

# The Lean Start-up Approach versus Scrum

## A case study of German startup StudentCouch

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The traditional approach to new product development (NPD) had been to make a set of assumptions about what the customer would perceive to be valuable and develop a product from start to finish based on these assumptions. With this approach however, the risk of not meeting customers requirements is quite high because new products are made on speculations. Thus, it has been recognized that customer feedback is crucial in NPD for minimizing this risk. However, even though customer feedback is available, startup firms differ on strategic decision-making processes in the management of innovation. Therefore this research extends this debate by incorporating the decision-making process as a relevant factor for successful NPD. A broad categorization of decision-making processes by types is made by relating them to Mintzberg's (1985) well-known *deliberate* and *emergent* strategic processes. Using the result of a case study at StudentCouch GbR, this paper outlines the benefits associated with incorporating the decision making process from a more practical perspective. Furthermore, besides providing a large amount of theoretical concepts with practical confirmation, this research also presents several new and unexpected findings. The findings of this research indicate that leadership, trust, and open communication are, among other factors, confirmed as essential factors for the success in NPD. Furthermore this study highlights that company culture and personal traits may also be important factors that must be considered as well.

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### **Keywords**

New Product Development, decision making process, success factors of new product development, Lean Startup Approach (BML-Loop), Scrum

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# 1. INTRODUCTION

New product development (NPD) is a topic that has received growing attention from researchers and practitioners over the past decades (Ernst, 2002). NPD is a "process, by which an organization uses its resources and capabilities to create a new product or improve an existing one" (Cooper, 2003, p.117). The traditional approach to NPD had been to make a set of assumptions about what the customer would perceive to be valuable and develop a product from start to finish based on these assumptions. With this approach however, the risk of not meeting customers' requirements and subsequent failure of the venture due to a premature exhaustion of funds is quite high. According to Blank (2013) 75 percent of startups fail because they do not implement the customers' requirements into the NPD. Given this backdrop, there has been a shift in recognizing that customer feedback is crucial in NPD for minimizing this risk. An issue that has been addressed however, points to the fact that startup firms operate in a high-velocity environment, in which "changes in demand, competition, and technology are so rapid and discontinuous that information is often inaccurate, unavailable, or obsolete" (Judge & Miller, 1991, p.451), which leads to difficulties in managing product innovation (Thamhain, 1991).

Other authors take an opposing view, with Flint (2002) pointing out that many firms do not even know what kinds of information they should collect, and even when they do know they do not have the skills and/or formal processes in place to capture customer information. Firms are therefore not just lacking the knowledge about customer feedback, but are also lacking the skill of using it, which puts them into a position where they are not well organized to build products or services in the voice of the customer (Cooper, 1999).

Another common problem inherent in the high-velocity context of NPD is that firms are too focused on accelerating the transition speed from idea generation and screening to the development phases of NPD, which can lead to ideas that are not well-founded in customer understanding and the development of products that the market does not require (Flint, 2002). Therefore the major challenge for a start-up firm is how to govern business ideas, customer feedback, and the interactions between these two in the NPD process, as well as in the overall firm strategy in order to succeed in their business venture.

This research extends this debate by incorporating the decision-making process as a relevant factor for successful NPD. The reasoning behind this is that startup firms differ on strategic decision-making processes in the management of innovation. (Conway & Steward, 2009). A broad categorization of decision making processes by types is made by relating them to Mintzberg's (1985) well-known *deliberate* and *emergent* strategic processes, which conceptualizes the so-called "deliberate decision making process" on the one hand, and the "emergent decision making process" on the other hand.

The deliberate decision making process is characterized by reflection and evaluation of advantages and disadvantages; this is done to help filter out less promising options and to execute only the most promising ones through detailed planning, clear articulation, and rigid controls.

The emergent decision making process however, sets only the initial business idea as a starting point, from which incremental immediate changes are made based on the feedback that is provided from the external environment- the customer. It is an adaptive and speedy process, which can be characterized as 'learn-as-you-go'. Therefore the product is being developed in

small steps to match the value-requirements of customers and achieve successful NPD.

Hence, the goal of this research is to find out which decision-making process is perceived as adequate in a high-velocity environment and what affect it has on the success of NPD. This research is a case study about a tech start-up firm that applies both decision-making processes, as conceptualized in Figure 1. Two tools are utilized for the purpose of implementing customer feedback, which correspond to each decision-making process. For the emergent decision-making the *Lean Startup* approach with its' Build-Measure-Learn Loop (BML-Loop) is used; for the deliberate decision making the *Scrum* tool is used.

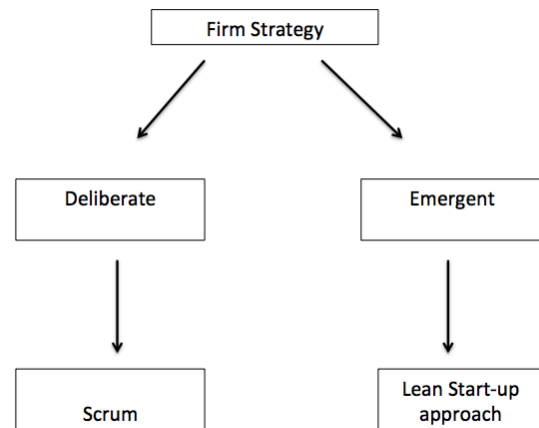


Figure1. Conceptual Framework

To measure how successful each process is in terms of implementing customer feedback in NPD, in-depth interviews are conducted with the founders of the firm to observe their experiences.

These observations are then systematically compared and evaluated against a set of performance measures called *NPD success factors* in order to examine which process is more beneficial. The number of NPD success factors is increasing and their characteristics are manifold (Thamhain, 1991; Cooper, 1999), which clearly portrays the growing importance of this topic. The success factors utilized in this research are adopted from Thamhain (1991) and can be categorized into the following three sections: (i) Task related factors, for example clear objectives or proper technical direction and leadership, (ii) people related factors, e.g. good communication, and (iii) organizational related factors e.g. setting stable goals and priorities. Furthermore, achieving these success factors is of particular significance to startup firms due to the fact that in this context they represent means for increasing productivity, competitive advantage and innovation (Cooper, 1991).

Not only is the adoption of Mintzberg's (1985) categorization of deliberate and emergent strategies to different decision making processes a novel approach, but the extant literature- to the best of my knowledge- is also still lacking practical evidence on the moderating role of decision-making processes on the success factors of NPD. This case study therefore aims to create new insights into this topic and it is expected that certain actions foster the process of customer feedback implementation and thus facilitate NPD better than others.

