

# Creation of Customer Value Using Digital Printing in a Dynamic Business Environment

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## Abstract

Digital printing is used most successfully with a differentiated strategy that delivers high customer value when printing short runs or customized printed matters. This qualitative case study of a customer – supplier relationship aims to identify and analyze how digital printing can be utilized as a business tool in the relationship between a service provider and a customer in a dynamic business environment.

The service provider in this case has strategically changed the focus of the company from a production to a service company with the focus on customer contact. Even though the service provider had an advantage on the market, they choose to create disruption since they realized that they could not sustain this advantage forever on their dynamic market. This was realized even though it meant cannibalizing on their former core business – printing.

The study indicates that a hypercompetitive-like behavior is becoming increasingly important to be able to survive in the dynamic and changing printing industry. The industry is today influenced by, and competing with many companies that are not in-industry. By reengineering their products and services and moving from the cost-quality arena to timing and know-how it is possible for the service provider to control the outcome of the industry in a more successful manor.

This study concludes that digital printing is used successfully when the customer's main objective is not to print at all. Printed material will probably not disappear in a foreseeable future and therefore digital printing most certainly will increase its importance as a production technology. In the strive towards a paperless office, digital printing is a natural, convenient and profitable way of producing a non-electronic output is digital printing.

**Keywords:** customer value; digital printing; business strategy; differentiation; hypercompetition

## 1 Introduction

*“Does the manufacturer exist for the consumer or does the consumer exist for the manufacturer?”*

*Henry Ford [1]*

Customers in the digital printing value system do not believe that digital printing technology fully fulfill the demands that they have on their printed material, although there are indications that digital printing is becoming a more and more important production technology [2]. Since digital printing technology has a higher production cost than traditional printing methods for longer print runs, it is important for digital printing houses to pursue a competitive strategy involving differentiation [3,4]. Differentiation is a competitive strategy involving a more

customer-centered approach where the company must try to “*create competitive advantages for its buyers*” [5] to be able to succeed [6].

This is why the main objective of digital printing must be to deliver a higher customer value. The most prominent feature of digital printing is its ability to produce each print in a unique manner, which makes it possible to deliver prints that are changed based on data from e.g. a database, variable data printing, to be used in e.g. one-to-one marketing [7]. Since discarded volumes are small and startup times are short it is also possible to print shorter print runs and print-on-demand, at a low cost compared to traditional printing technology, like offset.

The non-profit digital printing industry consortium [8] has, in the case of the digital printing industry, identified two fundamental economic forces that are connected to successful cases in digital printing – increased effectiveness and increased efficiency. What [8] refers to is the use of documents as a more effective business tool through personalization and the use of more efficient all-digital workflows. Even though variable data printing has a higher potential customer value than print-on-demand, it is on-demand printing that is mostly used by the customers and is also what they value the highest with digital printing [2]. In general digital printing houses are striving towards increasing their share of direct customers, this is done for two reasons – to gain customer contact and to educate them to take advantage of the possibilities of digital printing and to increase their share of revenue within the value system (Figure 1) [3]. Customers that are working directly with printing houses and not via an advertising agency also tend to use more complex service like variable data printing [2].

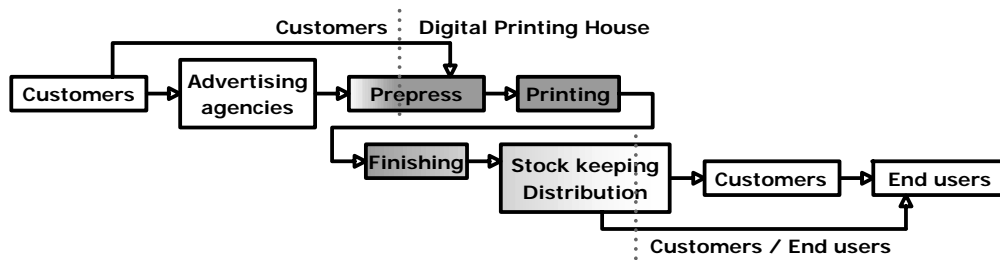


Figure 1: The value system for the printing industry [2].

