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**Lappeenranta University of Technology**

**School of Business**

**Bachelor's thesis (international marketing)**

## **Adoption of Suunto Fitness Solution**

**Among the Customers and the Group Fitness Instructors of Etelä-  
Karjalan Liikuntakeskus**

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# 1. Introduction

## 1.1. Subject and aim of the research

The main subject of this research is innovation adoption. The concept of adoption is presented from various points of view including insight from the literature of psychology and marketing. On the other hand, not all consumers are willing or able to adopt innovations in all situations. For this reason, innovation resistance is the other main subject of this research. This is how both sides of the concept of adoption are presented, meaning the reasons to adopt and the reasons not to adopt. Since adoption, or resistance, begins after an innovation has been launched, some launch insight is included as well in order to understand how the launch affects the adoption of innovations. This knowledge is then brought to the field of new fitness products and services, more specifically heart rate monitoring innovations.

The aim of this research is to find out the underlying factors that result in the adoption or rejection of an innovation in the context of a Finnish fitness club. The innovative technology chosen for this research is Suunto Fitness Solution, a heart rate based technology that was launched at the chosen fitness club at the end of March 2010. Even if the system seems interesting, genuinely good and helps group fitness instructors offer better classes, it has faced resistance among the customers of the club and not many of them have yet adopted it by the writing of this research, end of 2010. Since I am myself an instructor at the club, I have a personal interest in finding out why the customers do not seem to adopt Suunto Fitness Solution, and what could be done in order to get more adopters for the system. The chosen fitness club for this research is Etelä-Karjalan Liikuntakeskus, which is a complex of different kinds of gyms, several group fitness halls, as well as ball game fields in Huhtiniemi, Lappeenranta.

## **1.2. Research problems and focus of the research**

Since Suunto Fitness Solution has faced resistance among the customers of Etelä-Karjalan Liikuntakeskus, the most important focus of the research is to find out why the majority of the customers of Etelä-Karjalan Liikuntakeskus have not adopted Suunto Fitness Solution and what are the most important attributes that have had most impact on the resistance of the system. Hence, the most important research problem is: Why do most of the customers of Etelä-Karjalan Liikuntakeskus resist Suunto Fitness Solution? On the other hand, the group fitness instructors are another central user group for the system, and they have adopted it slightly better than the customers. Consequently, the other research problem is to find out to what extent the group fitness instructors of Etelä-Karjalan Liikuntakeskus have adopted or resisted Suunto Fitness Solution and what are the central reasons behind their adoption and resistance decisions. Since the instructors are also supposed to recommend and sell the system to the customers, another relevant research problem is to find out how the adoption and resistance decisions of the instructors have impacted the customers' decisions. Adoption and resistance being the most important research focus, this study also includes some notions on the launch process that prevailed the adoption process, and on the other hand, some suggestions on how to get more adopters for Suunto Fitness Solution in the future. Therefore, the other research problems are: How was the launch of Suunto Fitness Solution at the chosen club from the customers' and instructors' point of view, and did it have an impact on the adoption or resistance of Suunto Fitness Solution? The final research problem is to find out what should be done in order to get more adopters for Suunto Fitness Solution at the chosen club.

## **1.3. Research method**

This research is a qualitative case study in nature. A case study explores and investigates a "real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships" (Zainal, 2007). To be even more specific, this study is a single-case study that focuses on a single case only, to make a difference between this research and multiple-case studies (Yin, 2003, 5). Single-case studies aim to deeply

understand one case instead of making generalizations to a bigger context (Zainal, 2007). Hence, the focus of this research is strictly limited to one technology at one Finnish fitness club only, and the aim is to form a deep understanding of the situation in this limited context. The empirical part of the research was done by interviewing five customers who have not yet adopted Suunto Fitness Solution, as well as four group fitness instructors from Etelä-Karjalan Liikuntakeskus. The interviews were divided into two groups, customer interviews and instructor interviews, and both of the two groups were asked their own questions. The interviews were semi-structured, meaning that there was a number of questions planned in advance but those questions were sufficiently open so that there was also space for subsequent questions that were improvised during the interviews (Wengraf, 2004, 5). Therefore, all the respondents in one group were asked roughly the same questions in the same order but the interviews were very discussion-like and the respondents were given opportunities to tell their own opinions freely. Some additional questions were also asked if the respondents brought up any interesting points of view about some subject that was not included in the original questions. All of the interviews were conducted in face-to-face situations. The chosen customers are all young, female students, and demographically they form a relatively homogenous group. The chosen group fitness instructors, on the other hand, have more differences between each other. The instructor group includes instructors representing different ages and different amounts of experience as instructors. They also instruct a very large scale of different classes.

#### **1.4. Theoretical framework**

The most important theories behind this research are adoption and resistance theories, including technology acceptance model, innovation diffusion theory and several other theoretical points of view. Some launch theories are also included in the theoretical part, as well as some notions about the technology's characteristics. Based on this, the theoretical framework is divided in three main levels. First, there is the firm level. The launch theories are presented on the firm level in order to find out what kinds of launch decisions firms can make and how these decisions impact adoption. The next step is the consumer level, which is the main focus of the research. The adoption and resistance theories are mostly presented on the consumer level in order to understand the

psychology and characteristics of consumers, as well as the attributes that affect their adoption behavior. The third level is the technology level. On this level, innovation characteristics are presented and some conclusions are made about how these characteristics affect adoption or rejection. Also, the technology life cycle (TLC) model is presented in order to understand how innovative technologies usually grow in the market. The theoretical aim is to find out how the firm, the consumer and the technology interrelate and together result in the overall success or failure of an innovation in the market during its life cycle through customer adoption.

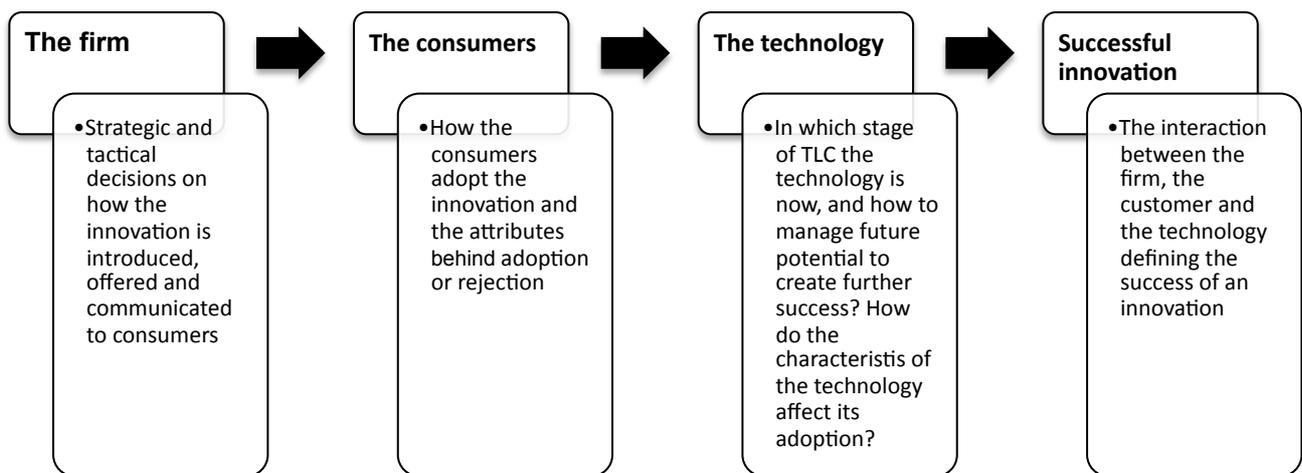


Fig. 1: Theoretical framework

### 1.5. Overview of the literature review

The literature review consists of selected books, one doctoral thesis and numerous articles that were mainly searched from the web-based databases offered by LUT library. The keywords applied were primarily combinations of innovation, adoption, technology acceptance, launch, innovation diffusion, theory of reasoned action, theory of planned behavior, and innovation resistance. The first limitation when choosing the literature for this research was to focus mostly on the individual-level articles concerning adoption theories, leaving out the numerous articles about organizational adoption. The other limitation that is connected to the first one was to focus on consumer goods and services, meaning that the articles about organizational innovations have mostly been left out. In most articles, the innovations that were researched were related to the field of IT (e.g.

Moore & Benbasat, 1991; Shin, 2009; Taylor & Todd, 1995), but the articles also contained research and examples from numerous other innovations from tofu (Ram & Sheth, 1989) to screw cap wine bottles (Garcia et al., 2007). Since very little research has been conducted about fitness- or especially heart rate monitor-related innovations, the previous research from all sorts of other innovations has been applied to this thesis. Most reviewed articles were theoretically based on technology acceptance model (TAM), the theory of reasoned action (TRA), the theory of planned behavior (TPB), diffusion of innovations (DOI), innovation resistance and their combinations. Some articles also focused on the value perspective in innovation adoption. The theoretical interests of the articles were usually intentions to use or pure usage of an innovation. This thesis takes a closer look to these theories and aims to apply them in the field of marketing a heart rate monitoring based innovation at a Finnish fitness club.

## 1.6. Definitions of the central concepts

This section includes the most central concepts used in this research in order to give a general view about the theme of the research and to avoid any conceptual misunderstandings. The concepts are more thoroughly discussed later in the thesis.

- **Innovation:** Based on Rogers (2002), an innovation is “an idea, practice, or object that is perceived as new by an individual or other unit of adoption”. This definition suggests that an innovation can be nearly anything as long as it is new to the adopter (Sintonen, 2008, 21).
- **Launch:** In this research, launch is referred to as the introduction of innovations to the market.
- **Adoption:** “A decision to make full use of an innovation as the best course of action available” (Rogers, 1983; ref. Antil, 1988), “the acceptance and continued use of a product or brand” (Robertson, 1974; ref. Antil, 1988), or “an individual’s decision to become a regular user of a product” (Kotler, 2006, 658).
- **Diffusion:** The process of commercialization, or bringing into common usage, of a new product, process or service. Diffusion of an innovation occurs through its adoption by users. (Conway & Stewart, 2009, 10)

- **Innovation resistance:** The customers' unwillingness or inability to adopt new innovations (Ram & Sheth, 1989). In other words, resistance refers to the non-adoption of innovations.
- **Perceived value:** Perceived value is set by the innovation's perceived relative benefits minus the perceived relative costs (Day & Schoemaker, 2000, 130).
- **TLC:** The technology life cycle (TLC) model is quite similar with the product life cycle (PLC) model. Both of these models present four stages of an innovation's life cycle: introduction, growth, maturity and decline, and the models are based on the trajectory of sales over the lifetime of a technology. (Conway & Steward, 2009, 128)
- **Heart rate based training:** Any physical exercise during which a person's heart rate is monitored and the exercise is modified and analyzed based on the gathered heart rate data.

## 1.7. Structure of the research

The technology in question, Suunto Fitness Solution, is first presented in detail, after which the first theoretical part of the research deals with the launch process and the strategic and tactical launch-related decisions that companies should consider when launching innovations. In other words, the "before the adoption" decisions are the focus of the first part. The second theoretical part is the most important section since the most relevant adoption and rejection theories are presented there, including technology acceptance model, innovation diffusion theory and innovation resistance theory. After all the models have been presented in detail, a synthesis is made, concluding the relevance and central theoretical contributions of each model in a wider context. After the theoretical part, there is the empirical part, which contains an analysis of the interviews, which is linked to the theoretical part's notions. The final part includes discussion, managerial implications, conclusions, contributions and limitations of this research as well as suggestions for future research.

