DO YOU KNOW YOUR CUSTOMERS? DO YOU LOVE THEM? REEVALUATING VALUE CREATION FOR CUSTOMERS THROUGH BUSINESS MODEL INNOVATION

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Abstract - What customers want is one thing, but what they actually need and what they desire is something else. In this paper we define existing customer needs as something that customers know and are aware of, can express, and new customer needs as something that customers do not yet know and are not yet fully aware of. Just like in a Johari window. Companies usually go for the former because the latter is more difficult. Particularly when the customer desire is more psychological in character. Business models are valuable innovation tools because they can turn even an old and less novel technology into a successful innovation, but as stated by Chesbrough, at the heart, a business model performs two important functions: value creation and value capture. However, how can you create value when customers don't know what they actually need? When they cannot express what they actually desire? Maybe a deeper interaction is required, interpreting the customer's needs, reading between the lines, inferring what is going on underneath the surface, and collaborative prototyping. This study was based on an exploratory, inductive research approach influenced by grounded theory, studying three Swedish technological companies: Axis, HMS and Sectra. Using grounded theory coding techniques, a typology of seller and buyer needs was created based on four categories: unconstrained needs, undoubtful needs, unconventional needs, and uncertain needs. The results show that depending on which category the company resides, the typology can help managers decide when it is appropriate to listen closely to customers, and when it is not. When they want to fulfill existing customer needs and when they want to fulfill new customer needs. However, discovering new customer needs requires close interaction with customers. Especially when you want to discover not just what customers know that they want, but also what they do not yet know that they actually need. Intimacy is needed when you really want to come close to customers and really want to explore and understand their deep desires.

Index Terms - Business model innovation, customer desire, typology of buyer and seller needs, value capture and value creation.

I. INTRODUCTION

Axis Communications AB is a Swedish technology company working in the video surveillance industry. Axis employed almost 2,900 people and reached 8,603 million SEK in sales in 2017. HMS Networks AB is a second Swedish technology company working with industrial communication. HMS employed 542 people and reached 1,183 million SEK in sales in 2017. Sectra AB is a third Swedish technology companies working within medical technology and encrypted communication systems. Sectra employed 479 employees and reached 1,266 million SEK in sales in 2017/2018.In this modern industrial age where the internet plays such an important role, where the internet is evolving towards the internet of everything [1], many companies are focusing on the Internet of Things (IoT). Industry-related companies however, focus on the Industrial Internet of Things (IIoT), where they are trying to connect industrial machines and devices to the internet, believing that this is what their customers want or need [2]. HMS are also focusing on the IIoT, as are many other companies. IIoT offers new opportunities for many companies. HMS even argues that the IIoT is where they will find their next "big thing". Since 2017, HMS is involved in a project named "Self-Monitoring for Innovation" (SeMI). SeMI is a project led by researchers from Halmstad University and performed in collaboration with different synergy partners from the industry. The purpose of HMS' sub-project concerns collecting data from industry machines and devices, and through a combination of semi-autonomous learning and expert knowledge in a joint human-machine learning effort, develop tools for malfunction diagnostics, fault prediction and costs and productivity loss minimization. This article however, is not about the SeMI-project. Nevertheless, during different project meetings, we asked our partners why they joined the project in the first place, but they could not articulate the exact reason. They told us that the project had potential, and that having tools for self-monitoring would give them competitive advantage. However, their answers were more anticipations rather than facts of certainty, because no one knows just yet what the results of the SeMI-project will be. And this was an example of how people sometimes follow their emotions when making decisions because they cannot articulate exactly what they truly need. "One of the reasons for the product failures in the market is due to the inability of the manufacturer or the operations functions to implement activities such as product design according to customer requirements. Therefore, it is important for [any] organisation to design

product[s] or services that meet customer requirements. It is argued that the whole organisation needs to agree and work on achieving the customer requirement" [3, p.67]. How do you do that? By asking customers what they want and how much they are willing to pay for it. But the major question is, how do you ask someone about something that they do not yet know how to express because they do not yet know themselves what they will need in the future. How do you openly define their headache? How do you understand what customers themselves are not aware of yet? Thus, the "customer's willingness to pay for a new product [is] the very core of product design. Most companies postpone marketing and pricing decisions to the very end, when they've already developed their new products. They embark on the long and costly journey of product development hoping they'll make money on their innovations, but not at all knowing if they will" [4, pp.8-9]. And you cannot determine these things without asking customers about them or by other means exploring the customer side. This is also at the center of business model innovation, because "a business model performs two important functions: value creation and value capture" [5, p.12]. A business model "defines the way a company generates value (value creation) and how it captures some of this value as profit (value capture)" [6, p.30]. Creating and capturing customer value is therefore the most important purpose of any business model [7]. But while we are discussing the need of talking and listening to customers, we also need to listen to Christensen (1997) who argued that companies fail because their managers listen too much to their customers. But Christensen (1997) did not mean that you should never listen to customers, because one of his statements was that "[t]here are times at which it is right not to listen to customers" [8, p.xii]. However, what this does show is that not all customers are ready to explore their unknown needs. Some are afraid, and some are reluctant to take on change and of the consequences this might bring to their future state and needs. Some lack knowledge, and some hide their inability to lead their companies into the future. There are reasons why many mature companies fail to develop disruptive innovations themselves.