In the eyes of the customers the printing technology hardly ever matters as long as the end result is as expected. This makes it important for printing houses that choose to work with direct customers to offer a service that in some way is more cost-effective or valuable to the customer. The opportunity to add extra value to a customer’s product opens up when a printing house has control over production technology and product development as well as close customer contact. This is what one digital printing house that has been strategically vertical integrated has accomplished.

### 1.1 Objective of the study

The objective of this case study is to identify and analyze how digital printing can be utilized as a business tool in the relationship between a service provider and a customer in a dynamic business environment.

## 2 Theory

In Porter’s Five Forces Framework [4,9], the bargaining power of the customer is one of the five forces. If an industry, such as the printing industry, consists of many small actors, the products are considered a commodity and switching costs are low [4], the bargaining power of a customer is likely to be high. This is the current nature of the printing industry, as it is today a fragmented industry [10,11] where total production capacity is far greater than demand [12]. It is most certain that this situation has been caused by printing being, in general, undifferentiated

[4]. When buying products or services that have been around for a long time, and are more or less considered commodities, the knowledge among the customers increases which makes their bargaining power even stronger. This generally results in near-zero margin profits in the printing industry [8].

Customers of digital printing houses do not believe that price is an important factor in digital printing [2]. This attitude is most certainly brought about by low prices in the printing industry in general [12]. The bargaining power of customers has been further bolstered by globalization and the use of the Internet to gain information about suppliers and prices [13,14,15,16,17].

### 2.1 Customer Value

Customization of products is becoming more common for both consumers and businesses. Products like Dell's personal computers and heavy trucks from Scania are assembled after being ordered to meet customer specifications. Just-in-time manufacturing (JIT) was introduced by Toyota in the 1960s [18] and is today a common method of production. When working in this way it is important to have everything delivered to and from an organization just when the producer needs the different parts in the production process. With this sort of thinking digital printing is a good option for printing e.g. instruction manuals or advertising material, since it will be possible to postpone the printing of the message and customize the printed material to the produced product. Printing in this way can also eliminate stock keeping. Postponement strategies were first proposed in the early 1950s [19,20,21] states that "*postponement promotes efficiency by moving differentiation nearer to the time of purchase when demand is more certain, thus reducing risk and uncertainty costs*". By postponing the printing of e.g. the instruction manual it would be possible to create customized manuals to the produced customized products.

A purchasing situation arises when a company or a person acquires resources of a different kind from another company. According to [22] purchasing in an organizational perspective can be defined as "*the function responsible for obtaining by purchase, lease or other legal means, equipment, materials, components, suppliers and services required by an undertaking for use in production or resale*". Purchasing can be classified into three orientations – buying, procurement and supply management – dependent on the broadness of the purchasing orientation. When the customer is working towards minimizing the price of a product or service and maximizing quality and availability, the customer is said to follow the buying orientation. Improving the quality of a product or service by cooperating with the supplier in order to reduce the total cost, and not just the price is the main objective in procurement. In supply management the goal is to obtain the greatest total value in close cooperation with suppliers to build supply networks that complete whole business processes of a product or service [23,24].

The speed, richness and reach of the Internet today provides customers with information and makes it easy to identify good offers of commodity products like print [4,25] and in theory a company would always make the right decisions and choose the supplier that could provide the best available offer. However this is not the case in reality since there are always switching costs [4,16,26] even though the Internet has lowered them. In the case of the direct customers in digital printing, the purchasing of printed products are often not a strategic business unit (SBU) in the company which may make it less important to switch suppliers. Other factors such as a long-term relation where the supplier has built a special competence, also raise switching costs.

Earlier research [2,3] shows that customers in the digital printing value system strive towards having a long-term relation with their digital printing houses. Direct customers are interested in outsourcing greater parts of their print production, with has led to a procurement or supply management relationship between the printing house and the customer. Because of these direct customers prefer contact with vertical integrated digital printing houses, just as vertical integrated printing houses strive towards increasing their share of direct customers.