## 2. Suunto Fitness Solution

Suunto Fitness Solution is an innovative combination of product and service elements that is specifically designed for fitness clubs and gyms. The system works with Suunto's heart rate belts after they have been registered to the system. After the registration, the system recognizes the heart rates of all belt users and they start showing on screens at the fitness club. The system can be used for both group fitness classes with its single class mode, and for individual training, for example at the gym, with its whole day mode. On the screen, the users see their own heart rates as well as the percentage of maximum heart rate while training. A special color code system has also been developed for Suunto Fitness Solution. This means that the customer's heart rate data shows in a different color depending on the percentage of heart rate based maximum performance. For example, red color means that the customer is working close to his or her maximum performance. Besides offering real-time workout data, the system automatically sends a graphic of the workout via email to the customers, so they can see the workout profile, amount of burnt calories, training effect (TE) value on a scale from one to five, length of the workout and other workout-related data at home. The system also sends an email to the instructors when used at group fitness classes. The instructor email contains the training effect of all class participants using Suunto Fitness Solution, as well as the instructor's own training graphic. (Suunto web page)

In order to use Suunto Fitness Solution, the customer needs a Suunto heart rate belt. Customers can buy the belts directly from the fitness clubs, or visit another retailer, such as sports shop, to get a belt. First, the customer needs to register at the reception of his or her fitness club to connect the belt to the local system. To enable calculating workout data, the customer needs to provide information about physical condition, such as weight and activity class. After the registration is made, the customer can start using the belt, and will get the benefits of Suunto Fitness Solution. No other heart rate monitor is needed but if the

customer wants one, the Suunto Dual Belt can be attached to both Suunto Fitness Solution and Suunto's regular heart rate monitor, enabling the customer to use Suunto Fitness Solution and a regular heart rate monitor with only one belt. (Suunto web page) At the chosen fitness club, there are four group fitness halls and several gyms. Suunto Fitness Solution is used in three group fitness halls, including the spinning hall. It is not recently used at the regular gyms. According to the price list offered from the reception, for the members of the chosen fitness club, getting the belt and registration for Suunto Fitness Solution costs 65 Euros, and using the service costs an additional 4 Euros a month. For the non-members, the price of the belt and registration is 79 Euros and the use of the system costs 8 Euros a month.

## **2.1. Business model for Suunto Fitness Solution**

In Finland, the official distributor of Suunto Fitness Solution is Euroshape that does the selling of Suunto Fitness Solution to the fitness clubs (Euroshape webpage). According to the representatives of Etelä-Karjalan Liikuntakeskus, the club has a contract with Euroshape, according to which the club pays a certain amount of money every month to Euroshape for having Suunto Fitness Solution. Besides the base package, fitness clubs are offered additional heart rate belts and team PODs, as well as additional support from installation packages to promotional packages and help desks (Suunto webpage). After the fitness club has purchased the system, it sells it individually to its own customers. When selling Suunto Fitness Solution to the customers, the fitness clubs offer the belt and the services of getting the real-time heart rate data and the summary of the workout via email. Etelä-Karjalan Liikuntakeskus also sells Suunto heart rate monitors that can be attached to the same belt with Suunto Fitness Solution. However, the regular heart rate monitor business is not included in this research.

## **3. The launch**

There is an increasing pressure on companies to offer successful new products and services, and some even say corporate profitability depends on how well this is done (Antil, 1988). The road to successful introductions is often full of failures, in some cases

resulting to substantial financial losses (Antil, 1988), and only a small fraction of all new products and services are commercially successful (Ram & Sheth, 1989). Launch, of all steps in the new product development process, requires the largest commitment in time, money, and managerial resources (Hultink et al., 1997). Launch is, indeed, the most expensive, most risky, and least well-managed part of the overall product development process (Calantone & Montoya-Weiss, 1993; Calantone & Di Benedetto, 2007). However, if thorough consideration is done before new product launches, the benefits can be numerous: reduced failure rates, increased profits, satisfied customers and fewer wasted resources (Antil 1988). Companies need to grow their revenues by developing new products (Kotler, 2006, 633), and this urge is reinforced by, for example, short product life cycles, technological change, and the increasing sophistication of buyers (Hultink et al., 1998). It seems that launching new products and services is one of the riskiest and at the same time one of the most inevitable parts of doing business.

### **3.1. Managerial decisions related to the launch**

In the new product development (NPD) process, decision-makers should ask five key questions before starting the development and later, launch. These questions are what to launch, where to launch, when to launch, why to launch and how to launch (Hultink et al., 1997, Hultink et al., 1998). These questions are not a trivial matter (Hultink et al., 1998) since they involve significant commitments of time, money and resources, and the answers basically determine the success or failure of the innovation (Hultink et al., 1997). Instead of focusing only on tactical issues, meaning the “how to launch” part of the process, such as the level, mix and allocation of marketing effort, it is important to look at the strategic parts of the process as well, meaning the “what, when, where and why to launch” questions that contain issues such as the degree of innovation and the size of production entry scale (Hultink et al., 1997). Launch consistency is also something to consider, meaning the alignment of the tactical and strategic decisions throughout the process (Hultink et al., 1997), as well as the coherency of decisions that are made earlier with decisions that are made later in the launch process (Hultink et al., 1998). The relationship between strategic and tactical decisions in the process is quite straightforward; tactical decisions are made after strategic decisions and tactical decisions are also dictated by the strategic launch decisions already made. As a conclusion, strategic and

tactical launch decisions interact to determine product development performance. (Hultink et al., 1997) An effective product launch greatly improves the chances of an innovation to succeed in the market (Calantone & Di Benedetto, 2007).

### **3.1.1. Strategic decisions**

Launch strategy is referred to as those decisions and activities necessary to introduce an innovation to its target market and begin to generate income from sales of a new product or service (Hultink et al., 1997). Strategic launch decisions deal with product and service issues, such as relative innovativeness, and market issues, such as whether to target a mass market or a niche market (Calantone & Di Benedetto, 2007). In general, strategic launch decisions need to be in line with product strategy, market strategy and firm strategy (Hultink et al., 1998). Strategic launch decisions take place, by definition, before the new product development process starts (Hultink et al., 1998), so they are finalized early in the NPD process (Calantone & Di Benedetto, 2007) and they precede marketing mix decisions or, in other words, tactical decisions in the launch process (Hultink et al., 1997). A major part of the launch decision-making occurs prior to making the marketing mix decisions, and prior to even beginning the product development process (Biggadike, 1979; ref. Hultink et al., 1997). Strategic decisions also define the boundaries of a launch program (Biggadike, 1979; Crawford, 1984; ref. Hultink et al., 1998). Once made, these decisions are hard and expensive to change later during the development process (Hultink et al., 1997).

### **3.1.2. Tactical Decisions**

The tactical launch decisions are those decisions that are made after the physical development of the product or service is complete (Hultink et al., 1997), and are influenced by the strategic decisions already made (Calantone & Di Benedetto, 2007). Decisions are traditionally classified as tactical if they are made relatively late in the project and if they could be easily or inexpensively modified during the launch process (Hultink et al., 1997). These decisions generally include the marketing mix adjustments (Hultink et al., 1997;

Calantone & Di Benedetto, 2007), and form the “how” part of the launch. Marketing mix-related decisions include product branding, sales and distribution support, and timing decisions (Calantone & Di Benedetto, 2007). These decisions are more easily modified later in the development process than the strategic ones (Hultink et al., 1997; Hultink et al., 1998). To a great extent, marketing mix tactics, which lead to a higher market entry performance, depend upon the market conditions into which the entry is made. There are some relationships between tactical decisions and new product performance. For example, new product performance is likely to be higher when relative advertising expenditures are higher, relative price is lower, and relative breadth of product assortment is broader. However, higher performance is not created by just one aspect of the marketing mix but instead, it is achieved through making appropriate decisions across multiple launch variables. (Hultink et al., 1997)

### **3.2. Technology life cycle**

The technology life cycle (TLC) model is pretty much similar with the product life cycle (PLC) model, and it is developed from the basis of diffusion and adoption theories that are presented later in this study. Both of these models generally present four stages of a life cycle, introduction, growth, maturity and decline, and the models are based on the trajectory of sales over the lifetime of a technology. The introduction phase represents the gradual adoption of a new technology, after which, in the growth stage, sales begin to accelerate. In the maturity stage, the sales reach a peak, and there is an increase and subsequent leveling off of the diffusion and adoption of the technology. In the decline phase, a technology is made outdated by the emergence of a new substituting technology. (Conway & Steward, 2009, 128-129) Slow takeoff times tend to create several kinds of problems to companies launching new innovations, such as delayed returns on investment, or even negative payback in case the product is pulled out of the market too soon before sales get the chance to take off (Garcia et al., 2007). To avoid the negative payback, companies need to consider the expected life cycle of an innovation, in order to be patient enough to wait until the innovation has reached its maximum potential.

## 4. Adoption of innovations

Innovation adoption is a concept related to the introduction process and take-up of new products, services or processes (Consoli, 2008). There are several definitions for the word in the marketing context. Rogers (1983) defines adoption as “a decision to make full use of an innovation as the best course of action available”. Robertson (1974), on the other hand, defines it as “the acceptance and continued use of a product or brand”. (ref. Antil, 1988) Based on a third definition, adoption is “an individual’s decision to become a regular user of a product” (Kotler, 2006, 658). Whatever the definition, adoption can’t be seen merely as the decision to purchase an innovation but instead, adoption occurs only when there is a behavioral, as well as psychological commitment, such as a positive attitude, to the innovation and its attributes. This commitment leads to acceptance and continued use of the innovation. Thus, adoption specifically requires continued purchase and/or use of the innovation over a period of time. (Antil, 1988) Adoption is also a gradual, emerging process (Consoli, 2008), which has been conceptualized to go through five stages, awareness, interest, evaluation, trial, and adoption (Harvey, 1979; Lim et al., 1991; Breitenbach & van Doren, 1998). User appeal and acceptance are probably the most critical factors for adoption. Without a readily apparent reason for having a technology, the market pull from potential adopters may never reach a high enough level. (Bursky, 2001) As a conclusion, based on adoption theory it seems that a company should pay special attention not only to the initial buying decision but also to creating long-term customer commitment towards an innovation.

The adoption models presented in this study are Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Diffusion of Innovations (DOI), Perceived Value perspective (PVP), and Innovation Resistance theory (IR). At the end of this part, a synthesis is made based on these theories in order to understand the theoretical base of adoption on a larger scale and to briefly present the most relevant contributions that each model has brought to this field.

#### **4.1. Technology Acceptance Model (TAM)**

The main goal of TAM is to describe the influence of users' beliefs and attitudes on their intention to use technology and, subsequently, the usage of technology itself (Teo, 2009). TAM presents that a certain behavior to adopt an innovation is created through four stages. First, a potential adopter forms two basic perceptions of an innovation, perceived ease of use and perceived usefulness (Agarwal & Prasad, 1997). Perceived ease of use refers to the degree to which a potential user views usage of a technology to be relatively free of effort (Agarwal & Prasad, 1997; Venkatesh & Davis, 2000). This is an important perception since many new products end up underused or totally abandoned when their owners find the features hard to control or use (Bursky, 2001). Perceived usefulness refers to the user's subjective probability that an innovation is likely to increase their performance (Venkatesh & Davis, 2000), as well as the extent to which a potential adopter views the innovation as offering value over alternative ways of performing the same task (Agarwal & Prasad, 1999). Perceived usefulness and perceived ease of use are subjective perceptions, meaning that each individual perceives them differently (Agarwal & Prasad, 1999). The two perceptions have been proven to be fundamental determinants of user acceptance (Agarwal & Prasad, 1997; Teo, 2009) and the reasons why customers adopt new technologies (Loraas & Wolfe, 2006), as well as determinants of the variance in attitude (Agarwal & Prasad, 1999), leading to behavioral intention to make use of that technology (Teo, 2009). The effects of external variables, such as system characteristics, development process and training, on intention to use are also mediated by perceived usefulness and perceived ease of use (Venkatesh & Davis, 2000).