Nevertheless, this still means that we had three different aspects to consider for this study: That 1) sometimes companies should not ask or listen to customers in order to create new value that customers do not yet know that they want or need, or that 2) sometimes companies should ask or listen to customers to create customer value, but then again 3) creating customer value can only occur if customers actually know what they want or need. Creating customer value thus seems to be a very complex undertaking. When will you know when it's time to ask or listen, or not? And if customers cannot tell you what they want and need, what will be your strategy to explore the unspoken and untold story of their headache? Maybe you should ask the customers of your customers and follow the value chain and explore the experiences of others as the focal point of exploring customers and their unknown needs?

The purpose of this article is to explore the three Swedish technology companies Axis, HMS and Sectra, and to understand how their business models were developed following the logic of understanding their customers' existing needs and future needs, in order to understand how costumers, managers, and employees interpret value creation and when they consider asking or listening to customers is or is not important.

II. RESEARCH METHOD

In 2008, Easterby-Smith, Golden-Biddle and Locke argued for the importance for qualitative research to both acknowledge and adhere to the methodological pluralism in the field. They argued that qualitative researchers should explain their ontological and epistemological positions and put emphasis on the qualitative features of their research [9]. For this research, certain details need to be explained for this study as well.

Since we are social constructionists, we argue that people create their own cognitive constructions that represent how they interpret their social realities [10]. Thus, to capture how people interpret their realities, an inductive research approach was selected [11-12], which was influenced by grounded theory [13-15]. During the study, 30 semi-structured and open-ended interviews were conducted with both managers and employees from three different Swedish companies: Axis, HMS, and Sectra. During these interviews, general questions were asked about their business model(s) and how they worked with customers. These interviews yielded a total of 103 A4 transcript pages. An additional 96 A4 pages were collected from e mail conversations. Furthermore, 140 historical documents were collected and studied, including annual reports and descriptions of their different business models. Using different sources of data, including archival records, is usually considered to be the best practice for such case studies [16]. The grounded theory methodology for data analysis was used to code all the interview transcripts [13]. Open coding was performed followed by selective coding according to the tenets of grounded theory. The categories that emerged were related to discovering customer (seller) needs and creating value, as well as fulfilling company (buyer) needs and capturing value. After reworking the different categories, four main categories emerged: unconstrained needs, undoubtful needs, unconventional needs, and uncertain needs. Once open coding was completed, selective coding was started. At that point, more specific questions were asked during interviews and e-mail conversations about the four discovered categories. Afterwards, a typology of seller and buyer needs was created, showing how companies move between the four categories.

III. FRAME OF REFERENCES

Business model innovation have received high attention during the past 20 years [17-21], but it is a concept that goes back as far as to early discussions on product life cycles [22].

Value creation is a central aspect of business models as well as business model innovation. Business models therefore concern "where and how the new product or service will change the lives of its consumers" [23, p.130]. Value can also sometimes be interpreted as more complex. Bowman and Ambrosini (2000) "argued that 'value' takes the form of: perceived use value that is subjectively assessed by the customer who uses consumer surplus as the criterion in making purchase decisions; and exchange value, that is the price paid for the use value created, which is realized when the sale takes place" [24, p.14]. "Individuals create value by developing novel and appropriate tasks, services, jobs, products, processes, or other contributions perceived to be of value by a target user (e.g., employer, client, customer) relative to the target's needs and when the monetary amount realized for this service is greater than what might be derived from an alternative source producing the same task, service, job, and so forth" [25, p.183].

"There was a time, not so long ago, when 'innovation' meant that companies needed to invest in extensive internal research laboratories, hire the most brilliant people they could find, and then wait patiently for novel products to emerge. Not anymore. Today, innovation must include business models, rather than just technology and R&D" [5, p.12]. We argue however that innovation is like a coin. On the one side you might find technology, products and services while on the other the commercialization via business models. Like a coin, you need both sides. From our point of view, it is not a question of one side including the other. Rather, it is that both sides complement each other, but still need equal focus. After all, no one can make innovation happen on its own.

"A business model is an organization's approach to generating revenue at a reasonable cost, and incorporates assumptions about how it will both create and capture value" [26, p.263]. Thus, due "to a business model's holistic perspective on ideas, it aims to understand not only what kind of value can be created for customers with a certain project but also how this value can be captured and what the corresponding value architecture looks like" [27, p.410]. Business model innovation can therefore sometimes be a valuable tool for companies to use in their process of creating innovation. The right model can make any new entrant replace any market leader as the dominant player on the market. "In 2001, Apple began introducing a series of successful new products and services–the iPod, the iTunes online music service, and the iPhone–that propelled the company to the top of its industry. But the shift was not only a matter of product innovation. Apple's success resulted from its ability to define a workable business model for downloading music–something that had eluded the music industry for years" [28, p.1].