In light of the discussion above, the research question this paper attempts to answer is:

***“To what extent do different decision making processes impact the task-, people- and organizational-related success of new product development?”***

In order to be able to answer this question the following sub-questions will be addressed and investigated:

1. How successful is (the product development management tool) Scrum as a deliberate decision making process in implementing customer feedback in new product development?
2. How successful is (the product development tool) Lean Startup and its' BML-Loop as an emergent decision making process in implementing customer feedback in new product development?

The remainder of this paper is structured as follows: Section 2 provides a review of the literature on the success factors of NPD, outlines the theory behind the deliberate and emergent decision making processes, and then links these to the Lean Startup Approach (BML-Loop) and Scrum tools respectively; the conceptual framework guiding this research and the hypotheses as derived from extant literature are presented. In section 3 the methodology for this case study is outlined. Section 4 presents the findings and results. Section 5 discusses the knowledge gained and the implications thereof. Section 6 addresses the limitations of the findings, provides directions for further research, and concludes.

## **2. LITERATURE REVIEW**

### **2.1 The deliberate decision making process**

In this section the attributes, advantages and disadvantages of the deliberate decision making process in the NPD are outlined. Managers who make use of a deliberate decision making process can be characterized by the following attributes: dependent, avoidant, rule-based, rational, systematic, introvert and internal (Gudonavicius & Fayomi, 2014). The deliberate decision-making process can be described as “slow, controlled, requiring effort, rule-governed, and formal” (Kahneman, 2003, p.22; Maritz, Pretorius, & Plant, 2011). This process is thoroughly planned and a considerable amount of time is spent identifying the problem in an exhaustive analysis and evaluation of alternatives (Bazerman, 1986; Verreyne & Myer, 2010; Charles, Ojera, & David, 2015). The advantage of using this type of process is that the developing team can monitor each step and thus, problems are more likely to be identified in earlier stages (Maritz, Pretorius, & Plant, 2011). Previous research into the success of small innovating firms has shown that success appears to be positively correlated with greater sophistication in strategic planning and is associated with both technical and market development processes and the presence of a formal and systematic strategic system of new product development (Mazzarol & Reboud, 2006).

In summary, a company that is using a deliberate decision-making process will have the benefit of being more likely to identify mistakes and problems that can be eliminated or solved by the development team through the multiple steps that are inherent in this process; this is likely to lead to superior product quality, which can be the core of creating competitive advantage.

Despite the advantages of close monitoring and thought-out strategic planning in deliberate decision making processes, they also have disadvantages that many startup companies are facing with regards to the speed of launching the product.

Many start-up companies fail to take advantage of the short period of time, in which the window of opportunity to the market is open (Carter et al., 1996) because they face a delay in projects as more time is invested into implementing the product. As a result, the company may lose the customers' interest (Schneider, 2007). Additionally, in a fast and dynamic industry the results can become outdated very quickly as new inventions and technologies are continuously entering the market. For this reason getting fast customer feedback is essential during the early phases of NPD for capturing the customer requirements well (Schneider, 2007). Startup companies that do not act on these customer insights during this phase are likely to face problems in introducing the product at later stages- the more time passes the higher the chance that it will be behind the curve. In other words, a company should not hesitate to take the next step to upgrade and/or improve its' service or product (Anthony, 2012). Similarly, Ries (2011) states that a company may miss the chance of getting the feedback that it needs due to a delayed product launch and therefore the need of the customer may not be satisfied.

To sum up, the main disadvantages of the deliberate decision making process are that the company may lose a potential competitive advantage if it does not react fast enough when a new opportunity arises. By taking too much time the company's product can be outdated and thus, the company has a high chance of losing the customers' interest.

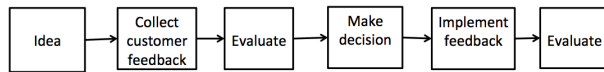
#### ***2.1.1 Defining Scrum***

Scrum is defined as an iterative and incremental framework, which is used by development teams for agile implementation of software or web design (Moe, Aurum, & Dyba, 2012). The teams are divided into different cross-functional areas, such as software engineers, programmers, and testers who work together in the product development process. In addition there is a Scrum master who coordinates the development teams and sets specific tasks. These tasks are listed on a shared document called 'product backlog', which includes features, functions, bug fixes and technology updates. The next step called 'sprint backlog' is actually a check-up plan, in which all the tasks of a sprint have to be implemented. All sprints start with planning, followed by performing tasks and end with a review (Moe, Aurum, & Dyba, 2012). Usually this takes 30 days. In order to monitor as well as discuss the process or the next steps of the product implementation, a 'daily scrum meeting' is held. In this meeting all team members from different business departments are coming together to exchange information and knowledge in order for the team to be informed about all further steps as well as to enable decisions to be made fast in case problems arise. This meeting is held every 24 hours and is only a few minutes long. The main purpose of these daily meetings is that the team can coordinate and make decisions on a daily basis (Moe, Aurum, & Dyba, 2012). The 'working increment' of the software or web design is the final step, in which the final product is implemented (Vetterli, 2013). Scrum is compared to the Lean Startup approach by comparing how effectively feedback is being utilized. In scrum the process is much slower, since the product team is discussing each step in detail rather than applying the feedback without any further discussions and evaluations. In other words, customer feedback is ranked by its importance. By using scrum the product team is able to disassemble the end product into smaller steps and moreover, all the problems that occur during the implementation can be fixed immediately (Vetterli, 2013).

### 2.1.2 The Link between the deliberate decision making process and Scrum

After having outlined the deliberate decision making process and Scrum above, the next step is linking this type of decision-making process with Scrum as a management tool.

#### SCRUM



**Figure 2. Customer feedback implementation according to Scrum**

A deliberate decision making process is described as being controlled, planned, rational and rule-governed (Mintzberg, 1985). Additionally, more steps are involved before making a decision (Bazerman, 1986; Verreynne & Meyer, 2010; Charles, Ojera, & David, 2015). Using Scrum as a tool for slow feedback loops is having the same attributes. Scrum is an iterative and incremental framework (Vetterli, 2013) as outlined in Figure 2. Many steps are involved in this framework in order to implement the product/software. Each step will be monitored in order to find the best solution if a problem occurs (Kahneman, 2003; Maritz, Pretorius, & Plant, 2011). Moreover, Scrum has analytical tools such as the backlog where team members can list their tasks. The tasks are ranked on different criteria, e.g. on duration time for each task (Vetterli, 2013), therefore this approach is more suitable for a team that prefers to work systematically. Another function of scrum is the ‘daily meeting’, which requires team members to meet up every day to discuss their next steps (Vetterli, 2013). In this case, the company has more time to discuss every piece of feedback and problem in order to find the right solution. Therefore, this type of management tool seems to be a good fit for a deliberate decision making process.

## 2.2 The emergent decision making process

Similar to the deliberate decision making process, the emergent decision making process has its’ advantages and disadvantages and therefore, this section places some emphasis on these aspects.