[5] defines two basic mechanisms that are important when trying to increase customer value – lowering customers costs or increasing customers performance. The goal in the digital printing industry may be a little of both. On-demand printing may decrease the cost for stock keeping, discarded volumes and distribution costs. On the other hand when discussing variable data printing the increase in customer value is suppose to come from making a campaign more efficient and e.g. increasing the response rate.

Since there often is a lack of knowledge from the customer side about what opportunities new technology can offer, it is important for suppliers to educate their customers to take advantage of and value the differentiation in the technology. This may also be a way for a supplier to increase the switching cost of a product or service for the customer by offering training and education on a specific solution [3,5].

The generic strategies defined by [4] – cost leadership, differentiation and focus may work well until competitors have copied or outmaneuvered them [27]. The goal of the generic strategies is to obtain and sustain the competitive advantages in the market. In the theory of competitive strategy, sustainability of differentiation depends on continued perceived customer value and lack of imitation from competitors [5]. To be able to continuously deliver value that the customer appreciates, it becomes important to focus on Schumpeterian competition. [28] regarded capitalism as an economic system in continuous change that would die if it became stagnant, “*creative destruction*” is, according to Schumpeter, the essence of the capitalism. [29] describes it as “*in a world of continuous change, companies need to maintain pressure constantly at the frontiers – building for the next round of competition*”. Once a company has created competitive advantages, it is possible to maintain and prolong these advantages by strategic acquisition of resources and capabilities.

## 2.2 Resource Based View

The resource based view of the firm (RBV) [29,30] was the natural extension of the Porter framework and became dominant in the 1990s, and this marked a shift away from the predominant market based models, like Porter’s generic strategies.

Resources cannot be valued alone, but have to be put into a market context. [29] describe three important market forces that are necessary to consider in order to determine the value of a resource, service or product – demand, scarcity and appropriability. It is where all these meet that we have a “*value creation zone*” (Figure 2). To constitute a real value all these fundamental market forces should be well represented, but “*resources are only valuable if they meet customers’ needs better than those of their competitors*” [31]. By providing value based on resources that are hard to copy it is easier to sustain a competitive advantage. This is however harder and harder to accomplish [32,33].

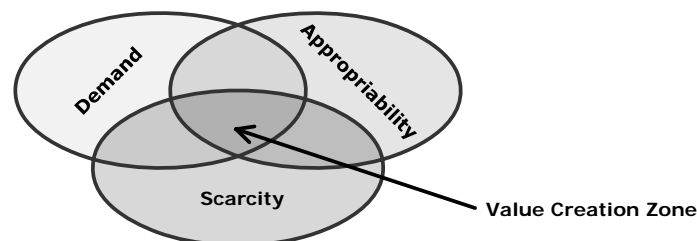


Figure 2: Demand, Scarcity and Appropriability determine the value creation zone [29].

The value creation zone is not static over time as the demand, scarcity and appropriability of a resource are factors that change. Unfortunately, in digital printing both demand and appropriability have historically been low and scarcity is declining as more and more printing houses acquire digital printing equipment. However, today the demand is slowly increasing but

the ability to capture the value (appropriability) of the printed product is still lacking since print is regarded as a commodity product. Although in combination with other resources the appropriability of digital printing may rise. For a printing house that invests in digital printing the creation of services for the customer is a way of expanding the value creation zone.

Although this is an internal struggle in the company and industry it is important to remember that substitution and imitation are the two most common external factors that threaten the value of a company's resources [31].

For example Xerox had, in the 1970s, 95% of the world market for photocopiers. They had built up gigantic entry barriers and created products and services that were hard to copy by relying on patents and an extensive service organization. Since Xerox had built strongholds around their industry, Canon found a way around the patents with low cost copiers for distributed printing. This attack from Canon was not head-to-head but rather from the flank and it took Xerox by surprise and was ignored for a long time by Xerox [34].

