at the moment. They [procurement activities] are actually an important cost driver for the business. … So, you know we make the update each time when something new comes into our heads! Right now the updates are more frequent. (Senior Manager #1).

These frequent changes of the assumptions were mostly driven by inherent complexities in business operations, where, unlike in physical sciences, means-ends relationships are less deterministic and more complex (Malina et al., 2007). Managers mentioned that identifying the correct linkages amongst different variables is not that simple, since several other complex issues are associated with it such as time lag and mediating and moderating effects. They also acknowledged that they were yet to learn all these inherent complexities, which were leading them to change different assumptions underlying the business model frequently.

[…] there is a lag between [taking] an action and the influence of the output. So, for example, if you do an instant change in X, you may not get an instant change in Y. Because many things in the service do not change instantly; rather, there may be a considerable amount of lag between input and the influence of the output. You need to understand what causes the lag, whether the effect is further moderated by any other things during this lag period and [whether] the output is the result of original action or it’s a combined thing that you didn’t think [initially]. … Whatever action you take, it will have a time lag to generate more sales and is expected to be moderated by some other efforts that are beyond your imagination or expectation. So, that’s why we are not yet to understand all these sophisticated issues. I don’t think we will get to understand that sophistication very soon … (Senior Manager #1).
However, these frequent changes of assumptions underlying the business model had implication for the testing of the model. Testing a business model that was going through frequent changes was not considered to be justifiable from a cost-benefit perspective:

[…] if you change your assumptions so frequently, will you afford to test your assumptions so many times? Will it [testing frequently changed-assumptions] give us any value? Because it [testing assumptions] costs your money, your time, and obviously your energy. So, over time when you observe [that] the model is not coming across many changes, then you can say, well, the model has got some stability. And then you may think about testing your assumptions [formally]. (Senior Manager #3).

Not testing an unstable business model obviously makes sense from a rational perspective. Literature on management and organization has long recognized that rational managers’ selection of particular course of actions are contingent upon a cost-benefit compromise between managers’ desire to make an appropriate decision and their negative feelings about the time, efforts, and money invested in the decision making process (Beach & Mitchell, 1978; McAllister, Mitchell, & Beach, 1979; Smith, Mitchell, & Beach, 1982). As the underlying assumptions in a relatively unstable business model change frequently, testing of such a model is likely to generate rational managers’ negative feelings about the invested time, efforts, and other resources, considering the limited value expected from testing of such an unstable business model. This was clearly visible in the above quote of Senior Manager #2: “Will it [testing frequently changed-assumptions] give us any value? Because it costs your money, your time, and obviously your energy”.

Although early-stage business models are more likely to lack stability, irrespective of their representative organization’s business environments, the above findings are also germane to mature business models of organizations operating in a dynamic business environment. Because such a mature business model is also likely to have a considerable degree of instability. A dynamic business environment changes in a fast speed, which, in turn, are likely to force managers to change their assumptions underlying the business models frequently. In such a situation, managers are unlikely to test their organizations’ business models from a cost-benefit perspective. On the other hand, business models of organizations operating in a stable business environment are likely to have a reasonable degree of stability. In such a case, testing of business models is likely to make sense from a cost-benefit analysis.

Proposition 3: From a rational perspective, when an organization does not have a stable business model, the organization is unlikely to test its business model.
4.1.3 Ex-ante confidence in the business model’s accuracy

Although PowerNZ’s business model had never been subjected to formal empirical testing, managers had a very higher level of confidence in the premise of the model’s accuracy. This ex-ante high confidence level in the business model’s accuracy led to assign a low level of priority in testing the business model relative to other important activities. As a result, the opportunity costs of testing the business model mounted. Therefore, using company’s resources for a low priority task such as testing of the business model at the expense of other high priority tasks, for example, replacing old electric poles, was not considered a prudent decision.

In lots of cases, I don’t want to blink it [pointing at the Value Driver Tree]. Because in most of the cases it’s [the relationship between different variables in the model] obvious, I mean reasonably obvious. And … it also comes out of relative priority. So if you are 90% sure that you are doing the right thing and you have 25 other priorities, you not gonna go and test the linkages. You would probably say that I have bigger problems to fix up. You wouldn’t spend your money on low priority [tasks], would you? (Senior Manager #3).