Attributes related to the emergent decision-making process are: heuristic, spontaneous, explicit, external, fast, anxious, adaptive, brooding, intuitive (Gudonavicius & Fayomi, 2014). This process requires the people involved to be highly active and try out new things repeatedly in order to learn from the outcomes (Covin et al., 2001). This decision-making process can be referred to as a trial-and error type of approach (Maritz, Pretorius, & Plant, 2011). In other words, it is crucial to learn from the incremental evaluations, which will help guide the product development further as you go. Following an emergent process will translate learning into experience and expertise over the long run. In order to make these type of decisions the company should have a decentralized structure, where team members can react and adjust faster to dynamic changes in the environment without the awareness or approval of top management. (Maritz, Pretorius, & Plant, 2011). Moreover, timing is crucial in this emergent process. Many opportunities are appearing for a short period of time only, and therefore it is crucial for the firm to be able to exploit them before they vanish again (Kirzner, 1973). When uncertainty is high and crucial information is not available, then using an emergent decision making process may be the best option (Covin et al., 2001).

Thus, not having to make uncomfortable decisions beforehand can help the company to grow in the future. In addition, according to Stalk (1988, p.42), the key source to have competitive advantage during the new product development stage is “time-in production”; strictly speaking companies should focus on reducing the planning loop, which allows for costs and productivity to be managed. Startup companies should therefore speed up their decision making process in order to adjust to the fast-changing environment. Therefore an emergent decision making process can be related to adaptive strategy-making, which is defined as “active engagement of external stakeholders in decisions regarding the direction and strategies of the firm, and adapting the strategic direction of the firm by using market feedback” (Verreynne & Meyer, 2010, p.4). To sum up, making emergent decisions in uncertain situations can help the company to grow by taking advantage of new opportunities.

However, fast and agile development processes are mainly focusing on answering the question of how to build the product as fast as possible, but do not take into consideration the question of what product (features) to implement. Therefore, the problem is not understood perfectly and consequently the solution of the problem is not understood either (Bosch, Holmström Olsson, Björk, Ljungblad, 2013). By making decisions in an emergent way or using an agile process without rethinking what really to produce can lead to not finding the right solution to the problem at hand. So according to Ries (2011), the company should mainly focus on delivering customer value in order to minimize the risk of being only solution-oriented. In other words the company should work closely with its stakeholders, e.g. customers, and improve the product jointly. But using an agile process could also have a negative impact on the product itself as it merely offers a minimum viable product, on which new ideas from customer feedback are tested. This could have a negative impact on the quality of the product as the company is placing more emphasis on speed rather than on quality. Ries (2011) however, clarifies that speed is crucial for startups. But focusing on speed rather than quality would be destructive due to the fact that quality problems will slow down the process of the company in later stages. Correspondingly, having defects will require for the product to be worked on again and additionally, customers may start to complain and in the worst case even stop buying the product altogether. Similarly, Kortman (2012) points out that speeding up the process in order to make a fast entry into the market without considering other aspects leads to companies selling essentially nothing more than the minimum viable product without really developing the product. Launching a product too early can have a negative effect on the customer because the customer has to deal with the initial problems and/or defects that the company had not taken into account during the production phase (Kortman, 2012). According to Perlow (1991) a company that is focusing on speed will likely face time pressure, which aggravates the task performance and results in poorer product quality. Other authors such as Simon (1957) also show that time pressure will result in an imperfect decision making process due to the fact that the team or the manager has less time to gather all the necessary information and knowledge required to make the right decision for a problem. Under such circumstances the team creates a product that is merely ‘good enough’ since necessary resources are missing. Similar to Simon, Anthony (2012) however points out that a ‘good enough’ result, leading to a minimum viable product is one of the ways in which the innovation journey is started since the company is learning to adapt fast to the marketplace. On the other hand, it is more difficult to build a competitive business as customers might try the product once, but may switch to other

substitutes because the product is only adequate and not perfect (Anthony, 2012). To sum up, the disadvantages of making decisions in an emergent process are that it may lead to poorer quality, a higher number of defects, and to customer complains. So a company that wants to be fast has to keep in mind that being fast can lead to have products with errors (Ries, 2011).

### 2.2.1 Defining the Lean Startup Approach (BML-Loop)

The Lean Startup approach is based on Toyota's Lean principles of Lean Manufacturing and Steve Blank's customer development process. It focuses on a set of guidelines to build a startup in an agile and iterative way, which involves fast decision-making, hypotheses validation, and customer feedback.



**Figure 3. Customer feedback implementation according to the Lean Startup Approach**

Lean Startup favors small steps, incremental innovation and continuous improvements (Ries, 2011). The core method to work with customer feedback is the 'Build-Measure-Learn' (BML) loop, which is described as the concept of validated learning. The first step is to "build" a minimum viable product (MVP), which is a low quality, early prototype. The reasoning behind this is to create a product with minimum amount of effort in order to save time and money while testing the business hypothesis. In other words, build a simple version of your initial business idea and bring this prototype to the market and gather customer feedback as soon as possible. For each piece of feedback the firm has to run regular experiments that allow the firm to check if each element of their vision is accepted, as depicted in Figure 3 above. Compared to traditional product development, which usually involves rule-based guidelines to produce a product, the lean start-up method is a fast and experimental way to implement customer feedback into the NPD.

To find out whether or not customers actually use the product or service, entrepreneurs can validate and learn their assumptions by testing the so-called value- and growth hypotheses, which constitute the Measure part in the BML loop (Ries, 2011). The value hypothesis simply tests if the product or service really delivers value to customers once they are using it. One strong indicator of feedback is the retention rate of users, which shows the amount of time and attention, as well as the frequency with which the product or service is being used. As the expression indicates, the growth hypothesis measures the growth potential of the MVP. In particular, it indicates the growth of new customers from early adopters to mass adoption.

In the last step of the BML-Loop, Learn, the final decision with respect to customer feedback is made. If the customers show support for the MVP, then the company will carry on with further improvements and thus 'preserve' this particular feature; but if the MVP proves to be not valuable to the customers and there is no demand for the product or service, then the company has to change its strategy in order to fulfill its vision and has to 'pivot' away into other directions (Ries, 2011, p.120-121).

This whole process can be seen as a fast experiment, which enables the startup company to test their initial hypothesis, as well as subsequent hypotheses arising from customer feedback immediately in order to find out which parts of the product are

accepted or rejected. By doing so it prevents the risks of over-planning (Nasab, Bioki, & Zare, 2012) and potentially spending years on perfecting the product or service.