Based on these perceptions or beliefs, a customer develops an attitude towards an innovation (Teo, 2009). Attitude in TAM refers to the mediating emotional response between beliefs and usage intentions, and is seen as a learned response that refers to an individual's evaluation of a concept (Agarwal & Prasad, 1999). This attitude either leads or does not lead to behavioral intention to adopt the innovation. TAM uses intentions as a dependent variable, based on the supposition that intentions to use are predictors of future usage behavior (Agarwal & Prasad, 1997). As a conclusion, only when the customer has positive perceptions of the easiness of use and usefulness of the innovation, leading to a

positive attitude towards the innovation, and a positive intention towards adopting the innovation, there is a chance that the customer adopts the innovation. The following simplification of the model presents these causalities:

*Perceptions about ease of use and usefulness → Attitudes → Intentions → Behavior*

## **4.2. Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)**

The Theory of Reasoned Action (TRA) is a general theory developed in social psychology that attempts to explain and predict individual behavior across a variety of domains (Agarwal & Prasad, 1997). It is a theory that has been developed to predict volitional behaviors and to understand their psychological determinants (Ajzen, 1985, 12). TRA is also an underlying theoretical base for TAM (Agarwal & Prasad, 1997; Venkatesh & Davis, 2000; Loraas & Wolfe, 2006; van Slyke et al., 2007). TRA is based on the assumption that people usually behave in a sensible manner (Ajzen, 1985, 12). The theory recommends that perceptions be elicited specifically for each innovation (Fishbein & Ajzen, 1975; ref. Agarwal & Prasad, 1997). Like TAM, TRA uses intentions to use as a dependent variable, based on the assumption that intentions to use are predictors of future usage behavior (Ajzen, 1985, 12; Ajzen, 1991; Agarwal & Prasad, 1997; van Slyke et al., 2007). According to TRA approach, intentions are created by two basic determinants, attitude towards a behavior as a personal factor and subjective norm as an implication of social pressure to perform a behavior (Ajzen, 1985, 12; van Slyke et al., 2007). These determinants are a part of the Theory of Planned Behavior as well. The basic idea of TRA is that generally speaking, people intend to perform a behavior when they evaluate it positively and when they believe that important others think they should perform it. (Ajzen, 1985,12)

The Theory of Planned Behavior (TPB), originally developed by Icek Ajzen in 1985 is a refined version (Sintonen, 2008, 34), or an extension (Ajzen, 1991) of TRA. It became necessary after recognizing the limitations that TRA had in dealing with behaviors over which people have incomplete volitional control, and has a basic idea that behavioral achievement depends jointly on motivation (intention) and ability (behavioral control). According to TPB, behavior should be under volitional control, which means that the

person in question should be able to decide whether or not to perform the behavior. The intentional base is a common feature in both TRA and TPB. Intentions work as a basis for motivational factors that influence a behavior, and they are indications of how hard people are willing to try and how much effort they are willing to exert in order to perform the behavior. The stronger the intention, the more likely the person is to perform a behavior. (Ajzen, 1991)

Attitude and subjective norm towards a behavior are important components creating intention in both TRA and TPB. Attitude in TRA and TPB refers to the degree to which a person has favorable evaluation of the behavior in question (Ajzen, 1991), and it captures an individual's positive or negative feelings about performing a behavior (van Slyke et al., 2007). The more favorable the attitude towards a certain behavior, the stronger is an individual's intention to perform the behavior in question (Ajzen, 1991). Attitudes are influenced by behavioral beliefs and evaluations (Sintonen, 2008, 35), referring to an individual's salient beliefs about the consequences of performing a behavior weighted by the individual's own evaluation of each consequence (van Slyke et al., 2007). Subjective norm refers to the perceived social pressure to perform or not to perform a behavior (Ajzen, 1991) and it captures an individual's assessment of the extent to which important referent individuals desire the performance of a behavior (van Slyke et al., 2007). It consists of normative beliefs and motivations (Venkatesh & Davis, 2000). Favorable subjective norm has a positive effect on the intention to perform a behavior (Sintonen, 2008, 35). Based on subjective norm, even if people are not favorable to a behavior themselves, they might choose to perform it if they believe that one or more important referents think they should, and they are sufficiently motivated to comply with the referents (Venkatesh & Davis, 2000).

In TPB, there is also a third component that affects the intention to behave in a certain way, called perceived behavioral control. The actual control over the behavior includes some motivational as well as non-motivational factors such as availability of essential opportunities and resources (e.g. time, money, skills, cooperation of others), and is a self-evident part of the TPB since the resources and opportunities available to a person must to some extent dictate the likelihood of behavioral achievement. Hence, if a person has the

required opportunities and resources, and intends to behave in a certain way, the person should succeed in doing so. Perceived behavioral control, on the other hand, is a much more complex phenomenon. (Ajzen, 1991) It refers to an individual's perception of the ease or difficulty of performing a behavior (Ajzen, 1991), and is formed from control beliefs and facilitation (Sintonen, 2008, 36). Perceived behavioral control, together with behavioral intention, can directly predict actual behavior (Ajzen, 1991). A person with a great perception of control is more likely to behave in a certain way whereas if the perception of control is pessimistic, a person may never even have the courage to try the new behavior (Ajzen, 1985, 24). The following presentation is a simplification of the models that helps to understand the basic ideas as well as the similarities and differences between them.

*TRA: Perceptions → Attitudes + Subjective Norm → Intentions → Behavior*

*TPB: Perceptions → Attitudes + Subjective Norm + Perceived behavioral control → Intentions → Behavior*

### **4.3. Diffusion of Innovations (DOI)**

The adoption process is influenced by several characteristics that have to be taken into serious consideration when launching a new innovation. Some of these characteristics are differences in individual readiness to try new products, the effect of personal influence, and differing rates of adoption. (Kotler, 2006, 659) These characteristics are well covered by the diffusion theory that was originally presented by Everett Rogers. Diffusion refers to the process of commercialization, or bringing into common usage, of a new product, process or service. Diffusion and adoption are two sides of the same coin, meaning that diffusion of an innovation occurs through its adoption by users. (Conway & Stewart, 2009, 10) Diffusion of innovations, such as new technologies, results from a variety of individual decisions that are often a result of comparing the uncertain benefits of an innovation with the uncertain costs of adopting it (Shin, 2009). According to innovation diffusion research, customers gather and synthesize information about an innovation and this information processing leads in the formation of perceptions of the innovation. Based on these perceptions, the innovation is either adopted or rejected. Innovation diffusion research presents that many different outcomes are of interest in technology adoption, such as the

initial decision to use and the continued or sustained use of the innovation. This means that the initial decision to adopt is not enough since users still need to institutionalize the innovation as a part of their regular behavior. (Agarwal & Prasad, 1997)

Diffusion is a long process during which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995; ref. Rogers, 2002). Patience is required in new technology launches since innovations take time to diffuse into markets (Day & Schoemaker, 2000, 130; Kotler, 2006, 661). Diffusion is communication concerned with the spread of messages that are perceived as dealing with new ideas, and necessarily represent a certain degree of uncertainty to an individual or an organization. The communication of an innovation may lead to the adoption, adaptation, rejection, or discontinuance, such as rejection followed by initial adoption of that innovation. (Rogers, 2002) The processes of launching and promoting play a very important role in the diffusion of an innovation (Conway & Stewart, 2009, 11). The four main elements in the diffusion of innovations are innovation, communication channels, time, and the social system (Rogers, 2002).

#### **4.3.1. Innovation characteristics' effect on diffusion**

Based on Rogers (2002), innovation diffusion theory posits five perceived characteristics that, as perceived by the members of a person's social system, influence the rate of adoption of an innovation. These characteristics are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2002). Innovations that are perceived by potential adopters as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations (Rogers, 2002; Conway & Steward, 2009, 158). Other characteristics influencing the rate of adoption are cost, risk and uncertainty, scientific credibility and social approval. These characteristics need to be reached and the key ones should be given maximum attention in designing the launch program. (Kotler, 2006, 661)

Relative advantage is the degree to which an innovation is perceived better than the idea it supersedes (Rogers, 2002), in other words, the degree to which the innovation appears superior to other products (Kotler, 2006, 661, Conway & Steward, 2009, 158), the perceived advantage of the product in relation to the best available alternative (Day & Schoemaker, 2000, 130), or the extent to which a potential adopter views the innovation as offering an advantage over previous ways of performing the same task (Moore & Benbasat, 1991). Relative advantage can be in the form of economic gain or in the form of cost savings (Ram, 1987), as well as low initial cost (van Slyke et al., 2007). The costs that are saved can be both financial and social (Ram, 1987), the latter referring to aspects such as social prestige, decreases in discomfort or savings in time and effort (van Slyke et al., 2007). The innovation might also provide improved performance at comparatively low costs, meaning higher value (Ram, 1987). What's important is that it doesn't matter if an innovation has a great deal of objective advantage or not. What matters is whether the consumer perceives the innovation as advantageous or not (Rogers, 2002), including the image of the innovation (Agarwal & Prasad, 1997). Hence, both objective and subjective measures of relative advantage need to be taken into consideration, with an emphasis on the latter. Relative advantage depends on the performance of the technology and the intensity of simulative efforts by competitors offering the same technology. (Rogers, 2002) Previous research shows that perceived relative advantage is the most important predictor of the rate of adoption of innovations (Rogers, 2002; Kleijnen et al., 2009).

Compatibility is the degree to which an innovation is perceived as consistent with previous, existing values, past experiences, and needs of the potential adopters (Rogers, 2002; Kotler, 2006, 661). Compatibility represents not only consistency with the existing values of the consumer, but also with traditional and cultural values, and with current lifestyles of the consumer (Ram, 1987). Complexity is the degree to which an innovation is perceived as difficult to understand and/or use (Kleijnen et al., 2009). It arises from two dimensions, complexity of the idea and complexity of execution (Ram, 1987). Trialability, or divisibility, is the degree to which an innovation can be tried on a limited basis. Trialability has an impact on the perceived risk associated with the innovation (Ram, 1987) that is later mentioned as a driver of innovation resistance. Observability (Rogers, 2002), or communicability (Ram, 1987; Kotler, 2006, 661) is the degree to which the results of an innovation are visible, observable, and describable to others (Rogers, 2002, Kotler, 2006,

661). Observability can be divided in two dimensions that are demonstrability, meaning the tangibility of the results or benefits of using an innovation (Ram, 1987), and visibility, referring to the extent to which potential adopters see the innovation as being visible in the adoption context (Moore & Benbasat, 1991). Ability of the marketer to communicate the benefits of an innovation is also mentioned as a component of observability/communicability (Ram, 1987).

#### **4.3.2. Social aspects of diffusion – the effect of customer innovativeness**

Diffusion of innovations is essentially a social process in which people talking to other people spread an innovation, so most consumers evaluate an innovation not on the basis of scientific research by experts but on the basis of subjective evaluations of their “near-peers”. During the innovation decision-making process, an individual or other decision-making unit passes through the following stages: from first knowledge of an innovation to forming an attitude towards an innovation, to a decision to adopt or reject the innovation, to implementation of the new idea, and to confirmation of this decision. (Rogers, 2002) Everett Rogers (2002) defines a person’s level of innovativeness as “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a social system”. In each product area, there are pioneers and early adopters as well as there are late adopters. According to adoption literature (Ram & Sheth; 1989; Rogers, 2002; Bass, 2004), adopters of innovations can be classified into five categories that are innovators, early adopters, early majority, late majority and laggards. According to this model, there are at first only the most innovative people in the market who are willing to adopt an innovation, but eventually an increasing number of people start adopting it. At some point, the number reaches a peak and then starts diminishing until only the few non-adopters remain. (Kotler, 2006, 659)

Innovators are the first two and a half per cent of consumers adopting an innovation (Rogers, 2002). They are technology enthusiasts who love to tinker with new products and master their intricacies (Kotler, 2006, 660), and they have a keen interest in new ideas (Conway & Steward, 2009, 155). Innovators are venturesome and daring, and they also

interact with other innovators (Rogers, 1962; ref. Bass, 2004). They are those consumers who adopt an innovation independently of the decisions of other individuals in their social system, so the timing of purchase by other members of the social system doesn't influence their adoption behavior. This means that the pressure to adopt an innovation doesn't grow for these people when more members of their social system adopt the innovation, but in fact, the effect might be quite the opposite. (Bass, 2004) The innovators' interest in new ideas leads them out of a local peer network and into more cosmopolite social relationships (Rogers, 2002). Innovators are special consumers who have interests, needs and knowledge very different from typical consumers (Antil, 1988).

Early adopters are the next 13,5 % of consumers who adopt an innovation (Rogers, 2002). They are opinion leaders, which means that potential adopters look to early adopters for advice and information about an innovation. To be held in esteem, early adopters must adopt innovations prior to their peers and convey their subjective evaluations through their personal networks (Conway & Steward, 2009, 156). Therefore, using early adopters as opinion leaders can make the diffusion process faster. Early adopters are consumers who search for new technologies that might give them competitive advantage. They are not very price sensitive and are willing to adopt new products when given personalized solutions and good service support. (Kotler, 2006, 660) What separates early adopters from innovators is that they are "localites", whereas innovators are cosmopolites, and they are a more integrated part of the local system than are the innovators (Rogers, 2002).

Early majority are the next 34 % of the adopters (Rogers, 2002). They are pragmatists who adopt a new technology when its benefits are proven and a lot of adoption has already taken place. These are the customers who make up the mass market. (Kotler, 2006, 660) Critical mass is the point at which the innovation is sufficiently diffused for its use to persist. Innovations that fail to achieve critical mass eventually fall into disuse. (van Slyke et al., 2007) This is why early adopters are such an important adopter group; if they do not adopt the innovation, it is highly unlikely that it ever reaches mass markets. They also create social pressure on non-adopters of the innovation, provide interconnectedness between individuals in the social system and create a drive in the diffusion of the innovation (Conway & Steward, 2009, 156). Late majority are the next 34 % of individuals

in a system to adopt an innovation (Rogers, 2002). They are skeptical conservatives who are risk averse, technology shy and price sensitive (Kotler, 2006, 660). They adopt the innovation more likely after the uncertainty around it has been largely removed through the earlier adoption by others in the social system (Conway & Steward, 2009, 156).