However, testing of the business model was considered to be a learning for the company. But the value of such a learning was not perceived to be so compelling to outweigh the potential (actual and opportunity) costs of testing the business model. This can be seen from the below comment:

But I will say that testing [the business model] would be a learning for us. Actually when we go to validate and see that these are the things that are not influencing our outcome, [then] that would be a learning for us. … But we have many more important tasks to focus on. … For example, we are thinking to replace all our wooden [electric] poles with metal poles phase by phase. Because wooden poles are draining a huge amount of money by frequent maintenance and repairing works. So, we have many critical areas [than testing the business model] to use resources. (Senior Manager #3).

Not testing a business model when managers have high ex-ante confidence in the model’s validity can be explained from a rational point of view. In order to ensure competitiveness, rational managers use firms’ resources to pursue initiatives – even in the case of corporate social responsibility – those are commercially viable, which are often determined on the ground of a cost-benefit analysis (Bansal & Roth, 2000; McWilliams & Siegel, 2001). In the same line, when managers have high ex-ante confidence in the business model’s accuracy, testing the
model is considered a low priority task and other important activities receive an increased priority. In such a situation, to gain competitive advantages, rational managers, therefore, will not use firms’ limited resources for a low priority task (i.e., testing business models) at the sacrifice of other high priority tasks.

Proposition 4: From a rational perspective, when an organization has a high level of ex-ante confidence in the validity of its business model, the organization is unlikely to test its business model.

4.2 Support factors

4.2.1 Employee buy-in to the business model

Employee buy-in has long been recognized as one of the critical success factors in the literature on organizational change management (for a review, see Armenakis & Harris, 2009) and (Choi, 2011). In line with this research, the current study finds the lack of employee buy-in as an important driver to hinder efforts around business model testing.

In the case of PowerNZ, as already mentioned in the ‘research methodology’ section, three senior managers had direct responsibility to the overall design of the business model. But testing of a business model actually requires various supports (e.g., providing necessary data on time) from employees at various organizational levels. At PowerNZ, employees at mid and operational levels did not buy into the idea of the business model implementation, at least not during the research effort. Rather, employees perceived the business model mostly as a weapon of the top management to ensure “micro-management”. This was rather clear from the interviews:

Their [employees down the level] perception of the [Value] Driver Tree is that it’s something the Executive Team has come up with to bash them [i.e., employees], to be honest with you! (Senior Manager #2).

[…] they do think that it’s a ‘micro-management’ type thing. That is, they would be more controlled and their work would be more closely scrutinized. So, that’s the challenge – to sell to the people that why we are doing it. (Senior Manager #3).

As employees at various organizational levels did not welcome the idea of implementing the business model, when these employees were asked to provide any support such as reporting necessary data and sharing ideas about the design of the model, they would frequently put forward lots of excuses to avoid or delay the request. Consequently, managers found difficulties
to pursue timely efforts regarding activities around the design of the business model including its testing.

So, when we ask them [employees down the level] to do anything for the [Value] Driver Tree, we frequently get different excuses that “I am very busy”, “I have already got a lot to do today”, “Who is gonna do my job”? So, you can’t move ahead easily [with testing of the business model] when you don’t get your employees’ supports when you need them [supports]. (Senior Manager #2).

Lack of employee buy-in to a business model can delay or even can stop the testing of the business model. When there is a lack of employee buy-in to a control system such as a business model, employees are likely to perceive it as a ‘coercive’ control system (see Ahrens & Chapman, 2004). Employees then distance themselves from the system and hold back necessary cooperation fearing that their cooperation might further coerce them into the control system (see Adler & Borys, 1996). This can delay the business model testing initiatives in that lack of appropriate cooperation from fellow employees can hinder managers to take timely efforts around testing the business model. At its worst, lack of employee cooperation may create organizational deadlock (Armenakis, Harris, & Mossholder, 1993), which may even fail an organization’s initiatives to test its business model. On the other hand, if employees perceive the business model as an ‘enabling’ control system, they are likely to extend their cooperation to managers regarding activities on and around business model testing (see Adler & Borys, 1996; Ahrens & Chapman, 2004), which, in turn, can accelerate the business model testing process.

*Proposition 5*: When an organization lacks employee buy-in to its business model, testing of the business model is likely to be delayed or failed.