### 2.2.2 The Link between the emergent decision making process and the Lean Start-up Approach (BML-Loop)

Given that the emergent decision-making process requires the people involved to try out new things repeatedly in order to learn (Covin et al., 2001), it is crucial to do so from incremental ad hoc evaluations as you go, which ultimately can lead to gaining experience and expertise in the long run. Furthermore this decision making process can be referred to as adaptive strategy making, which requires the company to work with the customers closely in the NPD (Verreynne & Meyer, 2010). Similarly, the core method in the Lean Startup approach is the experimental learning-based 'Build-Measure-Learn (BML) Loop', through which the initial business idea is tested; this can be seen as the starting point of an emergent process, to which incremental changes are made as customer feedback is tested one by one for its potential added value. The learning comes from the outcome of each incremental evaluation, so therefore the Lean Startup Method is seen to be a good product development tool, matching the characteristics of the emergent decision making process.

## 2.3 Defining success factors of NPD

As mentioned above, success factors of NPDs are crucial to startup firms since they represent means for increasing productivity, competitive advantage and innovation (Cooper, 1991). Therefore, this section is defining success factors for NPD. Thamhain (1991) distinguishes between success factors and creates the following three categorizations for them: task related factors, people related factors, and organizational related factors. Moreover, these success factors can also be drivers or barriers to innovation (Thamhain, 1991). In this case innovation performance is measured by the number of ideas, the extent to which goals are met, and commitment and change orientation. Innovation is highly probable if a firm is performing well on these success factors since it will generate more ideas, achieve its goals and increase commitment.

The task related factors are: setting clear objectives and plans, autonomy and challenge, experienced personnel, technology direction and leadership, project involvement and visibility (Thamhain, 1991).

Leadership can be seen as one of the key success factors since leadership that is empowering employees has an impact on the team creativity due to the fact that employees are more motivated and have more autonomy (Hon & Chan, 2013). Moreover, empowering leaders serve as a role model to their employees by delivering specific values, which will strengthen their personal commitment to their work (Hon & Chan, 2013). Additionally, leaders are setting clear objectives and plans so that other team members can coordinate their work.

The decision of whether leadership is required or not depends on the interdependence of the work task. Leadership is not needed for work tasks that are independent since these tasks are clear and little interaction exists. However, if works tasks are unclear and complex and a higher degree of interaction is required, then leadership is needed (Hon & Chan, 2013).

Based on this discussion the expectations regarding the task-related success of NPD are the following:

*Hypothesis 1: An emergent decision-making process will have a negative impact on the task related success factors of NPD.*

*Hypothesis 2: Leadership in the Lean startup approach (BML-Loop) will have a positive impact on the NPD performance since the work task is highly interdependent.*

*Hypothesis 3: An emergent decision making process will lead to a higher number of new ideas being implemented.*

The people related success factors of NPD are mutual trust, team spirit, personal work satisfaction, good communication, low conflict and low threat/fail-safe (Thamhain, 1991). Mutual trust as well as good communication has an impact on the innovative performance of a company (Thamhain, 1991). Furthermore, good communication within the team will also lead to better team spirit and team work since there is higher information- and resources exchange, which has a greater effect on the teams' creative efficacy (Hon & Chan, 2013). Therefore this paper posits the following with regard to people related factors:

*Hypothesis 4: A deliberate decision making process will lead to better performance in people related success factors of NPD.*

Organizational related factors are organizational stability, sufficient resources, management involvement, recognition and rewards, priorities and stable goals (Thamhain, 1990). Involving key personnel at all organizational levels leads to better project planning as well as a better understanding of the task requirements. Moreover, management involvement helps to unify the team and thus, commitment is higher (Thamhain, 1990). Cooper (2007) shows that organizational related factors are also taking into account how a team is organized as well as the internal/external relations of a team. In other words, factors such as team size, team diversity, team process, and contextual influences (e.g. reward system, organizational culture) have an impact on how innovative/ creative a company is (Anderson, Potocnik and Zhou, 2014). Therefore according to the previous findings in the literature, a company with said characteristics is expected to be more successful NPD. However, for a small startup company it is highly unlikely that these factors will be present. Therefore with respect to organizational related factors the following is expected for this case study:

*Hypothesis 5: A deliberate decision making process will not lead to better performance in organizational related success factors of NPD in a start-up firm.*

Due to the fact that (especially in the early phases of) a start-up firm the number of people actively involved in the operational side of the business is quite low, these people usually tend to take on multiple roles and business functions. As no clear way of how to work together has been established this has to be learnt as they go through the different phases and projects for NPD. Therefore the expectation for a start-up company with regards to organizational related success factors is:

*Hypothesis 6: An emergent decision making process will lead to better performance in organizational related success factors of NPD in a start-up firm.*

### **3. METHODOLOGY**

#### **3.1 Company Introduction**

The case study of this research was conducted with the startup company named Studentcouch GbR, which is located in Berlin, Germany. Studentcouch is an online platform that attempts to meet the needs of students' online study behavior. The

company was founded in February 2015 and is currently run by its two founders and supported by a Business Angel.

There are multiple organizational and strategic considerations that need to be addressed when outlining Studentcouch's online platform development activities.

First, Studentcouch built only a minimum viable product with one function, which is a sign-up account to join the platform, where students can share and discuss course relevant information, summaries and former exams.

Since, mid-April 2015 Studentcouch has started developing other functions, with the aim of incorporating all necessary online features that students use currently into the online platform; the company currently is still in this transition phase.

The four main features it aspires to have are:

- (1) Students can join courses to share and discuss course relevant information, summaries and former exams;
- (2) Students have an account on Studentcouch and can communicate with fellow students;
- (3) Communication and exchange can be limited to a set of people by group creation;
- (4) Through real-time editing, documents can be created by multiple members.

These four features are to be embedded in the platform to create an online study environment. The revenue model the firm uses joins into the current corporate 'head-hunter' trend to find the best talents. Companies are willing to pay for those talents and Studentcouch has the information about students' statuses and their courses. This information can be used for individual human resource placement services. The main challenge for Studentcouch is to acquire the first users. Since it is a social network, it is dependent on user-generated content. Although Google, Facebook, Whatsapp, StudyDrive and Dropbox are not perfect substitutes for the features offered by Studentcouch, they are still its main competitors.

#### **3.2 Case Study (Experiment)**

To understand the case study this section will give a short description about the firm and how they used these tools. The startup firm Studentcouch had released its online platform on the March 25<sup>th</sup>, 2015. The platform was introduced to students of the University of Twente in Enschede, in the Netherlands. The students were asked to use this platform and give their opinion in terms of feedback for improvement. When the firm received the feedback the firm applied the feedback according to the lean startup method. Therefore the feedback was implemented by making the use of BML-Loop. Each feedback was implemented right away, without investing time in planning and analyzing the requirements. This approach was done for one week. Afterwards the company switched to Scrum. Here the main guidelines were to analyze the customer feedback first, then prioritize which feedback to implement. This tool was used for two weeks in order to plan their steps adequately. The purpose of using these two tools was to find out which tool is more appropriate to work with customer feedback in their context. In particular, it will be examined in this case study whether the companies rather perceive the tools as an opportunity or as a threat to their current business model.