Finally, laggards are the last 16 % of adopters (Rogers, 2002), who are tradition-bound and resist innovations until they find that the status quo is no longer defensible (Kotler, 2006, 660). They are suspicious of new ideas and change, and their point of reference tends to be past rather than future. Since they are often poorly connected in the social system, they might not even be aware of the latest innovations. People who are aware but have made the decision not to adopt an innovation due to their principles or some rational reasons are also a part of this group. (Conway & Steward, 2009, 156) Laggards accept an innovation only when they are surrounded by peers who have already adopted it and are satisfied with it (Rogers, 2002).

The groups from early adopters to laggards can be defined as imitators since they clearly differ from the innovator group in their willingness and ability to adopt innovations. Compared to innovators, these groups are influenced in the timing of adoption by the pressures of their social systems, as well as the decisions of other members in their social system. The pressure tends to increase for later adopters with the number of previous adopters. (Bass, 2004) The five adopter groups differ in their value orientations as well as their motives for adopting the innovation (Kotler, 2006, 659). There are also other major individual differences between earlier and later adopters. Earlier adopters tend to have a higher socio-economic status, be better educated, be less dogmatic and more open to change, be more able or willing to cope with uncertainty and risk, be more interconnected with their social system, and be actively engaged in information-seeking activities. (Conway & Steward, 2009, 157)

Other factors that influence the rate of diffusion are factors that support the commercialization process, such as the nature and extent of the marketing and advertising effort, and the breadth and speed with which an effective distribution network can be

established (Conway & Steward, 2009, 159-160). Another factor is personal influence, which refers to the effect that one person has on another's attitude or purchase probability. The importance of personal influence depends on the situation. It is more important in the evaluation stage than in any other stage of the adoption process. It has also more influence on late adopters than early adopters, and it is most important in risky situations. (Kotler, 2006, 660)

#### **4.4. Perceived value perspective**

Customer perceived value has gained a lot of attention in the field of marketing partly because it plays an important role in predicting purchase behavior and achieving sustainable competitive advantage (Wang & Wang, 2010). Value creation thinking seems to be in the core of the whole marketing discipline these days, as Kotler (2006, 36) puts it: "A company can win only by fine-tuning the value delivery process and choosing, providing and communicating superior value". Based on the traditional view, value is decided when a consumer compares the difference between sacrifices or costs, such as price, and benefits, such as quality. If the benefits are greater than the sacrifice, consumer surplus is created, which may lead to purchase decision (Wang & Wang, 2010). The value, set by the innovation's perceived relative benefits minus the perceived relative costs, must be sufficiently compelling to motivate switch into the new technology (Day & Schoemaker, 2000, 130). This is why price plays an important role when a customer forms a perception of value. The consumer will ask why pay the usually high price of a new technology and what is the benefit of adopting it. The benefits have to meet or exceed the costs in order to motivate potential customers to adopt an innovation. The lower the price, the easier it usually gets to convince the customer that the benefits exceed the costs, because when costs are low, lower benefits are also accepted (Bursky, 2001).

However, current research suggests that this model is too simplistic and there are more complex attributes that create customer perceived value besides price and quality. (e.g. Bolton & Drew, 1991; Wang & Wang, 2010) In the modern world, it is no longer tangible costs that influence value perception the most but instead, it is the intangible costs such as

convenience, time, security and effort spent (Hoyer and MacInnis, 2003; ref. Wang & Wang, 2010). According to one point of view, perceived customer value consists of eight types of different values that are convenience, quality, success, reputation, fun, beauty, virtue and faith. This conception is comprehensive but it fails to take into account the costs associated with consumption. (Holbrook, 1999, 1-28) Perceived value is also seen to be dependent on the context, as Wang & Wang (2010) present: “perceived value is a context-specific perception that may drive customers’ attitudes and behaviors. That is, under different contexts, people decide their usage based on a value trade-off at the moment, at the place they are”.

## **5. Customer resistance to innovations**

Most companies face very high rates of new product failure that is related to the customers’ unwillingness or inability to adopt new innovations, the so-called customer resistance (Ram & Sheth, 1989). Even if an innovation eventually becomes successful, it can take years to reach the point where customers start adopting it (Garcia et al., 2007). The non-acceptance of innovations has generally been attributed to laggards’ inability to keep up with the times but current research shows that innovation resistance can’t be seen as a potentially negative aspect of target markets for new goods and services but rather as a response based on rational choices (Szmigin & Foxall, 1998), and as a normal reaction to change (Ram, 1987). Innovation resistance is the resistance offered by consumers to changes imposed by innovations, and is closely related to resistance of change (Ram, 1987). It seems that consumers are attached to existing products, not necessarily in a rational, but in a strong way, and one can’t assume that something new, better, or less harmful will immediately be accepted (Szmigin & Foxall, 1998). Innovation resistance is not obverse of innovation adoption, but instead, adoption begins after resistance has been overcome (Ram, 1987).

## 5.1. Characteristics of innovation resistance

Each of the adopter groups (innovators, early adopters, early majority, late majority and laggards) has a different level of resistance, and this variation of level affects the timing of adoption. It is obvious that for innovators, there is not much resistance at all and they adopt innovations easily, whereas for laggards, the process takes a lot of time or doesn't happen at all. (Ram & Sheth, 1989) Innovation resistance also varies in degree; resistance exists on a continuum increasing from passive resistance or inertia towards active resistance (Ram, 1985; ref. Ram & Sheth, 1989), meaning that consumers may behave in different ways when being introduced to an innovation. Third, innovation resistance exists across product classes. (Kleijnen et al., 2009) Overall, consumer resistance to innovations can be viewed as dependent on three sets of factors that are perceived innovation characteristics, consumer characteristics and characteristics of propagation mechanisms. (Ram, 1987)

The first reason for innovation resistance is that innovations tend to create change in the consumers' daily life and routines (Ram & Sheth, 1989). Resistance occurs especially if a consumer is happy with the current situation (Ram, 1987). Purchasing a new product or service may lead to lifestyle changes and these lifestyle changes may also be a requirement for successful adoption (Antil, 1988). In other words, potential changes from a satisfactory status quo can cause resistance to the innovation (Sheth, 1981), and the degree of change required impacts the degree of resistance (Kleijnen et al., 2009). If the consumer perceives a high degree of change in using the innovation, then he or she resists it (Ram, 1987). Also, innovations that create considerable change to the consumer are said to be discontinuous (Robertson, 1971; ref. Ram & Sheth, 1989). The higher the discontinuity of an innovation, the higher is the expected resistance (Sheth, 1981; Ram, 1987; Ram & Sheth, 1989). The second general explanation for innovation resistance is that an innovation might conflict with a consumer's prior belief structure (Ram & Sheth, 1989; Kleijnen et al., 2009). Based on these two basic reasons, innovation resistance is defined as: "The resistance offered by consumers to an innovation, either because it poses

potential changes from a satisfactory status quo or because it conflicts with their belief structure". (Ram & Sheth, 1989)

## **5.2. Functional barriers**

Customers face several barriers that prevent them from adopting new innovations. These barriers can be divided into two groups, functional barriers and psychological barriers. Functional barriers relate to three areas that are product usage patterns, product value and risks associated with product usage. These barriers are more likely to arise if a consumer perceives significant changes from adopting the innovation. The first functional barrier is the so-called usage barrier, meaning that customers tend to resist an innovation if it is not compatible with their daily practices, habits or routines. Innovations that contradict customers' routines require a relatively long development process before they gain acceptance. (Ram & Sheth, 1989) Also, if a consumer is happy with the current situation, there is no desire or reason to change, and innovations that conflict with the usage patterns of competing and well-established products or well-established workflows, practices or habits, will face resistance (Kleijnen et al., 2009). The second barrier is called value barrier, which is based on the value of an innovation. The basic idea here is that unless an innovation offers a very strong performance-to-price value compared with its substitutes, there is no incentive for the customer to start using it instead. (Ram & Sheth, 1989) The basics of value perception were introduced more thoroughly earlier in this study.

Risk barrier (Ram & Sheth, 1989), or perceived risk, refers to the risk that is associated with adopting an innovation (Sheth, 1981; Ram, 1987), since all innovation represents uncertainty and possible side effects that cannot be anticipated (Kleijnen et al., 2009). The level of risk depends on the type of innovation; the more major and radical the innovation, the more it contains risk (Ram, 1987). In recent research, the risk barrier has been divided into physical risk, social risk, economic risk and functional risk, also known as performance uncertainty (Ram, 1987; Ram & Sheth, 1989; Laukkanen et al., 2008). Physical risk means the harm to the customer that may be inherent in the innovation (Ram & Sheth, 1989) or

the potential damage to people or property that may be caused by the innovation (Klerck & Sweeney, 2007). Economic risk is related to the general cost of the innovation (Kleijnen et al., 2009) and refers to the basic idea that the higher the cost, the higher the risk of an innovation (Ram & Sheth, 1989). The third type of risk is called functional risk, which means that a customer may worry that an innovation is not fully tested and that it is possible that it doesn't function properly (Ram & Sheth, 1989), so the uncertain performance of the innovation causes the risk (Kleijnen et al., 2009). Innovations may create uncertainty for example if there is no performance record of them (Ram & Sheth, 1989). Finally, the fourth type of risk is called social risk. It means that customers may resist an innovation if they feel that they will face peer ridicule or other types of social problems after adopting it (Ram & Sheth, 1989). If the customer's social environment doesn't seem to accept or adopt an innovation or give support to adoption, resistance is likely to arise. Because of these uncertainties, consumers consequently assume that the likely outcome of innovation usage is negative, and the consumers' evaluation of the likelihood of these negative outcomes defines the perceived risk (Kleijnen et al., 2009). What happens is that customers tend to postpone adopting an innovation until they can learn more about it (Ram & Sheth, 1989).

### **5.3. Psychological barriers**

Psychological barriers include two factors that are traditions and norms of the customers and perceived product image. These barriers are likely to arise from the conflict between an innovation and the customer's prior beliefs. The first source of psychological resistance is tradition barrier that refers to the cultural change that an innovation creates for a customer. This means that when an innovation requires the customer to deviate from established traditions, it is resisted. (Ram & Sheth, 1989) Overall considering traditions and norms, any behavior that is contradictory to group norms, or societal and family values, creates a barrier (Herbig & Day, 1992; ref. Kleijnen et al., 2009). Moreover, tradition barrier implies the change that an innovation may cause in a customer's daily routines (Laukkanen et al., 2008). The second source of psychological resistance is image barrier. This means that innovations always acquire a certain image from their origins, product class and industry they belong to (Ram & Sheth, 1989). As actual product or

service characteristics and functionality may be hard to observe, image is likely to be derived from stereotypes, rumor or other indirect, non-experimental sources (Ram & Sheth, 1989; Kleijnen et al., 2009). If any of these components of image is unfavorable, customers tend to form an unfavorable image of the whole innovation. The image barrier is very hard to overcome. (Ram & Sheth, 1989)

#### **5.4. Perceived innovation characteristics and consumer characteristics affecting resistance**

The innovation characteristics that are the most likely to cause resistance are derived from the diffusion theory. Innovation resistance is likely to be high if relative advantage over existing substitutes is low, if perceived compatibility is low, if the level of any perceived risk component is high, if trialability is low, if communicability is low and if complexity is high. (Ram, 1987) Besides these, there are several other characteristics of innovations that are relevant from the innovation resistance's point of view. These are reversibility, realization, amenability to modification, and effect on adoption of other innovations (Zaltman et al., 1983; ref. Ram, 1987). Reversibility refers to the option that a consumer may have in terms of being able to discontinue adoption, if necessary. Realization refers to how soon the consumer expects to receive the benefits from the innovation. Amenability to modification reflects the flexibility with which the innovation can be modified in case it meets innovation resistance and is in fact the most important factor in reducing customer resistance. Sometimes the innovation may have an inhibitory effect on the adoption of other profitable innovations. If so, the consumer might opt out from the problematic innovation. Resistance is high if reversibility is low, realization is low, amenability to modification is low and/or the inhibitory effect of an innovation on the adoption of other beneficial innovations is high. (Ram, 1987)