### 2.3 Hypercompetition

In industries today it is becoming increasingly hard to sustain advantages for long [32,33], and a hypercompetitive behavior becomes crucial. The aim of a more dynamic approach to strategy is to disrupt the status quo and create an endless series of small competitive advantages. This makes it important even for companies that have obtained advantages to challenge them before their competitors undermine those already achieved. It is important for a company to "*realize that control of the evolution of competition in the market is more important than earning current profits*" [27]. This has become a popular way of thinking, especially in the age of information that has been a fact since the mid 1990s. [13] discusses the importance of information and how richness and reach of information shifts power from the producer to the customers and increases hypercompetition. As switching costs decrease it is important to find new ways of generating customer loyalty [13], and relationships with customers becomes important since "*the process of developing new advantages or undermining those of competitor begins with an understanding of how to satisfy customers*" [35]. In other words, good disruption is disruption that creates a temporary possibility to serve customers in a superior way.

A company is therefore forced to destroy their own competitive advantages and create new ones before the full course of the traditional product cycle. This means that they have to cannibalize their own product and brands before their competitors do so.

Simplified, competition occurs on four different arenas; *cost and quality, timing and know-how, entry barriers and deep pockets*. Companies move between these arenas once the competitive environment has escalated and competitive options have been exhausted in the current arena [27]. This means that instead of only playing the game, it is better to change the rules, scope and players in the game.

An actor in a hypercompetitive environment makes progress by trying to modify the world to their own needs by disrupting advantages made by others and changing the rules of the competition. [27,36] defines seven key elements of a dynamic approach to strategy in the new 7S's theoretical framework:

- Superior stakeholder satisfaction
- Strategic soothsaying
- Positioning for speed
- Positioning for surprise
- Shifting the rules of the game
- Signaling strategic intent
- Simultaneous and sequential strategic thrusts

Everything around this framework is based around disruption, and the seven elements above represents how to have vision, capabilities and tactics to create disruption of the status quo on market elements in a dynamic strategy (Figure 3). This framework is based on the 7S's framework, presented in the beginning of the 1980s by McKinsey & Co [37].

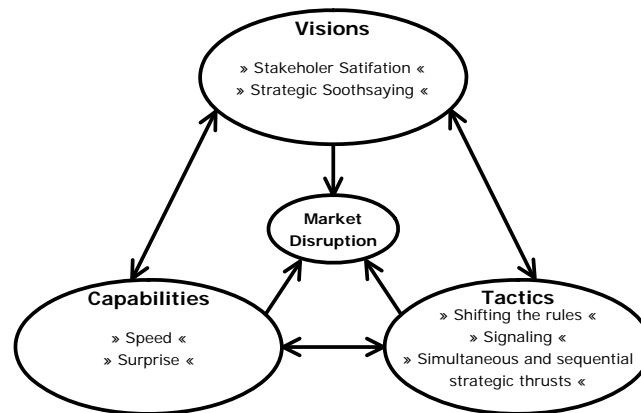


Figure 3: The new 7S's Framework [27].

Companies that act successfully in a hypercompetitive environment build a series of temporary advantages instead of trying to sustain the advantages gained. “*It is this series of advantages, this constant seizing of the initiative, that is the true source of sustained advantage*” [35].

### 2.3.1 Vision for disruption

In general, the shareholders of a company are the stakeholders that should be prioritized. However, in a hypercompetitive environment putting the customer and workers before the shareholder can be the solution for surviving since understanding the customer may create advantages against competitors [27]. All needs that a customer knows that they have are easy to identify, because they will probably tell a seller since they want to have these needs satisfied. Customers are in general a very interested, capable and inexpensive business developer [38]. Through close customer contact and involvement of customers in the development of new products and services it is possible to better identify needs that a customer cannot articulate for. This is also a way of creating new demands and to predict and understand future evolution of market and technology before it really happens [36].