#### **3.3 Respondent Characteristics**

For this case study interviews with both founders of Studentcouch were conducted. The founders of Studentcouch each represent a different educational background with Respondent 1 providing a view from an International Business Administration (IBA) student perspective, and Respondent 2

from the perspective of a software engineer. Furthermore, it has to be stated that both founders are childhood friends, who launched their business idea directly after finishing their studies at University; hence they had no prior work experience or experience in launching a new business venture.

### 3.4 Questionnaire Design & Interview Procedures

This research makes use of an informal conversational interview, in which questions are asked in a natural interaction (Belk, Fischer & Kozinets, 2013). It's a different type of data collection compared to a structured or standardized interview, in which the respondent is asked questions with fixed response categories. Most of the questions asked will flow from the immediate context. Informal conversational interviews are useful for an investigation when exploring interesting topics and are typical for 'ongoing' participant observation fieldwork. The advantage of this type of interview as a conversation is that the interviewer can get in-depth information from the interviewees, which allows for emotions and feelings to be observed. Furthermore the data collected in this fashion is of presumed high validity as the respondent is allowed to speak in detail and in depth, which can give better insights into the true meanings or motivations. For this purpose this type of interview involves asking respondents open-ended questions and probing whenever necessary to obtain data considered useful by the researcher. In other words, by using probes the interview will be guided to find out which tool was perceived as sufficient in terms of the success factors of NPD. For this qualitative, exploratory case study, two protocol interviews were developed, to allow for convenient comparison of results between the respondents. The purpose of these protocol interviews is to understand how software start-ups typically work in the early stages, what challenges they face, and if any best practices could be observed. The answers from the interviewees are summarized in section 4. The detailed answers were recorded in audio files, which were then transcribed, and subsequently summarized and analyzed with respect to the underlying theory. The interviews with the Studentcouch founders were conducted on-site at the firm's office in Berlin. Both interviews were conducted in English. The entire interview protocol can be found in the Appendix (named Interview1 and Interview2).

## 4. RESULTS

### 4.1 Respondent 1

#### 4.1.1 Lean Startup Approach (BML-Loop)

According to the experiences of Respondent 1, the Lean Startup approach with its BML-Loop helped the company to get their initial business idea (MVP) into the market faster. Within four days 180 students opened a new account just after having introduced the product for the first time. After having received the first round of feedback from students the firm just followed the BML-Loop by implementing each feedback step-by-step, without setting any predetermined plans or objectives, which led to frustration within the team. This is the case because the Lean Startup approach suggests that companies should implement each feedback as it is given. Consequently, the company could not fulfill all the customer requirements successfully due to the fact that most of the requirements were related to design improvements and new features and functions, and the firm did not prioritize the tasks since they had to be fast. However the firm created new MVPs (features) in order to find out what the customers really want, however since the MVPs

had many defects, the number of users decreased during this process. Therefore overall customer satisfaction was low.

One of the main problems that occurred was that Respondent 1 has no expertise in programming and thus, Respondent 2 had to perform the main tasks (by) himself. As a result Respondent 2 failed to implement all the feedback properly, although Respondent 2 had the skill and knowledge to do so. The reason for failing was that respondent 2 has software engineering capabilities but no expertise in how to make the platform user-friendly. Under these circumstances of low to no trust and unproven feasibility of features implementation, the landing page was inferior and the new functions were not usable. Therefore, the company received many negative comments on the functionality and the user-friendliness of the product. Using the BML-Loop showed that implementing the customer feedback very fast had a negative impact on the company's performance, since the end product had many defects and customers were therefore not satisfied with the outcome. The main reason why the BML-Loop did not work was because there were no clear plans or objectives in place for the firm to be able to measure their performance. Since both business partners did not communicate or share information with each other effectively, both partners lost trust in each other. Answers of Respondent 1 can be found in Interview 1 in the appendix.

#### 4.1.2 Scrum

According to Respondent 1's experiences the change from the BML-Loop to Scrum was not difficult. The reason for this was that she was used to working in teams and Scrum required teamwork. Moreover, following the steps of Scrum pushed her to work even closer with the other business partner. The daily meetings helped them to set targets as well as setting clear task roles. All the customer feedback was listed in a backlog document so that the team was able to keep track of each customer feedback deadline. By doing this, all team members knew their schedule and it was easier to set goals, plans and objectives. Moreover, the company was able to measure if the goals were achieved since they used deadlines for each task. By slowing down the speed and switching from the BML-Loop to Scrum the company had more time for the next release and therefore, the company was not in a hurry. As a result Respondent 1 had the ability to gain more knowledge as well as acquire new skills in programming. Moreover, the respondent indicated to have been more satisfied with her work. On the other hand, Respondent 1 helped Respondent 2 in improving her/his business skills by learning new strategies. Scrum was not only seen as a tool that prioritizes the work that needs to be done, but also as an aid for better communication and trust building within the team.

By using the BML-loop Respondent 1 was feeling like a 'fish out of water' since using this tool was more about improving the technical problems as soon as possible. In other words, Respondent 1 was not really involved in the project due to his/her lack of programming knowledge. However, when using Scrum Respondent 1 was able to learn a few basic web design skills so that these skills could be used to help Respondent 2 in resolving the tasks. Respondent 1 was therefore more involved in the project and was better able to help the company reach its goals. Nonetheless, Respondent 1 was even able to complete two upgrades for the platform with Scrum, which was not the case in BML-Loop.

To sum it up, using Scrum helped the team members to work closer together. As a consequence, trust was increased and each team member was more committed. Additionally, having more time in implementing the product was seen as more beneficial since the company was able to monitor the progress more clearly and thus, the product suffered from fewer defects.

Answers from Respondent 1 can be found in Interview 1 in the Appendix.

## 4.2 Respondent 2

### 4.2.1 Lean Startup Approach (BML-Loop)

When using the BML-Loop the respondent 2 was very enthusiastic in implementing all the customer feedback. However, since there was much customer feedback the respondent was not able to finish all the tasks and therefore, the respondent did not know how to solve this problem due to the fact that no clear plans and objectives were set. Moreover, since the BML-Loop is more about implementing the customer feedback in a fast way, Respondent 2 had to take leadership by quickly converting the tasks into MVPs. But Respondent 2 failed to do so since he was working alone on every task.

Nevertheless, the Respondent 2 was able to finish seven upgrades, however he was not able to release any new business concepts or ideas. This was due to the fact that respondent 2 was the only one who had knowledge in programming and therefore, no information or knowledge was shared. In this case, there was no trust between the two partners, since Respondent 2 did not believe that Respondent 1 could be of help in programming the product. Additionally, a few disagreements regarding the outcomes arose as Respondent 2 was satisfied with the results and the outcome of the product but Respondent 1 felt that the outcome was not good since many users were criticizing the product. Moreover, Respondent 2 believes that having a partner who is knowledgeable in programming would have been more advantageous since an exchange of information and knowledge could have taken place. Also he is convinced that the MVPs would have turned out better.