Nevertheless, creating value is still the most important aspect of any business model and in order to do that, you need to be close to your customers. But is it possible to think that you are close to your customers without actually being close to your customers? It all falls down to its definition, of what being close to the customer actually means. Sometimes employees in a company argue that they develop what their customers want and what they pay for, but they also need to discover more about what their customers actually need, and perhaps what they do not yet know that they need.

"You may have heard the famous saying by Henry Ford who claimed that if he asked his customers what they wanted, they would have said faster horses. This opens my reflection that we as customers do not know what we want. We are reluctant to admitting it but in all seriousness, we would love if someone told us what we wanted and needed. … Do people coming to Hawaii on vacation know that they want to have a photoshoot in mermaid costumes? They probably do not. … Often, business owners get it all wrong. They overwhelm us with options and ask a lot of questions. They should be more suggestive and intuitive, personalizing and narrowing our options for us. … Usually we make business owners aware of what's important to us but they're too busy telling us their rehearsed spiel proudly letting us know about the discounts and multitude of options they offer. It's simple, when we shop, all we want is to be read and understood" [29].

Thus, sometimes customers do not know what they want until they see it. For that reason, selling existing products to existing customers or developing new products that fulfill existing customer needs is easier than exploring the headache of new customers or identifying new customer needs, because it is often easier to sell additional products to existing customers than to look for new customers with new needs [30]. However, sometimes in order to understand the customer, a company needs to both know what the customer wants and what the customer needs, now and in the future. What customers want reflects their existing needs, of what they know and are aware of that they need. New needs, on the other hand, are not always known to customers until they learn about them. New needs reflect a dormant, perhaps unconscious desire, that customers are either not always aware of or they suspect but cannot articulate, but once they learn about them, they know that this was what they needed. It may be true that customers are most often driven by what they know that they want, rather than any unmet needs, because it is easier to articulate that you want something when you know

what it is. But that does not mean that you should not try to discover what customers are not aware of that they need, especially when it comes to innovation. Customers did not know that they wanted the iPod or iPhone before Apple released these products [31], but once these products were on the market, customers knew that they represented exactly what they needed. The key point in Apples iPhone was that they understood the underlying, the unspoken desire of people [32], not related to phones but more to communication needs and the need for social status.

The customer needs are not always related to technology or products. In the consumer area the needs can be of many different kinds. Many times, they are subtle, and psychology related. Thus, through the process of exploring and understanding customers, new needs become existing needs. In other words, existing customer needs can be defined as something that customers know and are aware of, while new customer needs can be defined as something that customers do not yet know and are not yet fully aware of. Just like in the Johari window model, which shows that there are things that are known to self and things that are not known to self, and there are things known to others and there are things not known to others [33-34]. From that perspective, even Steve Jobs said that "A lot of times, people do not know what they want until you show it to them" [35]. The challenge to suppliers and developers is to explore the unknown, the untold, and the hidden needs of their customers. Sometimes these needs are unknown to all involved parties but still no less desired.

"The most successful product innovators we know start by determining what the customer values and what they are willing to pay, and then they design the products around these inputs and have a clear monetizing strategy that they follow through with" [4, p.9].

Ramanujam and Tacke (2016) therefore argues that the reason why all products do not become successful innovations is because "companies do not examine which features are important to the customer, and which are only important to the inventor" [4, p.xi]. Thus, their argument relies on interacting with customers and finding out what they want which they cannot yet put into words, because while value creation is the most important aspect of business models and business model innovation, learning to capture customer needs, when customers cannot articulate their needs in of key importance. It's not just about listening to what they say. It's about going beyond that.

IV. RESULTS and DISCUSSION

There are two ways to go. One is to find the right customer for your technology and products that you have on the shelf. The other one is to explore customers' needs and to deliver solutions to their needs, problems or headaches.

A. Finding the right customer

"We had a product on the market that we called StorePoint, which first included our CDROM-servers that once were popular, and then we had an idea for developing a disk drive server, where we wanted to connect disk drives to a network. We had some of these disk drive servers on the market, we experimented with them, and sold a few as well, but we never found the right market for these products. And after some time, we simply divested that business. But we worked on this until the early twentieth century. But some businesses were started in Silicon Valley around the same time as we made our disk drive servers, that based their business on the exact same idea, and some of them have become extremely successful. They found the right customers for their disk drive servers while we did not. One of them was called Net Appliances back then, today NetApp." (Per Ädelroth, Vice President of Operations, Axis AB, 2017-08-18)

Not every attempt to create innovation will turn into a success. Axis experienced that when they started developing their disk drive servers. This product did not become an innovation for them. It started in 1996/1996, peaked in 1999/2000, and declined until 2004 before it was divested. However, what did not succeed in the long run for Axis, became a major innovation for NetApp. NetApp, Inc. is today an American multinational storage and data management company, with its headquarters in Sunnyvale, California. It was founded in 1992 and has been ranked by the Fortune 500 ever since 2012, with a revenue in 2016 of 5.546 billion USD, far surpassing Axis' revenue that year of 7,386 MSEK (approximately 0.927 billion USD). Thus, it shows that not all potential innovations, and attempt of diversification, may succeed, even if there is merit in the idea itself. Not all companies are able to find the right customers from the start either.