Consumer characteristics that have been found relevant to consumer behavior in the context of innovations are attitudes, value orientation, previous innovation experience, perception of need, motivation, beliefs, and personality, including self-confidence and dogmatism. Resistance tends to be high if there is a perceived lack of need for the innovation, low motivation to adopt, and a consumer has a low self-esteem and/or a high

level of dogmatism. Moreover, the more positive a consumer's beliefs about an innovation, the more positive a consumer's attitude towards adopting an innovation, and the more favorable a consumer's previous innovation experience, the lower the resistance. The previous factors are connected with the consumer's willingness to innovate, but there are also many factors that affect the consumer's ability to innovate, referring basically to the customer's demographic variables such as education, mobility and age. Hence, there may be consumers who are willing to adopt an innovation but don't have the ability to do so. The poorer the consumer's ability to innovate, the higher the resulting resistance. (Ram, 1987)

## **5.5. Non-adopter typologies**

Since much focus has been on the adopters of innovations, the non-adopters have been ignored as a valuable source of information that could be vital in further development and success of an innovation (Laukkanen et al., 2007). That is why some more light should be shed on innovation resistor typologies. When a customer is buying a product, they have basically three different options; after a preliminary evaluation of the product or service, the customer may directly reject the product, decide on some sort of product trial or make a non-trial first purchase (Antil, 1988). Based on the likelihood of these behaviors, there are three types of resistant customers who all have their own types of reasons and ways to resist an innovation. These types are postponers, opponents and rejectors (Szmigin & Foxall, 1998; Laukkanen et al., 2007)

Postponers are consumers who intend to adopt an innovation within a year (Laukkanen et al., 2007). They find the innovation acceptable in principle but decide not to adopt it at the current point of time, as they might wait until the circumstances are more suitable. The decision of not to adopt is not final. Postponement is usually made for practical reasons. (Kleijnen et al., 2009) and is often driven by situational factors (Szmigin & Foxall, 1998; Kleijnen et al., 2009), especially with technology-based innovations where consumers worry that by investing too early in such innovations, they are at risk of rapid introductions of new improved versions leaving them with obsolete equipment (Dhebar, 1996). The

consumer might feel that the innovation is too risky and postpone the decision to adopt (Ram & Sheth, 1989). The second group, opponents, are a group that is convinced that the innovation is unsuitable and they might actually sabotage the innovation's launch (Kleijnen et al., 2009). They are very active resisters (Ram & Sheth, 1989). Reasons for opposing innovations may be numerous from habit resistance and situational factors to the customer's cognitive style. Whatever the reason, opponents don't see any relative advantage that an innovation might offer, but instead they might see disadvantage in adopting it. (Szmigin & Foxall, 1998) The third group, rejectors, does not intend to adopt the innovation at all (Laukkanen et al., 2007). Rejection is not driven by a simple lack of awareness or ignorance about the innovation (Kleijnen et al., 2009) but it is rather based on an active evaluation of the innovation on the consumer's part, which results in a strong disinclination to adopt the product (Rogers, 2003; ref. Kleijnen et al., 2009). This reluctance is often driven by a suspicion of new and unproven innovations (Lee & Clark, 1996-1997), as well as conservatism, referring to a reluctance to change the status quo (Hirschheim & Newman, 1988). The reasons behind rejection tend to be societal, such as tradition and norms (Kleijnen et al., 2009), and they seem quite idealistic as well. Another explanation for rejection is that the innovation simply doesn't offer enough worthwhile advantage to the customer (Szmigin & Foxall, 1998).

## **6. Synthesis of the models**

The common aim of TAM, TRA, TPB, DOI, perceived value perspective and innovation resistance theories in the context of this research is to explain innovation acceptance and adoption behavior. The first five models focus on the "positive side" of adoption, meaning the factors that create positive attitudes, intentions, and adoption behavior towards an innovation, whereas resistance theory focuses on the "negative side", meaning the factors that slow down, or totally prevent adoption. The adoption models also have an underlying "pro-innovation" bias (Rogers, 1983; ref. Ram, 1987), meaning that according to these models, all innovations are good for the consumer, and the models tend to classify late adopters as "laggards" who simply cannot keep up with their times (Ram, 1987). Innovation resistance theory, on the other hand, claims that it is natural that change

creates resistance (Ram, 1987), and consumers cannot be blamed for being late adopters since they often have rational reasons for their behavior.

Technology acceptance models contain many similar hypothesized predictors of usage with diffusion models, such as individual beliefs or perceptions about innovation characteristics (Agarwal & Prasad, 1997). The inclusion of perceptions, or beliefs, as key independent variables is a common feature for all of these models (Ram & Sheth, 1989). The models have alternate conceptualizations of perceptions (Agarwal & Prasad, 1997) and the amount of perceptions, and the importance of different perceptions also varies between the models. TAM includes two perceptions, perceived usefulness and perceived ease of use (Davis, 1989; Agarwal & Prasad, 1997). TRA and TPB recommend that perceptions be elicited specifically for each innovation (Fishbein & Ajzen, 1975; ref. Agarwal & Prasad, 1997). Diffusion theory presents that five perceived innovation characteristics affect adoption behavior (Agarwal & Prasad, 1997) and perceived value perspective is based on two basic perceptions, benefits and costs that are created by numerous evaluations of tangible and intangible elements (Wang & Wang, 2010). Innovation resistance also presents numerous negative perceptions as a reason for resistance, and alongside many other perceptions, the five innovation characteristics from diffusion theory are reversed for the resistance theory (Ram, 1987), meaning that they can either create adoption or resistance depending on their volume and direction.

There are some clear similarities in the perceptions between different models. Most of the perceptions from different models have the tendency of adding value to an innovation, so perceived value perspective is widely connected to other models (Pi et al., 2010). Relative advantage from DOI is similar to the construct of perceived usefulness in TAM (Agarwal & Prasad, 1997), since the idea of savings in time and effort from relative advantage corresponds with the concept of perceived usefulness (van Slyke et al., 2007). Perceived value could also be added to this set of perceptions since time and effort are cost components in the model (Wang & Wang, 2010). Complexity from the diffusion theory, on the other hand, is related to ease of use from TAM as they both explain how relatively free of effort an innovation is to use (Agarwal & Prasad, 1997). It has also been proved that ease of use from TAM increases the value of an innovation. Compatibility also influences

positively users' value perceptions, and these value perceptions affect intentions to use. (Pi et al., 2010) Personal influence from DOI has the same features with subjective norm from TRA and TPB, and these could be seen as two sides of the same coin since personal influence explains the influence that one person has over another's attitude towards an innovation (Kotler, 2006, 660), whereas subjective norm explains how important others influence a person's attitude towards an innovation (Ajzen, 1991).

TAM, TRA and TPB are very closely tied to each other. They all have the same view of the process that leads to adoption or other behavior. In all of these models, beliefs or perceptions are the basis for all behavior. After an individual has formed the basic beliefs about a behavior, attitudes are formed based on these beliefs. According to TAM, attitudes alone affect the intentions to behave in a certain way (Teo, 2009), whereas TRA suggests that besides attitudes, subjective norm has to be taken into account as well (Ajzen, 1985, 12; van Slyke et al., 2007). TPB goes even further by adding perceived behavioral control as a variable affecting intentions (Ajzen, 1991). All three models agree on the point of view that intentions are predictors of actual behavior. As a conclusion, TAM, TRA and TPB use a four-stage process of beliefs or perceptions, attitudes, intentions and behavior as a basis for explaining why certain behaviors occur. The DOI process, on the other hand, proceeds from the first knowledge and perceptions of an innovation to forming an attitude, and directly to the decision to adopt. Intentions have been left out of the DOI process but DOI adds another stage to the process that is placed after the decision to adopt, the confirmation of the adoption decision (Rogers, 2002). In the perceived value perspective, the process is not so clearly presented but based on Wang & Wang (2010) it seems that there is a similar type of process there as well. In the process of perceived value perspective, the customer first evaluates the relationship of costs and benefits, based on which he or she forms the basic perceptions about the value, which lead to positive or negative attitudes that lead or do not lead to adoption. The processes in all of these models include four stages and have the same basic idea of adoption behavior being the result of a number of evaluations and attitude formation.

The models also work as bases for each other, and components from different models can be linked to each other. For instance, DOI provides guidance on beliefs relevant to

decisions about the use of new technology (van Slyke et al., 2007). In the context of innovation adoption, beliefs regarding the characteristics of an innovation from DOI offer a useful set of perceptions that can be applied using a TRA framework as determinants of attitudes and intentions (Karahanna et al., 1999; ref. van Slyke et al., 2007). Relative advantage, compatibility, demonstrability and visibility have a significant influence on use attitudes and intentions that work as a basis for future usage in TAM, TRA and TPB (van Slyke et al., 2007). Attitudes based on direct experience have consistently been shown to predict behavior better than attitudes based only on indirect experience (Gilly & Gelb, 1982), which means that trialability can also be seen as one perception that contributes to attitudes especially in TAM, TRA and TPB. The value perspective can also work as a component in TAM, TRA and TPB. The perception of customer value increases the willingness of consumers to buy, and perception of customer value and attitudes have a significant effect on the user's behavior. Ease of use from TAM increases the value of an innovation. Compatibility from DOI also influences positively users' value perceptions, and these value perceptions affect intentions to use. Hence, customer value perception may influence the degree of intention to use. (Pi et al., 2010) A number of connections alike could be drawn from these models, which proves that they can be associated with each other for different research purposes.

Innovation resistance derives from the adoption theories, and there are many connections between the two points of view. First, all five innovation characteristics that enable adoption in DOI are presented as sources of resistance as well (Ram, 1987). Besides being individual sources of resistance, the five characteristics are also components of many other sources of resistance. The value barrier is closely related to the concept of relative advantage from diffusion theory (Wu & Wang, 2004). Social risk is strongly related to observability (Kleijnen et al., 2009). Perceptions from the technology acceptance models are also components of innovation resistance. The value barrier has a connection with the concept of perceived usefulness in TAM (Wu & Wang, 2004). The usage barrier, on the other hand, is connected to the easiness of use; an innovation has to be convenient and easy to use in order to cause as little change to the customers' daily routines as possible. Unless the usage of a product is made easy, it will face resistance (Ram & Sheth, 1989). Value barrier and the perceived value perspective are very similar with each

other and could be seen as two sides of the same coin. Tradition barrier is also related to customer attitudes (Ram & Sheth, 1989) that are a component in the adoption models.

Concerning the relationship between the launch and the adoption theories, there are connections between strategic and tactical launch decisions and innovation performance that is created by adoption. The strategic decisions form the “what, where, when, and why to launch” part of the process (Hultink et al., 1997; Hultink et al., 1998), and in the “what” part, those innovation characteristics that will later affect the adoption or rejection, are decided. The tactical decisions that form the “how” part of the launch include marketing mix-related decisions such as product branding, sales and distribution support, and timing decisions (Calantone & Di Benedetto, 2007). The timing of adoption is important for the imitator groups in DOI (Bass, 2004). Other examples of the effect of tactical launch decisions on adoption are that new product performance is likely to be higher when relative advertising expenditures are higher, relative price is lower, and relative breadth of product assortment is broader (Hultink et al., 1997). Relative price is related to relative advantage from DOI, and the cost construct from perceived value perspective.

Technology life cycle model is developed from the basis of the diffusion and adoption theories (Conway & Steward, 2009, 128-129). The diffusion model has the common feature with the TLC model that both present a same kind of development in the innovation’s acceptance, but from a different point of view. Based on the TLC model, an innovation goes through introduction, growth, maturity, and decline phases. These phases are relatively similar to the diffusion model’s phases that are caused by the differences in the customers’ innovativeness. For example, the introduction phase could be seen as the phase where innovators adopt the innovation, growth as the phase where early adopters adopt, maturity as the stage where early and late majority adopt and decline as the stage where only the laggards adopt the innovation.

The following presentation aims to conclude the key factors from each theoretical model that either support or prevent adoption. The connections between different perceptions from the models are so numerous that they are not included in the following presentation

in order to keep it clear and simple. The aim of the following presentation is to give the “big picture” of the adoption process and its components based on the combination of the adoption and resistance models that have been presented in this study.