After the interview with Respondent 2 it became clear that both parties equally felt that the lack of trust, commitment, clear goals and plans were the reason for them not having been able to successfully solve and implement the tasks. Moreover, the team was not diverse enough since Respondent 2 was the only one with programming skills. Answers from Respondent 2 can be found in Interview 2 in the Appendix.

### 4.2.2 Scrum

Respondent 2 was not very pleased to switch from the BML-Loop to Scrum since Respondent 1 has no programming skills and thus, it did not make sense to Respondent 2 to have daily meetings with Respondent 1. Moreover, using Scrum was seen to be taking too much time, which could lead to losing valuable opportunities.

Although Respondent 2 already had prior experience in using Scrum, he did not agree that Scrum is helpful for Studentcoach due to the fact that the meetings were used to teach Respondent 1 basic programming skills instead of having constructive discussions on how the feedback should be best implemented from a technical perspective. Respondent 2 reckons that Scrum is only suitable for a team in which members have the same or similar professional backgrounds. However, Respondent 2 indicated that writing tasks on the backlog helped to set clearer goals and a better schedule. As a result, the performance with Scrum was seen as superior over the performance with the BML-Loop.

Additionally, Respondent 2 emphasized that having meetings and group discussions helped to prioritize the tasks. Since there was less time pressure the team was able to plan each task and each feedback was analyzed in more depth. For that reason the company was able to finish three product upgrades and three new products features as well as implement one new product concept. The customers were more satisfied since the company met their expectations. Despite some conflicts that arose while

using Scrum regarding respondents' differing ideas and understanding of the customer feedback, it also led to further discussion and analysis, which consequently resulted in a product that fulfilled customers' expectations.

To sum up, using Scrum was seen as more time-consuming than using the BML-Loop and there was an increased likelihood of conflict, but in the end the tasks, goals, objectives and plans were set and all members were actively involved in the project. Due to increased and better communication there was more commitment to the project and there was also more trust between the two members. Answers from Respondent 2 can be found in Interview 2 in the Appendix.

## 5. DISCUSSION

### 5.1 Practical application of the emergent decision making process and the BML-Loop in comparison with theory

In this section the findings from having implemented the emergent decision making process and the BML-Loop are compared to the findings in the literature. Furthermore, a step-by-step analysis of the expected findings in terms of the above stated hypotheses is conducted.

Although Ries (2012) stated that the Lean Startup approach with its BML-Loop would help a company to gain competitive advantage by making incremental improvements and innovation, this was not the case with Studentcoach. By using the BML-Loop the company was not having clear goals or plans (Interview 1). When looking at each success factor category it becomes clear that the company was not using any success factors, which in turn would lead to higher NPD performance, such as new ideas and meeting pre-set goals. No clear objectives and plans were set, not everybody was involved in the project, and there was no team leader (Interview 1; Interview 2). The reason for this was that Respondent 2 who has expertise in programming did not take on the leadership role, and instead was making intuitive decisions; therefore, no clear goals and plans were set (Interview 2). In this case the decisions were fast, spontaneous and anxious (Gudonavicus & Fayomi, 2014). To put it differently, Respondent 2 was listening to his gut feeling. Moreover, Respondent 2 had a notion about how the product should look like but was not concerned with making wrong decisions since the main idea behind the lean startup approach is to test the business hypothesis by creating a minimum viable product (Interview 2; Covin et al., 2001). However, this emergent decision making process led to disengaged customer/users due to the fact that they were not satisfied with the result (Interview 1).

The interview also clarifies that the company was mainly focusing on how to build the product fast instead of focusing on what to implement. In this case the problem was not understood perfectly (Bosch et al., 2013). Although the company was trying to focus on delivering customer value, it did not analyze all the customer feedback in depth (Interview 1, Ries, 2011). Correspondingly, the product of the company was having defects (Interview 1). The main reason why the company did not measure all the data was because communication and commitment were lacking (Interview 1; Interview 2). Respondent 2 was working alone on the implementation and without any discussions and meetings it was not possible for the data to be measured precisely, which in turn led to misunderstanding the feedback (Interview 1; Interview 2). In other words, the company was merely offering the minimum viable product (Kortman, 2012). Another aspect mentioned by Respondent 1 was that due to the time pressure they were under they were getting more and more aggravated in performing the tasks (Interview 1; Perlow, 1991; Perlow, 2002). Simon



(1957) illustrates that time pressure results in imperfect decision-making, which was clearly the case with Studentcouch. Moreover, the leader - in this case Respondent 2 - was making only 'good enough' decisions that in turn lead to only to the delivery of a minimum viable product (Anthony, 2012).

In the following part of this section the hypotheses are tested and evaluated against the collected data :

Hypothesis 1 *'An Emergent decision making process will have a negative impact on the task related success factors of NPD.'* This hypothesis can be confirmed since working under time pressure resulted in imperfect decision making. The two partners were not able to gather all the information due to the fact that they did not communicate with each other properly.

Hypothesis 2 *'Leadership in BML-Loop will have a positive impact on the NPD performance since the work task is highly interdependent.'*

This hypothesis can be confirmed as well. Hon and Chan (2013) emphasize that leaders are like role models, who set clear objectives in order to help the team coordinate their work. Moreover, since the entire new task was complex in the BML-Loop session, a leader was crucial. In other words, the work task is highly interdependent. In the case of Studentcouch, there was no leader to help the team to coordinate the work by setting clear objectives and goals and thus, the company was not able to measure success. Respondent 2 did not empower Respondent 1 and therefore, Respondent 1 was not satisfied with the other partner's personal work (Interview 1).

Hypothesis 3 *'An Emergent decision making process will lead to a higher number of new ideas.'*

No evidence can be found for this in the data from Studentcouch since no new product ideas were implemented. One of reasons for this is that the company was only selling a product without really building it (Kortman, 2012). The other

reason is that each entrepreneur who wants to bring a product into the market needs to have a core team since only one entrepreneur is not going to have expertise in each segment/field (Carmel, 1994). Studentcouch is only a team of two people and thus not all segments can be properly filled. This also shows why the organizational related success factors were not fulfilled, since the team size is too small and the team is not diverse enough (Anderson et al., 2014). Additionally, Carmel's (1994) study shows that having a core team is seen as an "asset by the individuals within the software startups" (p.505). The teams are characterized as "homogenous, highly motivated, possessing in depth experience sets" as well as having a loose organizational structure (Carmel, 1994, p.505).