"EMC Corporation is another example. We experimented a lot in the past, but not everything succeeded either. For example, we developed something like a disk drive server, where Axis had a vision to build what is now called a network-attached storage (NAS), which has an enormous market today, but it did not exist back then. And yes, you can always ponder what could have been, but we started something there which others made into a huge success, even though it never became anything for Axis. We did not find the right customer for it. Nevertheless, this was a project that we had, and it has become a huge market today, just not for us. We even tried some RAID-1 solutions too back then. We were experimenting, but we did not find the right path." (Per

Ädelroth, Vice President of Operations, Axis AB, 2017-08-18)

Sectra's definition of the "right" customer, is finding one who had certain headaches that needed solving, and Sectra having the capability of solving those headaches. But from this perspective, all three companies, Axis, HMS and Sectra, became successful because they all created solutions that solved customer problems before customers knew what they actually needed. When HMS marketed their Anybus during conferences or customer meetings, they tried to explain to their customers that in the near future, they would need what HMS' products were offering, and their customers soon realized that "HMS are right, this is exactly what we need".

Thus, finding the right customer was of key importance for Sectra, and one of the reasons why they succeeded. The product itself was of less importance because it does not matter how great the product actually is if you do not find any customers who are willing to pay for it. Finding the right customers is also related to monetizing around the price [4], which essentially means listening to customers and developing what they are willing to pay for.

B. Knowing when and when not to listen to customers

"What is very common for most technology-based companies, is that they sit on very advanced technology that they are proud of, but they do not have a customer for whom that technology can solve a problem. And if they are lucky, they learn this fast while they are young. You may have the world's best solution, but often you do not have a problem for it to solve. But when you mature as a businessman, you learn that the most important thing is to have a good customer, because you can always learn how to solve all the problems the customer may have. When it comes to our defense projects, it all started because we got a project from the Swedish Armed Forces.

The customer wanted us to do something for them, instead of us wanting to do something for the customer." (Torbjörn Kronander, CEO of Sectra AB, 2017-08-14)

What Torbjörn Kronander is actually describing are two set of innovation models: market pull and technology push [36]. The market pull model was made to show the importance of the market, or the customer, as a source for new ideas for the company, thus making the company's own R&D to be of less importance. The technology push was made to show the opposite. Nevertheless, it also puts much more value on listening to customers.

Thus, when Sectra started out, they were first technology driven. They offered advanced projects for smart heating regulation systems for apartment buildings and private homes, equipment for press photographers, communication systems for monitoring air traffic, not to mention national security and data cryptography as well as medical image management. Then they realized that they needed to focus on what customers wanted to buy from them, but in order to do so, they needed to start listening more carefully to their customer needs. That objective therefore implied switching from being technology driven to becoming customer driven instead. By switching they learned which of their customers were the right customers for them, and that is how they learned that secure communications and medical imaging IT was their core businesses.

HMS too found the industrial communication industry which became their core business because they were customer driven [37]. And Axis experienced the same thing.

Christensen and Bower (1996) argued that companies that are industry leaders, who listen to customer needs and develop technologies of every sort, even radical ones, can still be overtaken by new entrants. This happens because these new entrants develop technologies which in the beginning are not of high value to existing customers. However, these new technologies, "which initially can only be used in emerging markets later can invade mainstream ones, carrying [new entrants] to victory over established companies" [38, p.197]. Christensen and Bower (1996) argued that these industry leading companies "listened astutely to their customers. Yet they still lost their positions of leadership" [38, p.198]. Christensen and Bower (1996) argued that the reason why these companies lost their position, was that they listened "too carefully to their customers – and customers place stringent limits on the strategies firms can and cannot pursue" [38, p.198].

However, data from Axis, HMS and Sectra show that companies should listen to their customers, even though Christensen and Bower (1996) were arguing for the opposite. Therefore, as our empirical data was coded and conceptualized, it resulted in a typology of seller and buyer needs (see Figure 1). 'Human need' is a very complex concept [39], and the purpose of the typology in Figure 1 is only to explore, from an innovation perspective, when listening to customers is crucial or not, and how listening or not listening to customer needs can co-exist.

This typology of seller and buyer needs (see Figure 1) show how companies switch between periods of focus and periods of diversification. During periods of focus, mainly undoubtful and uncertain needs are of interest, while during periods of diversification, mainly unconstrained and unconventional needs are of interest. As companies switch between these two periods, the needs of sellers and buyers sometimes change, in the direction shown by the arrows in Figure 1.