4.2.2 Employee accountability in implementing the business model

Although managers have overall responsibility for designing and implementing a business model, the business model will be ultimately implemented through employees at various organizational levels. At PowerNZ, there was a misalignment between employee accountability and the activities on and around the business model implementation. For example, in the past, managers did some sorts of analyses on ad hoc basis regarding some variables underlying the business model. But quite often proposed actions derived from such an analysis remained due and no one was held accountable precisely. That is, there was a lack
of current employee accountability in the business model’s implementation. A senior manager explained it with the help of an example:

So, for example, take [one of the variables in the business model] reducing harm to people [employees]. We did some analysis of our current data. We identified [that] the best way to reduce harm to people is to stop hurting their back. When employees are handling heavy machineries manually, they get hurt at their back, which causes 80% of the health-related injury to our people. To improve hurting employees at their back, you need to reduce the manual handling where possible, or finding improved or different ways of handling the machine manually that wouldn’t essentially hurt their back. Train your people about the procedures in place. Make sure people are aware of the control activities in place and how to use them. Once these are done, you can see in your statistical process chart of harm that 80% [of harm incidents] will go down. … But, no one is held accountable for reducing harm from X to Y in time T. No one is exactly accountable for these activities … Perhaps people’s [job] responsibilities should be revised towards these activities and the like. (Senior Manager #1).

This was further reinforced by another senior manager:

Definitely, we have accountability at every level in this organization. But [currently] it [accountability] is not fully aligned with our [Value] Driver Tree. That’s why many times people just don’t care about it [i.e., Value Driver Tree]. (Senior Manager #2, emphasis added).

Also, managers did not have a confidence that an appropriate level of employee accountability would become available in near future – i.e., future employee accountability – in relation to the business model’s implementation. Considering lack of current employee accountability as well as lack of confidence in future employee accountability in implementing the business model, taking more efforts regarding business model design activities such as its testing were considered pointless, as can be seen from the below quote:

So, you can build one hundred [Value] Driver Trees, testing these [pointing at different linkages in the Value Driver Tree], and at the end of the day, [if] no one is held accountable for implementing the [Value] Driver Tree, will it work? Definitely, the answer would be a big no. And I don’t see any good sign in near future. … So, doing all these testing and designing stuff would be meaningless unless you can assign and ensure appropriate accountability for them. (Senior Manager #1, emphasis in original).
Lack of current employee accountability and confidence in future employee accountability to implement the business model reduce managerial efforts around business model testing for several reasons. First, literature on leader-member exchange (LMX) suggests that there is often a reciprocal relationship between managers’ and employees’ effort taking behaviours (e.g., Graen & Uhl-Bien, 1995; Maslyn & Uhl-Bien, 2001). That is, if employees put forward a greater effort in organizational activities, managers will also follow, and vice versa. Therefore, due to lack of current employee accountability, when there is the current lack of employee efforts in implementing a business model, there is likely to be reduced current managerial efforts around business model design activities such as its testing. Second, literature on work motivation suggests that if the extrinsic consequences to which a person’s activity leads are not desirable, it does not arouse the person’s intrinsic motivation towards the activity (Gagné & Deci, 2005; Ryan & Deci, 2000). In the same line, if managers do not find enough confidence in the future employee accountability in implementing the business model – i.e., a desired extrinsic consequence of business model testing, managers are likely to be less aroused intrinsically to exert greater efforts around business model testing. This, in turn, will delay the business model testing process. In the worst situation, managers might stop taking any effort around business model testing.

Proposition 6: When there is a lack of current employee accountability and/or lack of confidence in future employee accountability in implementing a business model, testing of the business model is likely to be delayed or stopped.

4.2.3 Linkage between pay and an effective design of business models

In the case of PowerNZ, the linkage between pay and performance was almost absent in every place. As a result, there was also almost no link between pay and an effective design of the business model. Specifically, doing a good or bad design of the business model did not have much (if any) impact on the managers’ pay and other financial benefits. Consequently, taking much effort around business model design activities such as its testing was not considered a serious issue. A senior manager acknowledged it as follows:

[…] in most of the cases there is no link between your pay and developing a well-crafted [Value] Driver Tree. … I think Senior Manager #2 will still get a pay rise and will keep his job at the end of the year, even though the metrics under him will not meet the target and this [Value] Driver Tree doesn’t move much [laughter]! And I am pretty sure, I will
also keep my job even if I don’t do any stuffs around the [Value] Driver Tree [big laughter]! (Senior Manager #1, Emphasis added).