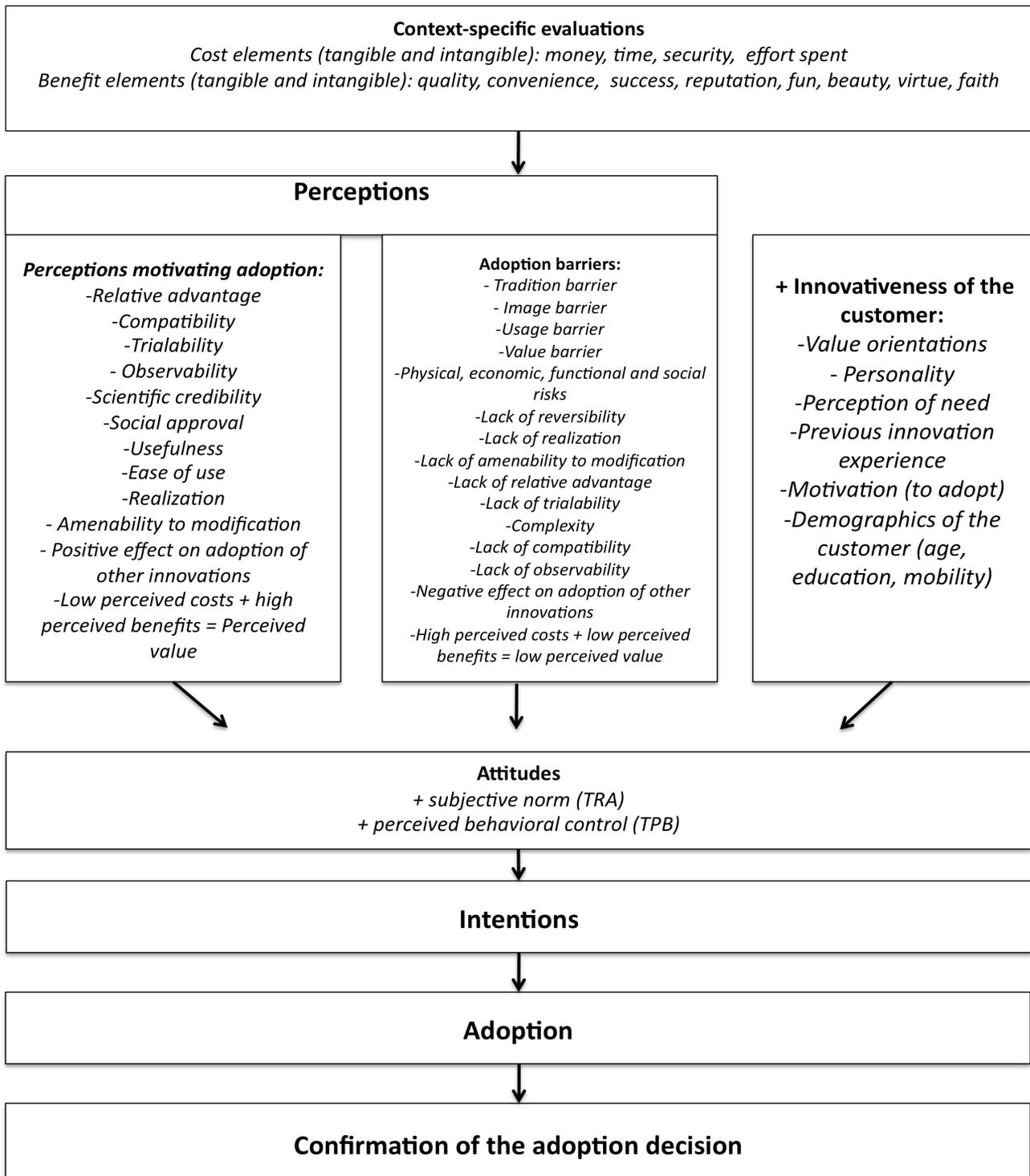


Fig. 2: Synthesis

## 7. Empirical research

The research was conducted by interviewing two user groups of Suunto Fitness Solution, the group fitness instructors and the customers. The questions were kept on a very general level to enable the respondents to tell with their own words what they think, and to avoid loaded questions. The respondents are kept anonymous. The interviews were conducted in Finnish, and all the quotes from the responses that appear in this thesis have been translated from Finnish to English. Both groups' answers to these questions are analyzed in this section to find out the underlying factors of adoption or rejection of Suunto Fitness Solution. In the conclusion of this part, the results of the research are linked to the theoretical base of the thesis.

The instructor group consists of four instructors from Etelä-Karjalan Liikuntakeskus. They differ by their instructing experience as well as their age, and are specialized in different fitness classes. All of the instructors were asked the following questions:

- *In general, are you eager to find out about new products and services? Are you interested in the latest technologies?*
- *Do you believe in heart rate based training as a concept?*
- *How do you feel about Suunto Fitness Solution? Why?*
- *Have you actively used Suunto Fitness Solution in you classes? Why/why not?*

The customer group includes five customers of Etelä-Karjalan Liikuntakeskus who have not yet adopted Suunto Fitness Solution. The decision of interviewing only non-adopters was made because the focus of this research is to find out why most customers have not yet adopted Suunto Fitness Solution. Four of the customers are members of the club and one of them visits the club regularly but is not yet a member. The questions asked from the customers were the following:

- *In general, are you eager to find out about new products and services? Are you interested in the latest technologies?*
- *Is heart rate based training as a concept familiar to you?*
- *How do you feel about heart rate based training in general? Why?*
- *How do you feel about Suunto Fitness Solution? Why?*
- *Have you purchased Suunto Fitness Solution yet? Why? /*
- *If not, would you consider purchasing Suunto Fitness Solution at some point? Why?*

## **7.1. Interviews of the group fitness instructors**

On a general level, the respondents in this group are either early or late majority adopters of new innovations and none of them showed clear signs of being either a very innovative or a laggard-type of adopter. Only one of the respondents showed signs of actually being “afraid” of innovations while most respondents told that they are generally interested in new technologies and have a positive attitude towards them. The main reasons for not adopting new innovations in this group are perceived lack of money, time, and need, as well as need for peer recommendations. However, it seems that the instructors’ innovativeness does not have anything to do with using Suunto Fitness Solution during classes. No matter what the answer was to the first question, the instructors seem to be positive towards Suunto Fitness Solution and do not see it as a threat even if they are not very innovative in other contexts. With Suunto Fitness Solution, the instructors represent the early adopter group and work as opinion leaders to the customers because they have to, and this does not seem to cause any problems to the respondents.

All of the interviewed instructors believe in heart rate based training as a concept and see numerous benefits in it. Some of these benefits, in their opinion, are that a heart rate monitor helps to listen to and know your own body, helps to get more out of each workout and helps the customer to make goals and results meet. On the other hand, in the fitness club context, some instructors have a feeling that instructors in general do not know enough about heart rate based training in order to be able to help customers use heart

rate information correctly and effectively. Some of the respondents also stated that there is a great variety in the skills of the instructors concerning heart rate based training in general, so other instructors are more able to utilize heart rate information than others. It seems that there is a clear need to educate instructors more about heart rate based training in general in order to make sure that all instructors utilize heart rate data in the same, standardized manner and are able to give the right information to customers. For example, one of the instructors thinks that in order to get more out of heart rate based training, there is a need for all instructors to find out some tricks and tips that help them get the customers' heart rates to the aimed level during classes. All instructors should be on the same basic level concerning their knowledge about heart rate based training. This would most probably help the instructors sell, or recommend any heart rate monitors to all customers. Also, some instructors feel that the customers do not know enough about heart rate based training and that the customers should be informed more about the concept as well.

As a concept, all of the interviewed instructors support Suunto Fitness Solution and believe in it. As a whole, they feel that the system has numerous benefits, one of them being that it enables the instructors make better classes since they can plan them more based on heart rate and hence create closely the same training effect for all customers. Most of the instructors mentioned the training reports that customers and instructors get via email after class as a clear advantage of the system since they enable customers to take their time and go through the workout in all peace at home, as well as enable the instructors see the training effect of the whole class. One respondent mentioned that Suunto Fitness Solution helps the customers to do more rational workouts. These features give relative advantage to Suunto Fitness Solution compared to regular heart rate monitors. The instructors also mentioned some negative sides of Suunto Fitness Solution. These are mostly functional problems that some of the instructors find disturbing. One of the instructors mentioned that sometimes the system does not identify everyone's heart rate, so they do not show on the screen, as they should. The respondent also told that it feels disturbing that the heart rates of one fitness class show up on screens in other classes as well. Another instructor's Suunto belt had gone broken within a year of starting to use it. These problems should obviously be fixed but none of the respondents mentioned them as an inhibitory factor for using Suunto Fitness Solution.

Concerning Suunto Fitness Solution, the instructors mentioned the same problem with heart rate based training in general of not knowing enough of it to reach the maximum benefits of the concept. For example, one of the respondents had started working at the fitness club several months earlier and had not yet been educated to use the system. She feels like she wants to use the system and sees the benefits of it but since she does not really know how it works she does not have the courage to use it. On a general level, it seems that most of the instructors are not sufficiently trained to use Suunto Fitness Solution. One of the respondents mentioned the poor training that the instructors had when Suunto Fitness Solution was launched as a barrier for Suunto Fitness Solution's successful usage during classes. Most of the instructors did not attend the training session since it had not been made obligatory. Some of those who did attend feel like the training session was too short and superficial and did not give them enough tools to make full use of the system. Based on the interviews, there is a clear need for more information and training concerning Suunto Fitness Solution.

All of the interviewed instructors mentioned "bad marketing" as a reason for Suunto Fitness Solution's relatively slow diffusion at the club. When asked for specification, they most commonly mentioned the amount of marketing communication as the main problem. They feel like there has not been enough advertising about Suunto Fitness Solution and that this is why most customers still have not found it. One of the respondents said: "I don't know if some customers were given lectures about it or are the instructors just supposed to, like... Push it to the customers but I feel like, it does not give much to the customer if I just say that 'hey, we have this Fitness Solution here, go get it, buy it, it costs three hundred', I think not many of them go and buy it... There should be more effort on, like, marketing and advertising." This statement reflects the overall confusion among the instructors. The respondent does not know what the customers have been told about the system, and if there have been any lectures for the customers or not. She also does not feel like she would be able to give enough information about Suunto Fitness Solution to customers because she has not been trained to use it, and she does not know the price of it. Third, she feels like there is a need for more advertising support especially in informing the customers. Based on the interviews, it should not be too much on the instructors'

responsibility to inform customers about the system, but other communication tools such as free lectures and advertisements should be used as well, to support the instructors. Based on this, as well as the other interviews, it seems that most of the instructors are in a contradictory situation of being expected to give advice to the customers on how to use Suunto Fitness Solution correctly while not knowing themselves how it really works. Also, they feel like they are expected to sell it while not knowing the facts and arguments with which to sell.

The instructors also feel that the launch of Suunto Fitness Solution was not very successful at the club. The complexity of the launch and the general overwhelmed feeling among instructors during the launch is very visible in one interview: “We were not told how the launch is going to be... First, there was the two-week trial period. Then came another two-week trial period. After that I did not feel like selling it anymore... I feel like I have been embarrassed at that point. They told me that there is a two-week trial period and when I sent a customer to the reception they told the customer that the trial was over. So I didn't feel like I wanted to make a fool of myself like that again.” In this quote it is pretty obvious that employees had differing information about the whole launch process in the beginning and there was not a clear consensus about the practical side of the launch such as when the free trial-periods are. Some instructors did not want to look unprofessional by giving the customers false information about Suunto Fitness Solution so they chose not to say anything about it. Based on the interviews it is clear that the instructors would have needed more information about when the trial periods are, what the prices are, and so on but there was no information given about these issues, so the instructors simply started using the system in case they knew how to, and in some cases ignored the whole selling the system and informing the customers about it. One respondent suggested that Suunto Fitness Solution could be “re-launched” at the club by having another day when the instructors and sales force would present the system for customers as a way of giving the customers more information about the system and raising awareness about it.

Most of the interviewed instructors use the system during all classes or at least turn it on at the beginning. One instructor has not been trained to use the system so she does not currently use it. Another instructor told that sometimes it feels awkward to use it since the

instructor is, at the moment, often the only one using it during classes and it feels a little uncomfortable that the whole class stares at the instructor's heart rate. Also, there are days when the instructor has to "fake" a little, by not doing the class with the full aimed training effect. This may be because of having had too many classes and being exhausted, or because of coming to work with a flu or any other reason. In these situations, one of the instructors told that it feels really uncomfortable to use Suunto Fitness Solution since the customers can tell if you are not doing your best and the customers start feeling like they can do less as well. In these situations, this instructor told that it is easier to just "forget" to put the belt on.