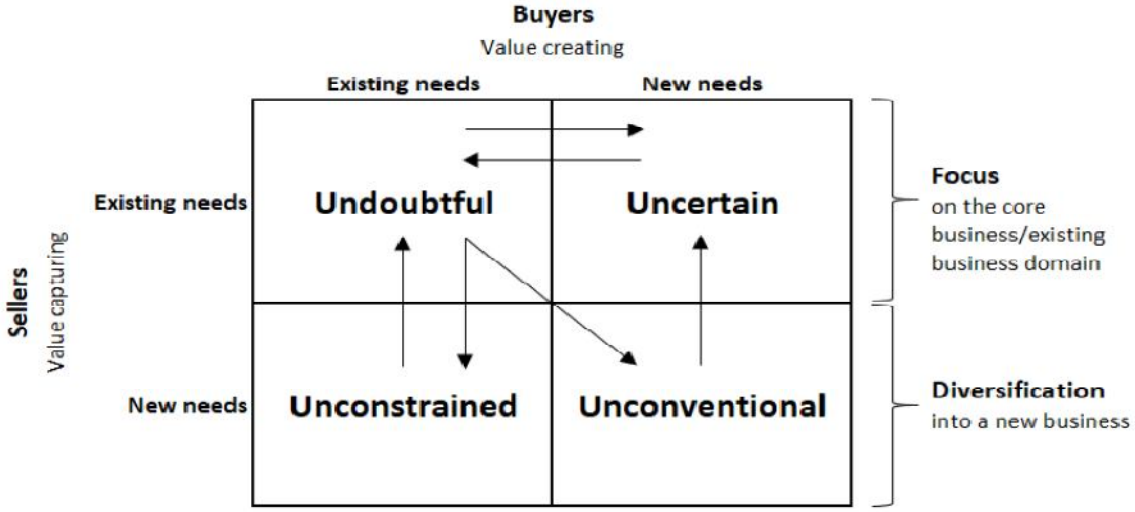

Figure 1: A typology of seller and buyer needs consisting of four main categories.

This typology relates to the classic division of a business model's focus into value creating and value capturing [24, 40], since both of them incorporate both new and existing needs that represent either captured value for the seller or created value for the buyer. Another model that this typology resembles is the Johari window [34].The "undoubtful" category resembles the "arena" when the seller knows what the buyer wants, and they might even be in agreement. The "uncertain" category resembles the "blind spot" where the buyer does not really know what it needs, but in this typology, the seller only believes that he/she knows that the seller needs, or he/she hopes that he/she will fulfill the seller's needs. However, if the seller gets stuck in this category and does not move on within a reasonable time, it means that he/she has not found the right customer. If that happens, rejecting to try to fulfill a buyer need that does not exist is the only option, unless the product or service is significantly remade. The other two categories of this typology have a different meaning compared to the Johari window. Another difference is also the direction. The main direction of the Johari window is from "self" to "others", while the main direction of this typology is reversed, from seller to buyer. This typology also relates to diversification strategies and to Ansoff's matrix [41], but they are not overlapping. For example, the "unconstrained" category shows that the seller has created a new product, and with this product the seller enters a new market. Thus, from the seller's perspective, this counts as diversification. However, at the same time, the market is not new from the buyer's perspective, which means that they buyer is interested in the product and starts buying it. In time, probably short time, the market will become known to the seller, and the seller will move from the "unconstrained" category to the "undoubtful" category. Being in the "undoubtful" category, the seller will be within its core business, and be able to focus on it to make money. Another example is that if the seller creates a new product for a new market, which means diversification once again, if the product is developed for a market that is also new to the buyer, then the buyer may feel reluctant to buy the product. In other words, the market is new from both the seller's and the buyer's perspective, and the seller will be residing in the "unconventional" category. In time, if the seller will get acquainted with the market, and the market will become known to the seller, and the seller will move from the "unconventional" category to the "uncertain" category. The market will feel like it is the seller's core business, except that the seller will not make any money here. Why? Because the buyer will still feel that the market is new and be reluctant to buy the seller's products because the product will not fulfill the buyer's needs. Some units might be sold, but "crossing the chasm" [42] will require moving to the "undoubtful" category.

This typology therefore compares both seller's needs with buyer's needs, and because of that differs from Ansoff's matrix [41]. From the seller's perspective, new products and new markets, which means diversification can occur in both the "unconstrained" and "unconventional" category. Also, if the company finds itself in the "uncertain" category, then the company may get stuck there, unless they manage to remake their product or their business model to better fit their customer's existing needs or undiscovered need. If the customer sees the product, and realizes that it's exactly what it needed, but did not know it earlier, then the company will move from the "uncertain" into the "undoubtful" category. If it does not, then it will remain in the "uncertain" category, where profits will remain low until the customer's new needs will change into existing needs. Therefore, this typology and Ansoff's matrix have similarities, but they are not directly compatible. This typology does not focus on new products or new markets directly. Its main concern is managing seller and buyer needs. Its main concern relates to a business model's value creation and capture. A weakness with this typology is that it does not show whether a market change has

occurred or not. If a technology, as shown by Christensen and Bower (1996), starts in a new market, it can be argued that it is affected by "uncertain needs", because the technology is new to this market's customers and the company cannot be sure whether the technology will prevail or not. If the technology then invades the mainstream market and becomes affected by "undoubtful needs" from both existing customers and existing companies, the typology does not indicate that a market switch has occurred, from the new market to the mainstream market. After all, the typology is only a simplification of reality. Its purpose is only to explore when listening to customers is warranted. Also, the directions of company movement between these four categories is shown using arrows in the typology. These are the directions that could be empirically verified, but others may exist.