Employees are important for building superior customer satisfaction since they are the ones that have customer contact and may understand both current and future needs. It is important to be able to serve the customers extremely well without neglecting the needs of the employees and investors [27].

Strategic soothsaying is a way of understanding the future evolution of the market and the technology and how these can be used to serve both existing and new customers. This soothsaying will form the basis of where the company should focus the future disruption of the market [27]. Lead-users are important to be able to predict future customer value and a close relation with these customers is a very valuable source for product and service innovations [39,40].

### 2.3.2 Capabilities for disruption

As mentioned before the new 7S's theoretical framework is based on creating a series of temporary advantages instead of sustaining competitive advantages [5]. There are two basic capabilities for successful disruption of the status quo and creating temporary advantages – *speed* and *surprise*. To be able to create one advantage after another speed becomes very important to stay ahead of competitors. This is not the rate of production but rather “*speeding*

up their ability to move and to change” [27]. Surprise on the other hand is a way for a company to extend the period in which the advantage is unique. Nevertheless, once an advantage is recognized, the competitors start to duplicate and to create an even better advantage to serve customers. However, the time it takes for the competitors to undermine an advantage and take away its uniqueness becomes longer if they are taken by surprise [36]. Dynamic capabilities are important to be able to ensure long-term competitiveness [41], and by investing in more general resources that can be utilized on a wider arena it is possible to take your competitors by surprise and off guard [27].

### 2.3.3 Tactics for disruption

Almost every industry has unwritten rules of how to behave and how to compete conventionally. The tactics of disruption is to attack these conventions and *shifting the rules* of the market to undermine the advantages of competitors and make it possible to create temporary advantages for oneself [27]. This can e.g. be Dell’s shift from using retail in computer sales to mail order and lately Internet sales. This attacked the conventional knowledge that consumers needed personal service in retail stores to be able to purchase personal computers [42,43]. Southwest Airlines is another company that successfully pursued a low cost strategy that lowered the prices in the short-haul point-to-point flight industry and became the most profitable airline company in the US. This resulted in loss of advantages for former industry leaders like American Airlines when Southwest Airlines changed the rules of competition by carrying passengers at a price much lower than the unit cost of the rest of the airline industry in the US [44].

By signaling strategic intent in a dynamic and fast moving market environment, it is possible to “*forestall moves from competitors and encourage customers to wait for their products rather than buy competing products that make it to the market sooner*” [27]. Companies like Microsoft and Intel, who continuously announce their next technology, have used this tactic very successfully. As mentioned this is about signaling strategic intent and not the tactics used to get to the strategic position, meaning that the competitors know where the company is moving but not how and when.

By having a simultaneous and sequential strategic thrust, a company should be able to move on to the next move at the same time as the competitors respond to their first attack on the market [27]. Instead of having a linear strategic intention as following one of the generic strategies [4] a company acting on a dynamic market should be able to attack on several fronts with a series of thrusts against competitors.

### 2.4 Strategic alliances

When acting in a hypercompetitive environment it is important to have access to resources and have dynamic capabilities to create disruption on the market. It is not always possible to acquire all necessary resources in-house and networking may be a way for a company to “*get access to external resources, necessary in the pursuit of their opportunities*” [45] and make it possible to offer a complete service to the customers. According to [45] a strategic alliance is a “*long-term, purposeful arrangements among distinct but related for-profit organizations that allow those firms in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network*”. Alliances may also be a way for smaller companies in an industry to build their own deep pockets to be able to compete with aggressive large opponents [35].

As discussed before, opportunistic behavior in a hypercompetitive environment results in the possibility to gain temporary advantages [27,35,36]. However, this behavior may result in lack of trust, which is a central issue in creating and sustaining strategic networks [45].

### 3 Methodology

In this qualitative case study two companies have been studied, the customer company (referred to as *the Customer*) and the service provider of print services (referred to as *the Service Provider*).