To answer the sub-question *'How successful is (the product development tool) Lean Startup and its' BML-Loop as an emergent decision making process in implementing customer feedback in new product development?'* it can be stated that Studentcouch faced many problems by making emergent decisions. The product they implemented was not even up to par with the quality of the first MVP. Moreover, many customers were complaining since they were not satisfied. Studentcouch wanted to be fast but did not keep in mind that being fast can lead to have an unfinished product with errors, which was ultimately the case (Ries, 2011). Therefore, hypothesis 6 *'An emergent decision making process will lead to better performance in organizational related success factors of NPD in a start-up firm'* is rejected.

However, it has to be mentioned that by using the BML-Loop seven product upgrades were implemented, even though they all had errors (Interview 1). Table 1 shows the results of the interviews related to NPD success factors form having used the BML-Loop.

**Table 1: Identified success factors from using BML-Loop at Studentcouch and their link to theory**

NPD success factors	Element in practice (Case)	Related Theory element	Literature Review
<b>Task related success factors</b>			
Clear objectives and plans	No clear objective due to time pressure, no task roles	Time pressure has a negative influence on emergent decision-making process since not all objectives and plans are clear.	Perlow (1991); Perlow (2002); Simon (1957)
Technology direction and leadership	No leadership	No leadership in interdependent task has a negative impact on project involvement since work task is not clear.	Hon & Chan (2013)
Autonomy and challenge	High challenge and high autonomy (did not lead to positive outcomes)	Not involving all team members has an impact on the NPD performance since there is no exchange in information and knowledge.	Hon & Chan (2013), Carmel (1994)
Experienced personnel	Respondent 1 has no expertise in programming	Core team with expertise is needed in order to make fast and emergent decisions- although making emergent decisions will lead to gain further experience and expertise.	Carmel (1994), Covin et al. (2001)
Project involvement and visibility	Not every team member was involved	Every team member should be involved in order to make a fast decision	
<b>People related success factors</b>			
Personal work satisfaction	Respondent 1 was not satisfied	Using emergent decision processes and being under time pressure can have an impact on the personal work satisfaction due to the fact that there is a higher chance of not achieving goals.	Perlow (1991), Perlow (2002)
Mutual trust, team spirit	No trust involved since not all team members were included in the decision making.	Emergent decisions processes are based on external factors and thus, making fast decisions without involving the team leads to a reduction of trust.	Gudonavicus & Fayomi (2014)
Good communication	No communication	Making emergent decision in order to create competitive advantage can lead to offering only a minimum viable product.	Anthony (2012), Kortman (2012), Ries (2011)
Low conflict	No conflict	No communication will lead to less conflict since there are fewer discussions- however on the long-run this leads to more, and deeper rooted conflicts.	Leenders et al. (2003)
<b>Organizational related success factors</b>			
Involved management	Management did not get involved	Management involvement is crucial in emergent decision processes so that a company can act as fast as possible. However in the case of Studentcouch this was not the case.	Carmel (1994), Thamhain (1991), Hon & Chan (2013),
Rewards and recognition	Finished task was not recognized by all members	Since emergent decision making processes are more learning-by-doing, not all team members may appreciate that the final product is having many defects.	Hon & Chan (2013), Bosch et al. (2013), Ries (2011)
Stable goals and priorities	No stable goal or priorities were set	Stable goals and priorities are crucial for making emergent decisions since it is important to know which goal to achieve.	Bosch et al. (2013), Ries (2011)

## 5.2 Practical application of the deliberate decision making process and Scrum in comparison with theory

According to both respondents, Studentcouch was having better NPD performance by using Scrum. The main reason was that the team was making deliberate decisions instead of emergent decisions. The team set clear goals and plans, which had to be fulfilled within a specific time-frame (Interview 1; Interview 2). Moreover, tasks were better divided and both team members were involved in the project. The process was slow, controlled and rule-governed (Kahnemann, 2003) because more steps were included, which helped the team to evaluate the feedback effectively (Bazerman, 1986). According to Respondent 1, the team was able to monitor each step and thus the end product fulfilled customers' needs (Anthony, 2012, Interview 1). Since Scrum included many steps the team was able to discuss each step in depth and thus, decisions were made by gathering all the necessary data (Interview 1; Interview 2, Kortman, 2012). Moreover, Studentcouch was able to improve existing features as well as implement new products without damaging the quality of the initial product (features). Studentcouch was therefore focused on delivering value instead of being solution oriented.

Deliberate decision making allowed tasks to be divided equally and thus, Respondent 1 was satisfied with her work and more committed to her work (Interview 1). Moreover, by having daily meetings the team was able to build trust among each other (Thamhain, 1991). Respondent 2 developed a leadership skill by taking the initiative to teach Respondent 1 some basic

skills in programming, so that Respondent 1 could perform some easy programming tasks as well (Hon & Chan, 2013). All these facts can be taken as evidence to confirm hypothesis 4, which posits that 'A deliberate decision making process will lead to a better performance in people related success factors of NPD'. Since during the deliberate decision making process all success factors were present, improved NPD performance such as new ideas and commitment were achieved.

The answer to the sub-question 'How successful is (the product development management tool) Scrum as a deliberate decision making process in implementing customer feedback in new product development?' is that Scrum was more successful than the BML-Loop due to the fact that the team was not experiencing time pressure and thus, the product was implemented without having any errors (Interview 1). Moreover, the customers/ users were more satisfied with the end product, which was not the case in BML-Loop (Interview 1). Therefore Hypothesis 5 'A deliberate decision making process will not lead to better performance in organizational related success factors of NPD in a start-up firm' is rejected. Although using Scrum takes more time, it still did not lead to fewer outcomes (Interview 2). In this case, 3 products were improved, 1 new product concept and 3 new product ideas were developed, while in the BML-Loop no new product concept or product ideas was developed. Table 2 presents the results of the interviews related to NPD success factors from having used Scrum.