1) Unconstrained needs

When a company (a seller) starts to diversify into a new market, the market is new to the company. As such, the company has no existing needs, because it does not yet know what will be expected of it. Since the market was not created by the company, it already has existing customers (buyers) who have existing needs. Such a situation occurred at Sectra when they were told that the hospital in the city of Lindesberg did not have any doctors who were able to analyze x-ray images and therefore they needed to send x-ray images by taxi from the city of Lindesberg to the city of Örebro. These customers already had existing needs, but Sectra did not yet fully know what this market would expect of them in the coming years, which is why they had new needs to consider.

"Unconstrained needs" also represent the market pull model [36] because the company is interested in exploring a market that is new to them, which already exists, and listening to customers in that market is the key to discovering what potential that market has. The company can also be seen as unconstrained from limitations at this stage, especially if it is exploring several new markets, and open to fulfilling any customer needs in order to discover their core business. This was true for both HMS and Sectra, who were exploring several different markets before they began to focus on a specific core business. Listening to customers helped them do just that. And as in their case, they first became familiar with their markets, and when they found the one(s) most promising to them, they started focusing and discovering their own needs which began to align with their customers' needs. At that point, the company will move from "unconstrained needs" to "undoubtful needs" and start focusing on existing needs of both the company and its customers.

2) Undoubtful needs

When a company (a seller) has focused on a specific market (core business/business domain) for some time, it will learn what needs its existing customers (buyers) have, as well as discover its own needs. The company's existing needs and the customer's existing needs become aligned. This is the category where the seller also earns most money using existing product fulfilling existing needs.

At this point, some companies are more interested in fulfilling their existing needs rather than discovering any new needs, because those existing needs are aligned with their customers' existing needs, which in turn those customers are willing to pay for to have fulfilled. Short-term gains keep a company focused on their customer's existing needs. While some companies focus on their customer's existing needs, Axis and Sectra are both listening to their existing customers and they are discovering new customer needs. Axis for example has diversified into door controllers, horn loudspeakers, and IP door stations, while Sectra has diversified into offering education. That means that Axis and Sectra reside within the "undoubtful needs" category while selling their existing products, but they also move into "unconstrained needs" or "unconventional needs" when needed.

When HMS created their first Anybus gateway, they were residing within the "undoubtful" category. The gateway however, was not a new product from HMS' perspective, but it was a new product from the perspective of the new customers they captured with it. Thus, what they did was that they introduced an existing product onto a new market, and in so doing they moved from the "undoubtful" to the "uncertain" category, but once customers accepted the product and started to buy it, they moved back to the "undoubtful" category. From their customer's perspective it was a new product, but from HMS' perspective, it was based on the same technology, just targeting a new customer segment, and they did not move beyond their core business or industry.

Focusing on customers' existing needs is also related to what Christensen and Bower (1996) are arguing about when saying that existing companies fail against disruptive innovations because they listen too much to their existing customers. They argued that this becomes a serious problem for existing companies when new companies choose to develop new technologies which are not yet interesting to existing customers. But later, when these new technologies invade existing markets and outperform existing technologies, they disrupt existing companies. In other words, new companies develop new technologies based on "unconventional needs", which mature companies are sometimes unwilling to do, while they in turn sometimes evolve into disruptive innovations.

"Undoubtful needs" also represent what is known as "early majority" and "late majority" customers [42] because existing customers are certain of what they want and what they are willing to pay for, while companies at this stage have already learned of their own needs, which have been aligned with their

customers' needs. That alignment already represents a certain level of success that the company has reached by adapting their technology and offering to what customers claim they need. Of course, when existing customer needs are replaced with new customer needs, when new technologies invade mainstream ones and new companies become victorious over existing companies, these existing companies sometimes need to start over with "unconstrained needs" or "unconventional needs", unless they bankrupt of stop existing for some other reason.

Nokia is an example of a company that for many years has been able to diversify into new markets, while keeping their existing markets as long as they were considered core businesses. In the 1890s, Nokia was running a large pulp factory, a large paper factory, and other industrial facilities, but they still diversified into electrical power. During the 1960s, when Nokia was known for toilet paper, rubber boots, Hakkapeliitta winter tires, and electrical cables, they still diversified into electronics, which later led to wireless communication [43]. Innovative companies like Nokia, who dare to diversify into new markets repeatedly, are able to go from "undoubtful needs" to either "unconstrained needs" or "unconventional needs". However, doing so is probably more rare than common, since most mature companies focus on their core business and fulfilling existing customer needs and that is why they are later pushed aside by new companies (new entrants) that introduce disruptive technologies [8]. Since the "undoubtful needs" category is where seller with existing needs focuses on listening to customers with existing needs, if companies want to discover what customers need that they do not yet know that they need, then they need to start focusing on the "unconventional needs" category. Of course, their main business focus will remain within the "undoubtful needs" category, but they will have to learn to focus on the "unconventional needs" category as well.