As a printing house in Sweden, the Service Provider is a part of the dynamic media environment. The Service Provider has offered a deal to the Customer where the main advantages for the Customer is lower print volumes and lower discard volumes as most of their publications will be printed on-demand. This case was chosen to illustrate the shift into a more dynamic business environment, where the printing houses have to act faster and more hypercompetitive to be able to capture temporary profits above average [36].

Open-ended interviews [46] have been conducted to gain deeper knowledge of processes that change the way the customer company publish their publications and the way the printing house acts in their competitive environment [47,48,49]. During the interviews, open-ended general questions were asked and depending on the answers follow-up questions could be adjusted to the situation [47,48].

The interviews were all conducted at the company of each respondent during the period from early summer 2005 until spring 2006 and followed a longitudinal methodology to be able to capture changes and development [49]. Respondents from different parts of both the studied company and their contracted printing house were interviewed. The interviews were held under calm conditions without any major disturbance or time pressure [47] and during the interviews, the respondents could talk freely and openly [48]. Additional information has been collected over telephone, email, documents, and websites from the companies in the study.

An objective view is important when conducting independent research and therefore an approach inspired by Grounded Theory [50,51,52] has been used. This is both a good method of understanding how customers experience and act in certain situations and to find new phenomenon. The approach to the use of literature studies and theoretical frameworks in grounded theory has become divided [50,51,52], and in this research study literature studies were conducted both before and after the interviews to enhance the theoretical sensitivity [51]

At the customer company employees and project managers involved in the project and the transformation process were selected as respondents. At the printing house, both involved employees and the CEO were interviewed as previous research shows the importance of the CEO of an organization when setting and communicating business strategy [15,53,54,55].

### 4 Results of the case study

In this chapter, the results from the case study will be presented with summaries and highlights from the interviews. Analysis and discussion concerning the results of this study is presented under Discussion below. The Customer is presented first, since this part also gives important information on how the Service Provider is currently working.

#### 4.1 *The Customer*

The customer company (that will further on be referred to as *the Customer*) in this study is a government institution in Sweden. They annually order large quantities of printed material and the main production is publications and reports for different purposes.

They have been working with their current printing house (that will further on be referred to as *the Service Provider*) for approximately three years. When they decide on suppliers they had to, as any Swedish government institution, follow the Act [56] on Public Procurement, which means that they have to invite offers from at least three suppliers and do regular procurements

of suppliers for products and services. Also when they contracted the service provider they chose, as many other government institutions have to, a supplier that had high ethical and environmental standards [24].

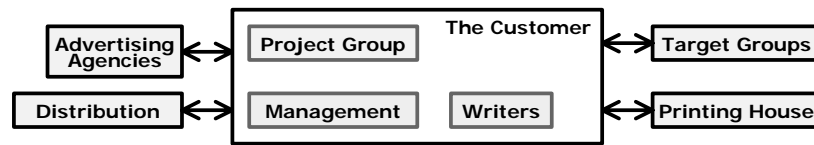


Figure 4: A simplified outline of the organization for publication at the Customer.

The situation today is as follows: approximately 200 writers at 13 departments at the Customer can order prints of their publications (Figure 4), together they order prints of approximately 2000 publications annually. It is up to every individual writer to decide on volumes, finishing etc. on every order. The total cost for printing of printed products (excluding prepress, distribution and stock keeping) was approximately €1 million in 2004, of which 40% was digital printing. This cost was split into a total of 2000 orders of which 70-80% were orders for digital printed products. The cost was cut by roughly €700'000 when they changed to their current supplier.

The discarded volume 2004 was 23% of the total stock, which summarized adds up to 12 metric tons. An additional 23% of the total stock (15 metric tons) were publications that were three years or older and are regarded as material that could be discarded as well. This means that the Customer only regards half of its current stock as useful material and a majority of the stock is non-moving. Although a lot of the printed matters are used and not in stock, there has been a huge overproduction and the long-term goal is that *"you should not be allowed to put printed matters in stock if you do not have a really good reason"*. A lot of the problem with over production of publications comes from the complicated decentralized order situation, the Customer believes that *"we have to fix this, we have to get an overview, we have to try to change the organization and we have to regulate, and to regulate we have to categorize [the publications]"*. They are currently running an internal project that aims at rethinking the way they produce, store and distribute their reports.