Although there were opportunities to pursue more efforts around testing the business model, a lack of linkage between the pay and an effective design of the business model seemed to be a factor that had stopped taking more managerial efforts in this regard. For example, Senior Manager #1 had been trained on performing advanced statistical tests, and he could pursue more efforts (e.g., doing more analysis of different variables in the business model) than he was doing currently around testing of the business model. But there was a lack of financial incentive for him to initiate more efforts in this regard:

[...] I have training on advanced statistical modelling, regression, and Statistical Process Control [SPC]. … So, I can do a lot of these [testing] stuff. But it’s not on my list of things to do. [Because] where is the incentive to do that? (Senior Manager #1, emphasis added).

Despite presence of opportunities, not taking much effort around business model testing due to a lack of linkage between pay and an effective design of the business model can be explained by research on pay-for-performance. Although the effects of pay-for-performance on employees’ efforts and productivity is mixed and is contingent on various factors (e.g., Beer & Cannon, 2004; Frey, Homberg, & Osterloh, 2013; Shaw, Gupta, & Delery, 2002), research suggests that a link between pay and performance is advantageous relative to fixed salary in motivating employees to exert more effort (Cadsby, Song, & Tapon, 2007). In fact, there is an overwhelming evidence that money has strong motivational potential when it is used contingent of performance, as opposed to using money per se (for a review, see Rynes, Gerhart, & Minette, 2004). Therefore, a lack of linkage between managerial pay and an effective design of the business model is unlikely to motivate managers to exert more effort around business model testing, which, in turn, will delay the business model testing process. In a worst scenario, managers might stop taking any effort around business model testing.

Proposition 7: Lack of linkage between managerial pay and an effective design of the business model is likely to delay or stop the testing of the business model.
4.3 Towards a theory of business model testing likelihood

Based on the above findings, this section develops a theoretical framework of business model testing likelihood (see Figure 2). The cost-benefit factors are presented on the vertical axis, whereas the support factors are presented on the horizontal axis. The cost-benefit factors are the primary drivers to decide whether an organization would go for testing its business model. There are two dimensions of cost-benefit factors: pass or fail. That is, if testing of a business model does not pass the cost-benefit test, an organization is unlikely to go for testing its business model, and vice versa.

On the other hand, support factors do not decide whether an organization would go for testing its business model. Rather, they relate to the efforts associated with a business model test. There are two dimensions of support factors: favourable and unfavourable. When support factors are in a favourable position in an organization, they increase the efforts around business model testing, which, in turn, is likely to accelerate the testing process. Whereas when support factors are in an unfavourable position, they decrease the efforts around business model testing, which, in turn, is likely to delay the testing process. At its worst, the presence of unfavourable support factors might even fail an organization to test its business model.

Cost-benefit factors

<table>
<thead>
<tr>
<th>Support factors</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
</table>
| Unfavourable    | • Business models are likely to be tested, but with a slower speed  
|                 | • In the worst case, organizations may fail to test their business models despite the models pass the cost-benefit test  
| Favourable      | • Business models are likely to be tested with a higher speed  

|                  | • Business models are unlikely to be tested  
|                  | • There might be no or very little effort around business model testing  
|                  | • [The business model of PowerNZ – i.e., the case organization – fits in this cell]  
|                  | • Business models are unlikely to be tested  
|                  | • There might be some efforts around business model testing  

Figure 2 Theory of Business Model Testing Likelihood
A brief description regarding each of the four cells is presented below:

**Fail and unfavourable:** The business models in this cell fail on the ground of a cost-benefit analysis and their representative organizations possess unfavourable support factors. As a result, organizations are unlikely to test these business models and there are likely to be no or very minimal effort around testing of the business models. The business model of PowerNZ falls in this cell.

**Fail and favourable:** Although the business models in this cell do not pass the cost-benefit test, their representative organizations contain favourable support factors. As a result, although these business models are unlikely to be tested, there might be some efforts around business model testing due to the existence of favourable support factors.

**Pass and favourable:** This cell represents the business models of those organizations where testing of business models has passed the cost-benefit test and support factors are in a favourable position. As support factors are in a favourable position, efforts around business model testing will be increased, which, in turn, will accelerate the testing process. Hence, business models in this cell are likely to be tested with a higher speed.