## **7.2. Interviews of the customers**

The interviewed customers are very similar to the instructors in terms of their general attitude towards innovations. They are not extremely innovative adopters but instead, they all prefer to wait until other people have adopted an innovation first and it has become a mass product/service after which they are more willing to try it themselves, so they represent different forms of imitators in their adoption behavior. Based on the diffusion model, they could be categorized in the early majority or late majority. The most common reasons for waiting for the right moment for adoption are basically the same with the instructor group: financial reasons and lack of perceived need. Since the respondents are students, they simply do not have the extra money to adopt all the latest innovations and they want to be sure that an innovation is beneficial and works for them before adopting it. If the interviewed customers can cope with what they have, they do not want to purchase new technologies. Despite these problems, most of the interviewed customers show genuine interest towards new innovations and clearly like to learn about them, so their attitude is not the inhibitory factor for adoption in most cases and it seems that if they had the money and enough people recommended an innovation, most of them would be relatively eager to adopt new innovations. The following quote expresses the general state of mind of the respondents: "I might have an interest, like I want that, man, I want that, but then I try to be reasonable and consider if I really need it and if it is a reasonable purchase after all."

Concerning heart rate based training in general, the opinions and attitudes of the respondents differ a lot. As a concept it is familiar to all respondents but the perceptions of the benefits differ significantly. One of the respondents told that she does not see the benefits of monitoring heart rate during her workout since all she wants is to enjoy the workout and get the general benefits of going to the fitness club. She does not feel like it is relevant to know what her heart rate is during the workout and she is simply not interested in the whole information. She told that she had thought about buying a heart rate monitor once but was not ready to pay the price required. Other respondents, on the other hand, are interested in heart rate based training as a concept and see the benefits of it, and some of them already have heart rate monitors but due to situational factors do not want to purchase a new monitor yet. One of them told that she has been actively learning about heart rate monitors lately but still has a perceived lack of need: "If I can survive with a worse mobile phone, I can also survive without a hear rate monitor". She sees the benefits of a heart rate monitor but she also feels that she can survive without one.

Three of the respondents already have a monitor from Polar or Suunto and it seems that those who have a Polar have developed a strong brand loyalty towards the company, which is an inhibitory factor for getting a Suunto monitor at the first place. These Polar users could be categorized as heavy-users of heart rate monitors, who tend to be loyal to existing brands, which makes them a tricky segment from Suunto's point of view (Kotler, 2006, 659-660). When asked for specification why they do not feel the urge to change from Polar to Suunto in general, one of them answered that the operating system of Suunto monitors feels more difficult to use than the one in Polar monitors. She also told that since she has always had a Polar and it has worked so well for her, she does not want to switch to a Suunto monitor. The other, however, mentioned that since Suunto Fitness Solution is such an interesting concept, she might be willing to get her next regular heart rate monitor from Suunto because of it, since it would be convenient to only use one belt for both her personal monitor as well as for Suunto Fitness Solution. In her case, the system works as an incentive to get a regular heart rate monitor from Suunto as well, and this obviously creates competitive advantage for Suunto. At the moment, however, the relative advantage of Suunto Fitness Solution compared to the best substitute, which, in their case, is to compare their own heart rates from their Polar monitors with those that are on the Suunto Fitness Solution screen, is simply not remarkable enough to motivate the

change. Another respondent told that even if she does not have a heart rate monitor yet, Suunto Fitness Solution works as an incentive to get any type of heart rate monitor since it has helped her see the benefits of heart rate based training in general. She is interested in purchasing both a regular monitor and Suunto Fitness Solution but in her situation, the urge to purchase is not yet strong enough.

Suunto Fitness Solution in general seems to be intriguing to most respondents, at least for those who find heart rate based training beneficial. As a whole, most respondents see Suunto Fitness Solution as a great system and their attitude towards it is very positive. The general reasons why Suunto Fitness Solution seems interesting to customers and why the respondents consider adopting it are the possibility to follow the heart rate on the screen during classes, and the overall “fun” and excitement that it offers. One of the respondents mentioned that it is simply a lot of fun to see your own heart rate on the screen and it makes the workout a lot more interesting. Another respondent also mentioned that it is convenient and interesting to get the graphic of the workout via email after class, and she feels that the training effect (TE) value that is included in the email is a relevant and useful piece of information. The comparison of other customers’ heart rates with one’s own is a major benefit as well.

The factors that work against adoption, on the other hand, are numerous as well. One of the respondents mentioned the lack of trialability as a reason for not adopting. The respondent told that she never had the time to register at the reception to get a trial belt since she was in a hurry every time she came at the fitness club. She felt that getting a trial belt was too time-consuming and difficult and she was always too busy to get one. Another reason for not adopting is the lack of relative advantage since most respondents already have another option for following their development, whether it is another heart rate monitor or “self-monitoring”, meaning the counting of heart rate without any devices. One respondent mentioned that Suunto Fitness Solution has the disadvantage of only working at the club, meaning that one has to get a traditional heart rate monitor as well for monitoring workouts, such as running, that take place outside the club. The same respondent also mentioned that since she moves a lot and spends time in different cities, she does not have enough time to go at the fitness club and hence, the workouts during

which using Suunto Fitness Solution is possible, would be relatively few in number. One of the respondents also explains that since she is not interested in heart rate data, she could not care less about the heart rates on the screen. She does not see the benefits of traditional heart rate monitors or Suunto Fitness Solution at all, so the costs and the benefits simply do not meet and Suunto Fitness Solution does not provide her the value that it should for the price it has.

One of the respondents told about her experiences about the effect that other users have on the motivation to adopt Suunto Fitness Solution. She spent her summer at another town in Finland and visited a fitness club where Suunto Fitness Solution had been much more widely adopted than at the club of this study. This is what she told about her experiences: “There, the people used it much more than at our gym. I had the feeling a lot more often there that it would be so cool to see my heart rate on that screen as well... And there were screens at the regular gym as well... But when I came back, I had my own heart rate monitor again and since not many people use it [Suunto Fitness Solution] here, I have started to feel that well, I don’t need it either, I can cope with my own monitor just fine.” She feels that it is “a little sad” that only one or two people usually have the belt on during classes, and mentioned that it feels strange that some of the instructors do not even put the system on during all classes.

The lack of marketing, which most of the respondents assimilate with marketing communications, especially advertising, is also mentioned in the customer interviews. One respondent thinks that Suunto Fitness Solution probably needs more marketing effort from the club in order to succeed better. In her opinion, some sort of campaign would be an option, in order to introduce the system to more people. The role of the instructors also became clear in the customer interviews. It seems that the customers really care about what the instructors do, how much they use the system and how beneficial they make it feel. One respondent has the following impression about the instructors’ importance: “The instructors could have set the ground a little in the beginning of the classes or something, so that we could have got the information from somewhere. Or, I mean, the heart rates are there but I don’t know if everyone can benefit from them. Or at least I feel like, well, they are there now and someone has a high heart rate but is it a good thing or a bad thing...?”

### **7.3. Conclusions of the interviews and connections to the theoretical base**

The groups are very similar in terms of their overall innovativeness and adoption behavior, and the overall responses are not surprising based on previous adoption research. Money, time, lack of perceived need, and waiting for peer recommendations are the most common reasons in these groups for not adopting innovations on a general level. Theoretically, money and time are components of the cost structure in the perceived value perspective (Hoyer and MacInnis, 2003; ref. Wang & Wang, 2010), and if the perceived benefits are not big enough for the respondents to cover the costs, a value barrier is created (Ram & Sheth, 1989). Especially if the relative costs are high, it is very challenging for an innovation to offer such relative advantage for the respondents that it would motivate them to adopt it. The lack of perceived need is presented in the innovation resistance theory as an individual barrier for innovation adoption (Ram, 1987). The need for peer recommendations is understandable from the DOI point of view since most instructors and customers belong to the imitator groups that follow the actions of their social system in their adoption behavior (Bass, 2004).

Only one of the respondents from the customer group thought that heart rate based training as a concept is not interesting enough, whereas the majority of the respondents in both groups feel that heart rate based training on a general level is interesting and beneficial. All of the interviewed instructors have their own monitors and have adopted the concept of heart rate based training on a personal level. However, in general, both the instructors and the customers mentioned the problem of not knowing enough about heart rate based training, as a barrier for getting all the benefits from heart rate information, and this seems to be an adoption barrier for heart rate monitors in general. Other reasons why all the customers have not fully adopted heart rate based training as a concept were that it does not give enough value since the information is not beneficial enough, or that the relative advantage of a heart rate monitor is not remarkable enough to motivate adoption. The customers also experience economical risks concerning the purchase of a heart rate monitor, as well as a value barriers and lack of perceived need. As a conclusion, even if it seems that most respondents are genuinely interested in heart rate based training, they

have the same reasons for not adopting a monitor as they have for not adopting innovations on a general level.

Concerning Suunto Fitness Solution, both the customers and the instructors mentioned the lack of information as the main barrier for not adopting the system. The customers feel like they need more information about heart rate based training in general as well as about Suunto Fitness Solution, and they feel that the instructors should be more active and use the system during all classes, inform the customers and give tips about the right usage of the system. Many customers feel like the instructors do not tell them enough about the system during classes and for that reason the customers do not learn the benefits of it. The instructors are expected to be experts and active users of Suunto Fitness Solution but they feel like they have not been given enough tools to make that happen. Based on both groups' answers, the instructors need to be educated to use the system, to be able to tell the customers about it and to plan their classes more based on heart rates. The lack of information can be connected to complexity from the innovation resistance theory, as well as lack of ease of use, since the system seems too complex for the users to understand, and is not immediately easy enough to use. This is not because of the system itself but instead, the required amount of knowledge to get the full benefits of the system is currently too high for both the customers and the instructors.

The lack of marketing effort was mentioned in both groups as a barrier for the adoption of Suunto Fitness Solution. The instructors are probably the most important information channels to the customers concerning Suunto Fitness Solution since they are the ones actually using the system but there is a need for other information channels as well. Both the customers and the instructors feel like there has not been enough advertising and informing about Suunto Fitness Solution on a general level. For example, the system is not mentioned on the fitness club's website at all (Etelä-Karjalan Liikuntakeskus website), so the customers do not get any information about the prices or the availability via Internet, except if they visit the Suunto web page. Even finding the information about the price of Suunto Fitness Solution for this research was surprisingly difficult since besides not having it on the website, most employees of the fitness club had no idea about it. Lack of trialability from the innovation resistance theory (Ram, 1987) was also mentioned in both

groups. The customers feel like the trial is too time-consuming and complicated while the instructors are frustrated because they do not know when the trials are.

The benefits and disadvantages of Suunto Fitness Solution as a product and service were seen slightly differently in the two groups. Interestingly, only one of the customers mentioned the emails received after class as a reason to adopt Suunto Fitness Solution whereas the instructors feel that the emails are a very important factor of the system. This may of course be because not all customers are necessarily aware of the emails. However, it seems that getting the information via email is a relative advantage for Suunto Fitness Solution compared to regular heart rate monitors. Another relative advantage of the system is the comparison with other participants that it enables, which was mentioned significantly more in the customer group. Concerning the negative sides of Suunto Fitness Solution, none of the customers mentioned the technical problems as a reason for not adopting, whereas the instructors seemed to be more irritated by them. This might be, of course, because the instructors use the system much more and the non-adopter customers maybe have not been able to get a clear picture of the system's functionality based on one or two trials. However, lack of amenability for modification might become an adoption barrier later for both the instructors and the customers in case the technical problems cannot be fixed as soon as possible. Besides technical problems, the instructors seem to believe that the customers might be embarrassed because their heart rate is on the screen for everyone to see but none of the interviewed customers actually thought about that as a problem. The instructors, on the other hand, mentioned that sometimes they do not feel comfortable themselves because the whole class sees their heart rate, especially if the instructor's heart rate is the only one on the screen.

## **8. Discussion and managerial implications**

Since both the customers and the instructors have an overall positive attitude towards Suunto Fitness Solution and a majority of those customers and instructors who have not yet adopted it have positive intentions towards adoption, it seems, based on TAM, TRA, TPB and DOI approaches that it is a matter of time when the customers and the group

fitness instructors start using Suunto Fitness Solution more. However, the success does not come without action and things will not change unless the opinions of the customers and instructors are taken into consideration. Marketing programs for launching new products usually tend to focus on the advantages of the new product's attributes, which is not enough since marketing a resistant innovation requires a company to address to the consumers' mind-set as well, and if a company fails to address both of these issues, the result is most probably slow diffusion time (Garcia et al., 2007). In this chapter, some suggestions are given about what could to be done in order to get more adopters for Suunto Fitness Solution at Etelä-Karjalan Liikuntakeskus.