3) Unconventional needs

Companies that start out with "unconventional needs" usually do not listen to their customers. They can however be very technology driven. When they have created their new technology, they can start listening to customers, and then discover whether that new technology is actually what their customers are willing to pay for or not. If they are not willing to pay for their new technology to some larger extent, e.g. beyond some initial purchases, then the company will know that they are in fact in the stage of "unconventional needs". Companies who are in this stage often believe that they are in the stage of "unconstrained needs". That is why they sit on technologies that they are proud of, but do not have any customers who wants to buy them. And they do not realize that their products need to be changed to fit their customers' needs, not the other way around [44]. They forget to listen to their customers and thus confuse "unconstrained needs" with "unconventional needs". In addition to that, if they continue to invest in their technology, without changing it or making it fit better with their customer's existing needs, then they will only move up to the stage of "uncertain needs", all the while their profits will remain low. Listening to customers is therefore the key to learning whether the company is in the stage of "unconstrained needs" or in the stage of "unconventional needs".

Sectra for example created several projects in the past. Some of them, like the projects for smart heating regulation systems for apartment buildings and private homes, equipment for press photographers, and communication systems for monitoring air traffic, started out in the stage of "unconventional needs". They were new to Sectra, but they were also new to their customers, who were not willing to buy these products to a large extent. That is why Sectra divested these projects later on and did not make them into their core businesses. But it does not mean that these other businesses could not move over to the stage of "undoubtful needs" after a certain amount of time. Nokia for example is known for being patient and determined, and they often invested in projects that only after a long time moved over to the stage of "undoubtful needs". Companies may also start out with the stage of "unconventional needs" when they create a new technology and at the same time create a new market for it. In time, they will move to the stage of "uncertain needs", and if the market turns out to be successful, they will move to the stage of "undoubtful needs".

"Unconventional needs" also represent the technology push model [36] because the company at this stage is interested in developing new technologies, without learning exactly what their customer's actually need. Google who develop a lot of technologies find themselves from time to time at this stage as well, because not all their technologies fulfill customer existing needs.

4) Uncertain needs

A company (a seller) that diversifies to discover a new market, usually plans to start with "unconstrained needs" and then move over to "undoubtful needs". However, in reality, it does not always happen this way. When Nokia for example began to invest in electronics, it took them many years before this market became profitable for them. "From the late 1950s until the mid-1970s, Nokia's electronics was a cash trap, but years of investment, effort, and intense internal controversy ultimately turned it into a success" [43, p.45]. "In 1980, the electronics unit invested some FIM 180 million in product development – representing 12 percent of all Finnish R&D. By the mid-1980s, these investments had increased to around FIM 400 million. It [took time before] the electronics units became profitable, after seventeen years in the red" [43, p.46]. This means that Nokia started out at "unconventional needs" because the electronics

market was new to them and new to their customers. In time, they moved to "uncertain needs" as they learned what they had to do within this market, but their customers still felt that this market was new to them, and they did not discover what they wanted from this market for 17 years. Nokia's customers were not willing to buy electronics, until finally Nokia moved from "uncertain needs" to "undoubtful needs" and their electronics unit became profitable.

When a company has focused on a specific market (core business/business domain) for some time, and has already discovered its own needs, it can still listen to customers with new needs. If those new customer needs concern a new market, then the company may choose to stop listening to customer's existing needs and start discovering new needs, but some companies prefer to stay within their core business and not take on new customer needs [45-46]. However, if those new customer needs are not related to a new market, then it simply means that the existing market and the existing needs are already known to the company, all the while they are new to the customer. This situation occurred when HMS was becoming a known player in the industrial communication market, and customers were calling them for help. These customers where new to this market, and thus, their own needs were new to them. But HMS' needs were not new to HMS who were already known as experts in the business. "Uncertain needs" also represent what is known as "innovators" and "early adopter" customers [42], because these customers have new needs but they are not yet ready to buy the new technology to a larger extent. Companies in this stage are therefore not able to reach success within their business. To become successful, they need to cross over to "undoubtful needs" where customers know what they want, where their needs are certain to them. However, crossing over to "undoubtful needs" can be compared to "crossing the chasm" [42].

Therefore, is companies are unable to "cross the chasm" [42], then they may get stuck within the "uncertain needs" category. The main reason they get stuck according to this typology is because they are trying to fulfill customer needs that do not exist, and that means that they are not listening to what customers actually need. They are not trying to discover customer's underlying needs, and customer within this square often cannot articulate their actual needs. That's what makes the crossing over from "uncertain needs" to "undoubtful needs" so difficult.

