Variability: The effects of variation in power relations within the firm, in its market performance, and in the evaluations of its products

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6. Conclusion

The main aim of the thesis is to explore – and to bring into prominence – the impact of evaluatory signal variability, market performance variability, and leadership variability in the NPD process on organizational strategy, performance, and stakeholder attitudes and behaviors. This final chapter synthesizes the findings of the four studies. Firstly, major findings are summarized. Following this, a discussion to explain the implications of the findings to the main theoretical themes is presented. Next, implications to managerial practices are clarified and finally, several suggestions for further research are given.

6.1. Major findings

Chapter 2 focuses on the determinants of market performance of sequels. Included here is confirmation of the findings of previous studies by showing the forward carry over effect of evaluatory signals and market performance of past editions on the sales of sequels (Hennig-Thurau et al., 2009). What is new in this study is that that the variability of evaluations across previous editions in the series moderates the carry over effect, both in the context of consumer evaluations and expert evaluations. In addition, several other moderating factors were identified as to the effect of consumer evaluations of past editions, namely: the sales performance of the past editions and the type of social interaction during product consumption. Both of these factors strengthened the effect of consumer evaluations of past editions to the sales of sequels.

Chapter 3 concentrates on exploring the determinants of consumer evaluations and expert evaluations of product sequels by examining past performance indicators and the consensus within the consumer and expert communities. Chapter 3 supports the carry-over argument in the context of product reviews. The results confirm a positive relationship between consumer evaluations of past editions and consumer evaluations of the sequel, and between expert evaluations of past editions and expert evaluations of the sequel. The main contribution in this study is that it also illustrates that a lack of consensus among consumers can weaken the relationship between the consumer evaluations of the past editions and consumer evaluations of the sequels. This same moderating relationship is again observed in the context of expert critics. Another contribution of this study reveals that expert critics are indeed influenced by the market. Consumer behaviors (sales) of the past editions were shown to have a significant and positive effect to expert evaluations of sequels.

Shifting the attention towards the company itself, Chapter 4 analyzes the determinants of the decisions to explore a new market segment. In this regard it is shown that the variance of sales, the variance consumer evaluations, and the variance expert evaluations have a positive effect to the probability of explorations. Results also show that positive trends of performance in terms of sales and consumer evaluations negatively affect the probability of a new genre exploration; however, a positive trend of expert evaluations has a negative effect. This finding signifies how different performance indicators can have contradictory effects to management decisions.

Chapter 5 looks deeper into the internal environment of the organization by exploring the effects of changes in the level of relative influence of marketing and R&D departments during an NPD process. The results indicate that companies that have a rich history of changes, or high variability, in terms of marketing and R&D influence level are able to perform better than companies that experience fewer changes. This effect is especially beneficial for companies that also have a high degree of integration between the two departments, while a high level of integration that is coupled with fewer changes can lead into a much lower level of performance.

6.2. Implications to the main theoretical themes

The first major theme in this study is the effects of evaluatory signals. The basic assumption in the literature is that the ideas and the impressions connected to the earlier editions are transferred to the next edition (Keller 2003; Sunde & Brodie, 1993). Past consumer evaluation (Hennig-Thurau et al., 2009) or quality assessment (Völckner & Sattler, 2006) have been shown to have a positive effect on future performance. This concept is confirmed by showing how evaluation of past editions can positively affect sequel sales (Chapter 2), sequel evaluations (Chapter 3), and new segment explorations (Chapter 4).

What has been overlooked by prior studies is the effect of variability of evaluations explored in this thesis. Variability of evaluation can create an ambiguous or an uncertain product image in the eyes of potential buyers (Das & Chen, 2006) and it was demonstrated in Chapters 2 and 3 that the ambiguity of these signals negatively affects future performance. The observed direct effects of variability of evaluations strengthen the arguments of Das and Chen (2006) about how the variability of opinions affects product performance. In addition, variability is especially damaging for high performing products because it can mitigate the carry over effect of other performance indicators. Considering the significant role of evaluations variability, both as a determinant of performance and as a moderating factor, future research should consider using variability as an alternative when discussing the impact of product reviews on the performance of (creative and cultural) products.