**Table 2: Identified success factors from using Scrum at Studentcouch and their link to theory**

NPD success factors	Element in practice (Case)	Related Theory element	Literature Review
<b>Task related success factors</b>			
Clear objectives and plans	Clear objectives and plans	No time pressure leads to clearer plans and objectives. Daily meetings help the company to set better objectives.	Perlow (1991), Perlow (2002)
Technology direction and leadership	Leadership was fulfilled	Leadership will result in better division of work tasks. Leaders are seen as a role model.	Thamhain (1991),
Autonomy and challenge	High autonomy and challenges	Making deliberate decisions will also lead to better work performance since making deliberate decisions is based on monitoring each step.	Bazerman (1986), Hon & Chan (2013), Gudonavicus & Fayomi (2014), Kahneman (2003)
Experienced personnel	Yes	Deliberate decision making process will lead to a better selection of experienced people since the company knows what type of expertise is needed for each task.	Gudonavicus & fayomi (2014), Carmel (1994)
Project involvement and visibility	All team members were involved	In order to make deliberate decisions all team members are involved in daily group meetings so that the problem can be identified.	Bazerman (1986), Maritz, Pretorius, & Plant, (2011),Kahneman (2003)
<b>People related success factors</b>			
Personal work satisfaction	All team members were satisfied with their work	Deliberate decision making will lead to higher satisfaction of personal work since each team member can measure his or her performance.	Perlow (1991), Perlow (2003)
Mutual trust, team spirit	High level of trust	Since all team members are involved in the deliberate decision making process there is a higher level of trust.	Hon & Chan (2013)
Good communication	High level of communication	Due to daily meetings there will be a higher level of communication.	Vetterli et al. (2013)
Low conflict	Higher level of conflict	More discussions and communication will lead to more conflicts since not all team members have the same way of thinking.	Anderson et al. (2014), Vetterli et al. (2013)
<b>Organizational related success factors</b>			
Involved management	Management was involved	Higher management involvement will lead to better prioritization of the company's goals.	Anderson et al. (2014)
Rewards and recognition	Finished task was appreciated by all team members	Monitoring each step will result in making better decisions, which in turn lead to better of the product outcomes (less to no defects).	Anderson et al. (2014), Anthony (2012), Kortman (2012),
Stable goals and priorities	Goals and priorities were all fulfilled	Deliberate decision-making process leads to fulfilling goals since all team members have to stick to the deadlines.	Gudonavicus & Fayomi (2014)

## 6. CONCLUSION

### 6.1 Benefits of the deliberate and emergent decision making processes: A practical perspective

Since NPD is receiving more and more attention it is even more important to know customers' needs as well as what customers

perceive as valuable. However, many companies fail to meet customers' requirements and since these companies are more solution oriented rather than customer oriented (Blank, 2013; Ries, 2011). In other words, customer feedback has an influence on NPD. Nevertheless, there are two ways of implementing this customer feedback: make use of an (i) emergent or (ii) a deliberate decision making processes.

In attempting to provide an answer to the research question 'To what extent do different decision making processes impact the task-, people- and organizational-related success of new product development?' this case study identifies all the factors that can have an impact on NPD performance. Although both processes have their advantages and disadvantages, in this case it is clear that the deliberate decision making process is more suitable for this start-up, since using the deliberate decision making process led to better NPD performance. Moreover, since start-up firms operate in a high-velocity environment, in which "changes in demand, competition, and technology are so rapid and discontinuous that information is often inaccurate, unavailable, or obsolete" (Judge & Miller, 1991, p.451), using a deliberate decision making process will still lead to a better way of gathering and using all the relevant information for implementing customer feedback (Simon, 1957). Emergent decision making processes should be used by start up companies that are in more advanced phases and already have a broader customer base as well as a core development team, which gives them access to more resources, such as expertise and experience, in order to implement customer feedback properly. Small start-up companies like Studentcouch that are relatively new in the market should use the deliberate decision making process since these start-up companies are better in estimating the outcome in order to satisfy the customer.

In other words, decision making processes have an impact on the task-, people- and organizational-related success of new product development and thus, using the right decision making process will lead to more innovation and increased NPD performance.

## 6.2 Contribution to body of knowledge

The concept of decision-making is not recent in the academic research. However, there are not many studies that link decision making processes to product management tools such as Scrum or the Lean startup method as well as to success factors in NPD. First, this study has outlined definitions, descriptions and benefits for both decision-making processes. Then, a case study with Studentcouch was conducted. From this practical point of view as well as by building on a quite extensive range of prior research in decision making processes in NPD, success factors in NPD, Scrum and Lean startup method, a small number of hypothesized additions to the existing research, have been made. Additionally, this study has supported a great number of theoretical claims with practical confirmation.

## 6.3 Recommendation to Studentcouch

The case study has proven for Studentcouch that using the wrong decision making process will have a negative impact on the success factors of their NPD and vice versa. Moreover, using the wrong decision making process will lead to customer dissatisfaction. After using the more advantageous decision making process- in this case the deliberate decision making process- Studentcouch was able to gain better outcomes such as new product ideas.

After using both decision making processes, it was indicated by the respondents that in many cases using the wrong decision making process led to a reduction of trust, commitment and communication (Interview 1). Moreover, the tasks were not divided equally and no clear objectives, goals and plans were set (Interview 1).

Nevertheless, although much academic research stated that being fast and using an emergent decision making process will lead to being able to exploit opportunities (Kirzner, 1973), this was not case with Studentcouch since being emergent did not allow them to understand customer requirements perfectly.

Moreover, other internal factors (team, size, company culture, team diversity) play a role when considering the right decision making process. In other words, if a company culture is more rooted in being rational and analytical then using a deliberate decision making process will be more suitable. In case of Studentcouch, the main problem is that the team size is small and that the team diversity is low and thus, it is more difficult to use an emergent decision making process since expertise and experience are needed for this type of decision making process (Covin et al., 2001).

Therefore, these are the main recommendations offered for Studentcouch:

1. Studentcouch has to find a person who has good leadership skills, since a leader will divide the task and help other team members to understand the goals and objectives.
2. There has to be more communication between team members since good communication leads to information and knowledge exchange.
3. The team size has to increase so that more people with different types of expertise and experience are involved in the decision making process.

As long as the team size of Studentcouch is small, using a deliberate decision making process is more suitable since having daily meetings will lead to a better identification of the problem. Although using a deliberate decision making process is more time consuming in case of Studentcouch, this will still be more beneficial due to the fact that the user number of their platform is still quite low. Therefore offering only a minimum viable product will lead to customer dissatisfaction, which in turn leads to a reduction in the number of users.

## 6.4 Limitation

The analysis of this exploratory case study is based on only two perspectives of one firm by its founders, which means that external validity is not warranted. Furthermore, the data was collected in conversational interviews is qualitative in nature, which makes it not only highly subjective, but also possibly biased (by the interviewer). Although most of the hypotheses find support from the data and an important practical finding in terms of a preferred decision making process is made, the results do not paint a complete picture and cannot be generalized. As such, it is only possible to confirm previously established theoretical results and merely provide hypotheses towards new results. Furthermore, time was one major constraint when conduct this research project. The time was limited to only ten weeks and thus, the company had less time to use each decision making process properly.

## 6.5 Future research

During the interview the research has found out that personality traits have an impact on the adaptability to use lean startup method or Scrum. The founders preferred one over the other. For instance, Respondent 1 can be characterized as a thoughtful innovator, who prefers to think ahead before taking actions instantly. On the other hand, Respondent 2 is more an action-oriented innovator, who decides to take decisions fast. Therefore it would be interesting to research how personality traits affect the performance of a new product development under each decision making process. Also it would be interesting to research how the startup will make their decisions in the future ones they grow in terms of firm size.

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