CONCLUSION

"Every company has a business model, whether they articulate it or not" [5, p.12]. A "potential new technology may have no obvious business model, and in such cases technology managers must expand their perspectives to find an appropriate business model in order to be able to capture value from that technology. In fact, it is probably true that a mediocre technology pursued within a great business model may be more valuable than a great technology exploited via a mediocre business model" [47, p.355].

Thus, at "its heart, a business model performs two important functions: value creation and value capture" [5, p.12]. The question is, in order to create value, how should companies interact with customers, how should they ask, listen and learn from customers in order to be able to create a new business model or not? A business model from our perspective, is a static model that represents an existing model at a specific period of time. Business model innovation however, is a dynamic process, that changes an existing model through trial and error, through close customer interaction, and through rapid prototyping, until it results in a new business model. Suppliers have to "[l]isten carefully to what [their] customers want and then respond with new products that meet or exceed their needs" [48]. "If you want to win over customers, appeal to their emotions" [49]. This all sounds nice and good when it comes to the consumer market, but it does not apply to the business market. Or does it? Take Axis for example, where (some of) their solutions focus on provide security through surveillance. Human emotions come into play when people want to feel safe, knowing that Axis' solutions are focusing on safety beyond the normal, to make sure that if something happens, Axis' solutions will provide better interaction with other additional solutions, and together provide instant safety. Take HMS, where (some of) their solutions focus on making sure industry machines and devices are safe, and do not accidentally hurt any human being. Human emotions come into play to make people feel safe around machines and devices on the factory floor when HMS' products are in place. Or take Sectra, where (some of) their solutions focus on taking of patients, especially elderly patients, and therefore, they aim to make healthcare more efficient and to improve the quality of care. Human emotions come into play when they think about their customers' end-customers and aim to make them feel safer when Sectra's products are there to take care of them. "Love your customers" [50] may sound like a cliché, at least from the perspective of the business market, when working in an industry, but what it actually means is, even if you do not have direct contact with the end-customer or end-user, if you focus on their emotions, then you will by default help your own customers to solve their main headaches. And emotions are important for your customer's customers. Intimacy is therefore needed when you really want to come close to customers and if you really want to explore and understand their deep desires. Find out what your customer's customers value, and package your solutions to adhere to their desires, and your own customers will soon see that you actually care about them.

The results of this study show that in a mature market, with mature sellers and buyers, who both focus on their existing needs (placing them in the "undoubtful"

category of the typology in Figure 1), sellers should listen to Christensen's (1997) advice and not listen too much to their key customers in order to avoid letting disruptive innovations take over their industry. It is like when car manufacturers ask their existing buyers why they chose their own car brand. You get the answers you asked for. This is what the traditional focus groups get using traditional marketing surveys. Another strategy is to ask those customers who rejected the brand, or those buying the competitors brand, why they chose to do that. Thus, you have to ask yourself, in which of these two examples are you actually trying to understand your customers' problems and headaches?

Therefore, when a company decides to develop something new, they should ask themselves in which category of the typology of seller and buyer needs they reside. And whether they are focusing on new or existing customer needs versus new or existing needs of their own. In other words, if they are trying to create innovation and/or go through the process of business model innovation, how do they plan to capture the unspoken needs of customers who do not yet know what they actually need? How will they interact with customers on such a level that they can capture not only what they want today but also what they need for the future? While companies sometimes get stuck in the "uncertain needs" category, being in this category offers an interesting opportunity. It offers companies the chance to rethink their offering. To rethink their business model, and to refocus on actually creating customer value by targeting their customer's customers, and their emotions, their main headaches. In so doing, they may get unstuck and move to the "undoubtful" category where the actual money is.

"Success in business today — in the face of constant and rapid change — means giving customers what they need. However, the mistake most people in business make is trying desperately to give customers what they want" [51].Therefore, when focusing on value creation and business model innovation, company managers need to learn to manage what customers know and are aware of (known wants and needs) and what customers do not yet know and are not yet aware of (unknown wants and needs). However, managers usually go for the former because learning about the latter requires much more work.

A. Implications

Managers during their daily business have to balance between fulfilling their own needs and fulfilling their customers' needs. However, customer needs come in two types, "new" and "existing". Fulfilling existing customer needs increases growth and leads to making more money, but it does not lead to discovering new customer needs. Thus, depending on which category in the typology of seller and buyer needs the company finds itself, they can make better decisions on how to move forward, and when they want to focus on fulfilling existing customer needs and when they want to focus on discovering new customer needs. They can decide when it is appropriate to listen to customers, and when it is not.

However, discovering new customer needs requires close customer interaction in order to discover, not just what customer know that they want, but also what they do not yet know that they need. Particularly when the customer desire is more psychological in character. The challenge therefore lies not in listening to customers, but rather interpreting what they are unable to articulate. One way to do it is to explore the needs to their customer's customers and their emotions. Thus, companies need to explore and understand both what their customers say they want today and what they do not say they need tomorrow. For that reason, knowing what category you belong to within the typology of seller and buyer needs, has managerial implications concerning new product development and innovation as well as business model innovation.

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