In Chapter 4, it is shown that besides affecting stakeholder behaviors and attitudes, evaluatory signals and the variability of these signals across time can also influence management decisions. The implications of this finding are two-fold. Firstly, with regard to the main topic, it explains how variability of evaluatory signals can have a strong effect not only to consumers or expert critic behaviors, but also to the organization itself. This result is new for the exploration and exploitation literature because when discussing performance, it is often defined as market performance or sales, not as product evaluations (see Raisch & Birkinshaw, 2008). Secondly, by providing evidence about the effects of evaluatory signals on organization strategy, the research signifies that the impact of product evaluations is stronger than previously acknowledged by the literature, which so far limit the test of the impact of evaluatory signals on sales or consumer behavior (c.f. Basuroy, Chatterjee, & Ravid, 2003; Boatwright, Basuroy, & Kamakura, 2007; Eliashberg & Shugan, 1997; Liu, 2006; Reddy, Swaminathan, & Motley 1998; Sun, 2012; Zhu & Zhang, 2010). With the digitization of information, the ever increasing number of mobile devices and connected users, and the relative ease to submit (or blog, post, and tweet) product evaluations and opinions online, it is not surprising that online consumer opinions influence how organizations operate. An example from the industry is worth noting. Electronic Arts was forced to redevelop their product and publish free contents because of the overwhelmingly negative consumer evaluations. The product itself had minimal technical errors and received critical acclaim. Future research about exploration and exploitation, innovation, or discussions about organization strategy in general should be strongly encouraged as should consideration of the impact of consumer evaluations and the fluctuation and dispersion of consumer evaluations –in addition to market performance as a determinant of strategy.

An additional find in conducting the study is that expert critics are affected not only by their own evaluations of the past editions, but also by consumer evaluations and sales of past editions. Chapter 3 shows that the market performance - in a sense, the visible hand of the market - can actually influence expert opinions, particularly when the experts have a low level of consensus. This finding opens up a new perspective for the literature about the relationships between signals and performance. It is also a counterintuitive result, because expert critics are considered "professionals" that possess a high level of credibility to assess products ”objectively” and “independently” without being affected by signals originating from others, particularly, the market.

Even though the results suggest that expert critics are influenced by the market, it seems that companies still have high regard for critics’ acclaim. Chapter 4 shows that organizations seemed to react to a positive trend in expert critic evaluations as a momentum to expand their operation and explore new market segments, instead of viewing critical acclaim as a reason to keep on doing the same, as for instance, in March’s (1991) argument that performance is negatively related to the likelihood of exploratory behavior. This paper argues that expert opinions are more about how these experts judge the capabilities of the organization as evidenced by the products that have been produced by the firm. Therefore, its potential implication is not limited to the submarket to which these products belong. Critical acclaims could be considered to give the producer the reputational capital that can be transferred to other submarkets, while sales and consumer evaluations are more about how well the products satisfy consumer preferences in the context of a submarket. Therefore, based on the results in this thesis, one can argue that Singh’s (1986) and March’s (1996) arguments may be limited to only specific type of performance and future research might want to consider both March’s (1996) theory and the threat rigidity thesis (Staw et al. 1981) when discussing organization risk taking behavior. These results open up various new avenues for research. To start with, it could be of great interest to further explore the effects of different kinds of past performance - and of different performance metrics - on strategic decisions.

The second theme of this thesis is the feedback effects of market performance. Chapters 2 and 3 confirm that sales performance of past products has a positive impact on the sales and evaluations of sequels (c.f. Hennig-Thurau et al., 2009; Keller, 1993). Also Chapter 4 confirms March’s (1991) argument relating to the negative relationship between satisfactory performance and risk taking (explorative) behaviors. Chapter 5 reconfirms that the availability of resources, which is more likely after good past sales performance, leads to a more successful new product performance (c.f. Leenders & Wierenga, 2008).

In addition to the confirmation of previous research, this endeavor makes several contributions for this theme. First of all, Chapter 4 demonstrates the relationship between the variability of market performance and risk taking behaviors. It shows that if sales performance is increasing, companies avoid seeking entrance to a new market segment. On the contrary, when there was a high level of variance in the market performance of their products, organizations are more willing to expand to a new market segment. The study in Chapter 4 signifies that in order to study the effects of past performance on future behavior, one has to take full account of the variability - and a trend is a particular form of variability over time - of market performance.