The most difficult and major problem with Suunto Fitness Solution appears to be the lack of information. Since the Internet is such an important channel for information seeking today, the web pages really need to be updated and information about Suunto Fitness Solution needs to be added there. Besides the Internet, all employees, not only the instructors but also everyone who has the opportunity to sell Suunto Fitness Solution, need to be trained to tell the customers about the system. As a solution to the problem with the training of the instructors, there might be demand for a professional Suunto Fitness Solution trainer giving detailed information and tips for making the most of the system, as well as a trainer who is able to give education about using heart rate information during classes. This trainer could be from Suunto since they offer onsite training sessions and heart rate workshops as an additional part of the Suunto Fitness Solution package that is sold to fitness clubs (Suunto web page), or the clubs could name their own trainers. A third option would be to find an expert of heart rate based training from a university or any other scientific community. The most important goal is that all instructors need to have the same high standard of knowledge about Suunto Fitness Solution as well as heart rate based training in general.

The instructors should be motivated to participate in the training sessions by either rewarding them for coming or by making attendance obligatory since only a minor part of the instructors participated in the short training session that was held when Suunto Fitness Solution was first launched at the club. Overall, there is a need for more training that is of high quality and is made obligatory. Based on TRA and TPB, the instructors should also feel like their important reference groups, superiors and colleagues desire the use of the

system in order to create more usage intentions and actual usage behavior in the instructor group (van Slyke et al., 2007). Peer influence and superior's influence are determinants of subjective norm in a decomposed model of TPB (Taylor & Todd, 1995), which needs to be taken into account when creating more social pressure on the instructors to start using Suunto Fitness Solution more. This means that the superiors need to recommend the system more to the instructors and work as role models, and using motivated instructors as role models might work as well in creating motivation to use the system among the instructors.

In the case of the customers, money is among the most popular reasons for not adopting Suunto Fitness Solution. Students simply need the money for things that they absolutely perceive useful and new technologies have the challenge of reasoning to these customers why they should spend their little budget on them. Here, the customers can be made more willing to adopt by two means, either by lowering the price or by communicating the benefits better and this way creating more value that the customers are ready to pay for. Successful introduction depends heavily upon the customer's ability to see meaningful differential advantage over existing products (Antil, 1988), and this differential advantage that consists, for example, of the email feedback, improved fitness classes, and real-time monitoring of workout data with the help of the color codes, needs to be identified and communicated more visibly to the customers of Etelä-Karjalan Liikuntakeskus.

There is a clear value barrier among the customers causing resistance to adopt Suunto Fitness Solution, and this barrier could be broken by making sure that Suunto Fitness Solution's amenability for change is good and by doing some product development to create superior performance value compared to the existing alternatives (Ram & Sheth, 1989). Amenability for modification is one of the most important characteristics of any innovation because when an innovation faces consumer resistance, it needs to be modified by the firm to suit consumer needs better and to reduce the resistance (Ram, 1987). When there is a mass rejection of an innovation, as might be said about Suunto Fitness Solution at Etelä-Karjalan Liikuntakeskus, then the responsibility of the manufacturing company is to modify the innovation appropriately and re-submit it to the market (Szmigin & Foxall, 1988). The modification to be made depends on the cause of

the resistance (Ram, 1987). Amenability for modification is also related to the economic risk in a sense. For some of the interviewed customers Suunto Fitness Solution is relatively expensive and this causes an economic risk. In these cases customers tend to wait for a new generation of products with a better performance-to-price ratio (Ram & Sheth, 1989), and this is what they should be given by modifying the system to fit the customer needs better, if possible. The second strategy to break the value barrier is to reduce the manufacturing costs of the innovation and pass on the savings to the customers, in other words, try more effective pricing (Ram & Sheth, 1989). For Suunto Fitness Solution, the most difficult problems that affect the perceived value of the system are lack of relative advantage, especially compared to a regular monitor, financial costs for the customer that are seen as too big, and technical problems. These barriers need to be broken by making the system even better than it is, and by cutting the costs, if possible. This includes reconsidering the price, making the benefits more visible, and solving the technical problems.

There is a usage barrier among customers for adopting Suunto Fitness Solution, especially for those who already have a monitor and are satisfied with it. For these customers, Suunto Fitness Solution conflicts with usage patterns of competing and well-established brands such as Polar's heart rate monitors. To overcome this barrier, there is the strategic option of developing a system perspective to marketing the innovation, meaning interaction with other products used and other activities performed by the customer (Ram & Sheth, 1989). This has already been the case to some extent since Suunto Fitness Solution is, at some points, integrated as a part of the training experience that a customer gets when going to the club, and regular Suunto heart rate monitors are sold at the club as well. However, the instructors need to be more active and use Suunto Fitness Solution more to establish it as an everyday part of working out. Not having the system in all fitness halls or at the gyms is also an obstacle for Suunto Fitness Solution's integration in the system and one of the interviewed customers also mentioned that at the club where she used to work out during the summer, Suunto Fitness Solution was everywhere from the gym to all the fitness halls. At that particular club, Suunto Fitness Solution is much more successful than at the focus club of this research, which might be partly because of the successful system integration.

There are several factors that support the idea of adding the trialability of Suunto Fitness Solution in the context of the fitness club. First, some risk barriers came up in the customer interviews, especially economical risk and functional risk. One strategy to reduce the risk barriers is to offer the innovation on a trial basis to potential customers (Ram & Sheth, 1989). Trial is a good option also in situations where the innovation creates change in the potential customers' daily routines, which creates resistance (Ram & Sheth, 1989). This is the case for Suunto Fitness Solution as well since it requires learning a slightly different way of working out. Some lack of trialability as an individual reason for not adopting the system also came up in the interviews, and the opportunities for trial need to be improved to decrease consumer resistance (Ram, 1987). Adoption requires experience-based product/service evaluation prior to purchase decision (Antil, 1988). The innovation has to be readily available for trial, purchase, and servicing, and the buyer must be informed of the benefits and persuaded to try it (Day, G. & Schoemaker, P., 2000, 131). The time that a trial requires is an important factor as well since the shorter the time frame required to trial, the more positive relation occurs between trial time and probability of adoption (Conway & Steward, 2009, 158). Also, those customers who first use an innovation on a trial basis reevaluate the innovation based on their own experiences as a customer before reaching a decision to buy and adopt it. It is also important to remember that not all customers use the product or service in a similar way. (Antil, 1988) Consumers will use trial as a means to gain experience about the innovation prior to the buying decision.

Based on these notions and the interviews, the trial needs to be made easier and less time-consuming and the customers need to be persuaded to try Suunto Fitness Solution more. They also need more trial opportunities. In practice, one option is to consider offering a trial-use plan with option to buy (Kotler, 2006, 659). Offering free belts to customers, maybe in the form of having a campaign, during which in turn of getting a free belt, a customer needs to sign a contract of using Suunto Fitness Solution for a specific time period, might be a solution for this problem. This would most probably increase the amount of users and help create the critical mass that is needed in order to make Suunto Fitness Solution a mass product/service at the club. Even if there have been trial periods already, there was clear confusion about the timing of the trial and other practical

problems, and another trial period might be necessary. By informing both the customers and the instructors about the trials, and making them as well-organized as possible, more customers would use the system at least on a few classes, and this would help them see the benefits of using, as well as the benefits of having more participants that show on the screen since these are the benefits that do not yet seem clear to all customers based on the interviews.

Another strategy to lower the risk barrier besides trial is a marketing communication strategy, which means that experts are asked for testimonials and they objectively evaluate the innovation (Ram & Sheth, 1989). Here, the personal trainers and instructors play an important role again and work as opinion leaders for the customers. For getting more objective points of view, some experts outside the club could be asked to give lectures about Suunto Fitness Solution not only for the instructors but for the customers as well in the sense of informing the customers about the benefits and the different ways of making most of the system.

Lack of marketing, which in this case refers mostly to marketing communications, was mentioned in many interviews. Suunto Fitness Solution is still in a very early stage in its life cycle at Etelä-Karjalan Liikuntakeskus, and the earlier the innovation is in its life cycle, the greater the effectiveness of marketer-controlled propagation mechanisms in reducing innovation resistance. Propagation mechanisms, which involve direct and personal contact with the consumer, such as word-of-mouth and opinion leadership, are more effective than those, which involve indirect contact with the consumer in reducing innovation resistance. (Ram, 1987) Again, the role of instructors and the most innovative customers as opinion leaders is an important factor. The characteristics of propagation mechanism will have an impact on innovation resistance as well; clarity, credibility, informativeness and perceived source attractiveness are all propagation mechanism characteristics that lower innovation resistance (Ram, 1987). Based on the interviews, there have definitely been problems with the clarity, credibility and informativeness of the used mechanisms, which, based on this point of view, might have caused resistance among the respondents.

Based on the diffusion theory, each of the adopter groups needs to be approached with a different type of marketing plan if a firm wants to move its innovation through the full product life cycle (Kotler, 2006, 660). In order to successfully launch an innovation, an organization needs to identify and interact with three key adopter groups, innovators, early adopters, and early majority (Conway & Steward, 2009, 159). Secondly, organizations need to be aware of the various attributes of an innovation that may impact its rate of diffusion, particularly in relation to user perceptions of its relative advantage over existing alternatives, user perceptions of compatibility with prevailing needs and values, user perceptions of the complexity in understanding or using the innovation, the degree to which the innovation can be tried, and the degree to which the benefits of the innovation can be observed by users. After the evaluation of these attributes, the design of the innovation needs to be in line with them, in other words, an innovation can be designed to influence the diffusion process. (Conway & Steward, 2009, 159-160)

In effort to gain customer adoption, it is important to focus not only on the first purchase or trial, but also on the consequences and confirmation stages of the adoption process. Also, it is extremely important to pay attention to the circumstances under which the product is used. When launching a new product, it has to be remembered that a variety of behaviors may result from the purchase, and that consumers may use the product in many different ways. Providing customer assistance at the consequences stage can help to ensure optimal product implementation and satisfaction. This requires, however, that the marketer knows very specifically how the product will be used. For example, making the customer aware of complementary products and services can facilitate proper implementation. (Antil, 1988) For Suunto and the fitness clubs, this can mean extra profits as well, since the company is able to offer many complementary products and services for Suunto Fitness Solution, starting from regular heart rate monitors.

As a conclusion, the most important barrier for adopting Suunto Fitness Solution among the customers and the instructors of the chosen fitness club is the overall lack of information, including both lack of training and lack marketing communication. Education needs to be offered for both the customers and the instructors to raise awareness not only about Suunto Fitness Solution but also about heart rate based training in general. To

increase the perceived value of Suunto Fitness Solution among customers, the price needs to be re-evaluated if possible, and the time and effort of trial and purchase need to be decreased to reduce the overall tangible and intangible costs. At the same time, the numerous benefits of the system need to be recognized and communicated effectively to the instructors and the customers to create a better relationship between the costs and benefits, resulting in an increased value perception. Instructors, as well as personal trainers and sales force need to be encouraged to recommend and sell the system to their customers, and they need to be given the right tools to do that. Even if the situation with Suunto Fitness Solution is not very good at the chosen fitness club at the moment, it seems based on both TLC and diffusion theories that the system is still at the beginning of its life cycle, in which stage it is very common that not many customers have yet adopted it. However, there is a lot of potential in the system and the overall attitude of the customers and the instructors is positive towards it. The managerial challenge is to actualize the huge potential of the system, and hopefully this thesis has given some ideas on how this could be done.

### **8.1. Limitations and suggestions for further research**

This research was conducted merely based on user experiences. The points of view of both Suunto and Etelä-Karjalan Liikuntakeskus managers were not included in the research at any stage due to time and space restrictions, even if they would have made the case even more interesting. In the future research, the firm level should be taken into account as well to form the whole picture of the case, since this research only presents one side of a larger issue. The amount of the interviewed customers and instructors was very limited as well and interviewing more people might have given a more holistic understanding of the issue. There was a clear limitation of interviewing only the non-adopter customers in this research, but in another research the adopters could be taken into consideration as well.

The system is still in its infancy at the chosen fitness club, which means that this research can only give some perspective on why most customers have not yet adopted it. In a few

years of time, it would be very interesting to do a follow-up research to find out whether Suunto Fitness Solution has followed the classical TLC path at the fitness club or not. This would be a great opportunity to find out if the interviewed customers of this research have adopted the system at that point. Since the system has such great potential, its growth would be an interesting story to tell in the future. This research is also limited to the level of one, individual fitness club and does not give a comprehensive view about the situation on a larger scale. In the future, it would be interesting to compare different fitness clubs around Finland to find out why the customers of other clubs have adopted the system differently than the customers of Etelä-Karjalan Liikuntakeskus. Another extremely interesting research idea would be to compare the adoption of Suunto Fitness Solution in different countries to see if cultural differences affect adoption behavior in the context of fitness clubs.

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