**Pass and unfavourable:** This cell is for those organizations’ business models where testing of business models has passed the cost-benefit test but support factors are in an unfavourable position. Although testing of the business models makes sense from a cost-benefit perspective, there will be reduced level of efforts around business model testing because of the presence of unfavourable support factors. Therefore, although the business models in this cell are likely to be tested, testing will follow a rather slower speed. However, at the worst scenario, the support factors might be at the extremely unfavourable position, which might even fail the business model testing initiatives despite such a testing passes on the ground of a cost-benefit perspective.

**5. Discussions**

Given limited theory and empirical evidence, this study has used an inductive theory-building case study approach to explore why organizations do not subject their business models to formal empirical testing. The case of PowerNZ provides a context-rich understanding of various factors that contributed managers’ decision of not testing the business model. The current study contributes to the literature in several ways. First, existing literature suggests that
managers do not test their organizations’ business models due to laziness and thoughtlessness (Ittner & Larcker, 2003). This literature mostly describes managers’ decision of pursuing statistically untested business models as ‘behavioural anomalies’. The current study contributes to the literature by suggesting that managers have rational reasons for not testing their organizations’ business models. This paper shows that managers do an expected cost-benefit analysis in relation to several factors associated with business model testing.

The current study shows three cost-benefit factors in business model testing: data availability, the business model’s stability, and ex-ante confidence in the business model’s accuracy. These factors are referred to as cost-benefit factors because they \textit{per se} are not regarded as a problem in business model testing; rather, managers evaluate these factors in relation to expected costs and benefits of testing a business model. This paper thus suggests that testing of a business model is not universally beneficial for all firms from a rational perspective, which is contrary to what is currently proposed in the normative literature (cf. Ittner & Larcker, 2003; Kaplan & Norton, 2001).

Second, the prior literature on business model testing (Huelsbeck et al., 2011; Ittner & Larcker, 2003; Magretta, 2002) has largely ignored the role of support factors therein. This paper extends this literature by suggesting that although cost-benefit factors are important, they do not fully explain organizations’ decision of (not) testing business models. The current study shows three supports factors – employee buy-in to the business model, employee accountability in implementing the business model, and linkage between pay and an effective design of the business model – and argues that they can accelerate, delay, or even might fail a business model testing attempt.

Finally, the current study contributes to the literature on business model testing (e.g., Huelsbeck et al., 2011; Ittner & Larcker, 2003; Kaplan & Norton, 2001) by proposing a theoretical framework of business model testing likelihood (see Figure 2). This study suggests that cost-benefit and support factors play a complementarity role in increasing or decreasing the likelihood of testing a business model. Cost-benefit factors decide whether to go for testing a business model, whereas support factors decide how much effort to be produced in relation to business model testing.

The current study suggests that a business model is likely to be tested with a higher speed when such a testing passes on the ground of a cost-benefit analysis and when support factors are in a favourable position. On the other hand, when support factors are in an unfavourable position
and testing passes from a cost-benefit perspective, a business model is likely to be tested with a slower speed. However, if support factors remain in an extremely unfavourable condition, a business model test might be failed even though such a test passes from a cost-benefit analysis.

6. Conclusion

Testing of a business model can offer numerous benefits to an organization. Despite such benefits of a test, not many organizations test their business models. Not much is known, however, why so many organizations do not subject their business models to formal empirical testing. This study focuses on this question. Drawing upon data from an in-depth field study, this paper shows that there are rational reasons for managers’ decision of not testing business models. These findings contradict the normative literature that suggests that managers do not test business models due to laziness and thoughtlessness. The current study also suggests that it is the support factors alongside the cost-benefit factors that play an important role in business model testing. Finally, by mapping cost-benefit and support factors, this study develops a theoretical framework suggesting when a business model is (un)likely to be tested.

Future research could examine whether there are other cost-benefit and support factors, other than those identified in this study, which can influence managers’ decision of (not) testing business models. Based on observations from a single case organization, this study develops various propositions and a theory of business model testing likelihood. Future research could refine this theory by investigating the validity of this proposed theory and propositions in other organizations. More research in this regard has the merit to enhance our current limited understanding of when a business model is and should be tested and managers’ decision of (not) subjecting business models to formal empirical testing.

References