Secondly, another role of market performance is demonstrated herein, namely as a “weighing factor” with respect to the relationship between past evaluatory signals and sales of future products. Chapter 2 explores an interaction between sales performance and evaluatory signals, an advance on previous studies that looked at past quality evaluation and past performance, which operationalize these constructs as independent non-interacting factors (c.f. Dacin & Smith, 1994; Hennig-Thurau et al., 2009; Keller, 1993; Volckner & Sattler, 2006). The adoption of the Theory of Reasoned Action in the discussion of product sequels is unique and as far as is known, this study is the first to do so. The adoption of this theory provides the theoretical basis to operate past sales as a weighing factor. However, it is not known for certain how market performance influences individual opinion. Further studies should deepen the understanding of such interacting processes and also the impact of other possible weighing factors. One concrete possibility would be to track individual reviewers across product, across time and observe how sales and the size of user community influence the ways these individual reviewers weigh information from the community and use this information in their individual opinions.

The last theme of this thesis is about how the variability of leadership in an NPD process can lead to better performance. In Chapter 5 it shows how a rich history of changes in terms of the level of influence of marketing and R&D has a positive effect to the organization. Also, it appears that a rich history of changes coupled with a high level of integration is the best configuration for organizations. The capability to change indicates an organization's flexibility and if it is also able to maintain a high level of integration, means that the organization is able to absorb knowledge from marketing and R&D while also maintaining a good relationship between the two. However, without changes, integration is devalued because both parties tend to avoid conflicts and be unable to challenge the dominant view in their relationship. These results help to explain the weak relationship between integration and performance (Henard & Szymanski, 2001; Troy, Hirunyawipada & Paswan, 2008) by framing it as a moderator of changes rather than a stand-alone factor. This study limited itself to the variability of the balance of power across the marketing/R&D interface. The effects of such variability could also be explored with respect to other types of power relations within the organization, like the synergy between dual leaders in an organization led by two hierarchically equivalent executives (c.f. Bhansing, 2012) or changes in the balance of power between top and middle management.

Finally, the link between changes of relative influence and the previous themes can be highlighted. The first and second themes concern the stakeholders, their behaviors and attitudes, and the factors that help to determine product sales (Chapter 2) and evaluations (Chapter 3) are investigated, followed by the exploration of how sales and evaluations can motivate the organizations to take certain strategic choices (Chapter 4). In Chapter 5, the continuation of this line of thinking shows how the changes of relative influence during an

NPD process positively affect new product performance. One of the reasons for these changes is the decline or instability of performance (c.f. Chapter 4). A crisis can shift organization focus more towards refining its marketing strategy and developing marketing innovation capabilities (Naidoo, 2010). The discussion and results from Chapter 4 and Chapter 5 indirectly suggest that the variability of performance is a condition that can encourage the organizations to “rock the boat” (Souder 1980, 1988). Although this is not tested directly, the research here argues that the variability of market performance and evaluatory signals are necessary conditions which lead organizations to take risk, to conduct experimentation, and to make changes, which would lead the organization to a broader perspective which is positively linked to performance. This contrasts with the view - widely present in the literature on management, marketing, and finance- which considers instability or decline of performance solely as a negative phenomenon. Further studies might also pay attention to the effects of instability and decline in other indicators of performance, like the effects of decline in the satisfaction of the employees.

6.3. Implication for managers

The findings also have important implications to managerial practice. First of all, marketing managers can use variability to better predict the attitude of their consumers and how the experts view their products. The analysis results in Chapter 3 on the determinants of evaluations demonstrate how the lack of consensus within consumer or expert communities can significantly weaken the effect of their past evaluation on the evaluation of the next edition. Chapter 2 illustrates how variability can weaken the effect of consumer evaluations and expert evaluations of past editions on sales. This implies that products with mediocre or low review scores can perform better when the variability of the reviews is high. However, managers with more positive review should be more cautious when they observe variability in their product evaluations as the link of past evaluation to sequel evaluation and sales are weakened. Market analysts, consultancy companies, and even investors can use this model to estimate future market conditions. They can use it to predict the performance of product extensions and assess whether they should invest (or advise their clients to invest) in such ventures.

The study on explorative behavior (Chapter 4) is also beneficial for managers in predicting competitors' strategies. The model herein is based on performance data that is easily adopted in various industrial settings and is most of the time easily accessible by any organization. When managers can better predict the actions of their competitors, they will also be able to design strategies to counter such actions. Market analysts can use the model to predict the popularity of a particular market segment in the future and assess whether an entry or an exit from the segment by a specific organization is likely to occur. Likewise, investors can also use this model to identify popular segments which might lead to higher investment costs and better structure their investment portfolio.

The last study (Chapter 5) is especially important for managerial practice during the NPD process. It is understandable that a loss of influence might be an uncomfortable situation for the losing party. However, if one looks at NPD as a collaborative process, changes of influence can lead the organization to better performance. These findings encourage management policy that supports rotating leadership structure in organizations. Although it is important to note that the collaborators should maintain a high level of trust and cooperation during the process.

6.4. Limitations and future research

Already a number of limitations and suggestions for future research have been made in the discussion of the main themes. This final section briefly indicates other of areas of future research based on the results, where this researcher hopes to contribute in the near future. First of all, evaluation scores are used in the analysis instead of the evaluation texts. The evaluation texts might likely possess richer information such as the choice of words, emotions, and more subtle messages, among other things, that may not be observed by merely looking at the score. Collaborative studies that combine knowledge from linguistic and business study might be a venue for future research. Linguistic are useful to measure and transform the evaluation texts into a quantified format.

Second, this research is limited to predicting behavior and attitude of consumers and experts towards sequels. Instead of predicting behavior and attitude across editions, a future study that links evaluations of one product across time might also yield useful insight. This research can test how sentiment towards a product can be transferred across evaluators from the same group and also influence the evaluation of other group. The research can also be a combination of the models provided in Chapter 2 and Chapter 3 that forms an integrated model that is able to observe how evaluation scores evolve across time, affecting performance, and how the performance would then affect future evaluations. Such research might also adopt the approach to look at the evaluation texts rather than scores to better see how consumer and expert attitude evolve across time, and how ideas about the product are spread among consumers and experts.

Third, when discussing the theoretical implications, it is mentioned that the studies in this thesis only look at the effects of supposed interaction between individual consumers and experts, while the interactions remain in a “black box.” This decision is defended by arguing that such an approach would be very difficult to manage as it would involve the necessity of direct observation of the behavior and attitude of each consumer and expert and follow them across time. Future research can look deeper into how the carryover mechanism actually occurs in the communities of consumers and experts. In light of the popularity of blogs, tweets, and the proliferation of sharing personal activities online, it could be much easier to observe individual attitudes and behavior. Future research would benefit from web crawling techniques and data mining procedures to construct and analyze large- scale databases about consumers and experts linked to product performance.

Fourth, the gap between Chapter 4 and Chapter 5 manifests the lack of an integrated model that tests how changes of performance affect strategy, and how the changes of strategy would in turn change performance. So far these changes are tested in separate studies here because the industrial settings in these two studies are different. It is recommended that a future study that be focused on developing an integrated model that directly links and tests the two phenomena. One example of a research idea is a study on the effect of consumer reviews to organization strategy to release free and premium product upgrades. This research could explore if negative reviews can force organizational strategy to release free contents to recover unsatisfied consumers, while positive reviews signal a satisfied market that can be exploited even more through premium product upgrades. The same research could also explore how these free and premium upgrades influence subsequent reviews. Such research would fit into the service recovery literature or product innovation literature.

Finally, as a byproduct of search for data on computer games, the team collected a database of video games producers, employees, sales, and evaluations in the form of scores and texts. There are enormous possibilities for using these large datasets for business studies. For example, one can explore the effect of performance in terms of product sales and evaluations to the career of individual programmers, designers, and managers. The movement of employees could be tracked across different video game development projects, observing the effect of their movement and the network between the performances of those projects. An analysis of how the networks of collaborations between developers affect their individual performance, the type of product they make, and their strategy in targeting market segments is another among the many possibilities that lie ahead. This study demonstrates one step in this variation universe of possibilities.