The large amount of annual orders and the complex situation with many writers that are handling the ordering, has made it important for a close collaboration between the Customer and the Service Provider. The Customer and the Service Provider have agreed on integrating three employees of the Service Provider at the Customers premises to control the orders. These employees were actually acquired from their previous printing house when the Customer changed supplier.

#### 4.1.1 The customer's customer

One problem that has led to the current situation with large quantities of printed materials in stock is the poor knowledge inside the Customers organization of the internal and external usage of their material.

In general, they have three different groups of users of their publications – Internal, External and Public users. During 2005, the Customer conducted a reader study to gain knowledge about how their publications are used. They believe that this study can form the basis for decisions on how to categorize the different publications, and *"the result shall be useful at the preparation of a strategy or policy of our publication business"*.

Even though it is possible to order publications and reports directly from the Customer, many publications and reports are distributed with a push policy. That is that they are distributed

without a direct order being made by the receiver. In the reader survey 20% stated that they received publications without ordering them.

Better knowledge about the usage of the publications and reports when they leave the Customer, has helped to identify that many of their publications are not used in the anticipated way or to the intended extent.

By using a system where every publication is categorized dependent on the amount of work put into a publication, and having clear instructions how to order depending on category, it is possible to reduce the amount of printed matters. Other important criteria for categorization are the useful life of the publication, importance for the organization, importance for the target group, and the size and homogeneity of the target group. The goal is to identify the primary publications to be able to locate which publications that could be printed with traditional printing technologies and kept in stock. *“We don’t want the writers to stop producing publications, but we can distribute them in another way, we can distribute them in digital form.”*

#### 4.1.2 Digital publications

Publications that are not regarded as primary publications will not in the future be printed for stock keeping, but only for the intended purpose. These publications will instead be kept and distributed as digital documents. Today all relevant publications and reports produced by the Customer are available on the Internet. The main goal is to create a solution where all publications are offered as digital documents, and if someone is interested in a printed copy it will be possible to order one by print-on-demand directly from the Service Provider.

This way of working will increase the value for both the Customer and for the customer of the Customer since both volumes kept in stock will decrease, and consequently the amount of discarded volumes. But also, they hope that the average content quality of the publications that are actually printed will increase. By combining internal organization changes with the use of digital printing as a more influential production technology, it is possible to change the current situation to a more cost effective way of working. The obstacle the Customer believes they will face when starting to work more with digital publications is that *“it will be hard to get people to value a digital publication instead of a printed publication”*.

Budget cuts started this process and forced the Customer to investigate their publication policies. This trend towards digital publication is not entirely unique for the Customer, and is something that is becoming more common among government institutions in Sweden.

#### 4.2 The Service Provider

The Customer’s provider of print services (referred to as *the Service Provider*) is a large traditional printing house in Sweden with their main production volumes in offset, they are part of a larger communication group. They are a vertically integrated printing house that can provide almost all services connected to printed matters. They do not currently own any digital printing equipment but do offer this service through a co-operation with a partner, who also is a vertically integrated smaller printing house specialized solely on digital printing.

The Service Provider has focused on customers that work directly with end consumers (B2C) and long-term relations with these customers are an important factor for the Service Provider. However, in this case, the Customer is a government institution and the Act [56] on Public Procurement render it impossible to sustain long-term customer contact since every contract has to be purchased regularly. As mentioned earlier the integration of employees at the Customer is a way of increasing the stickiness and learning from the Customers’ problems and increasing the possibility of renewing the contract.

When the Service Provider signed the contract with the Customer, it also became the starting point for the transition into a more dynamic way of working towards their customers and to find new visions for disruption. Below is described how the Service Provider has started working in a more dynamic way by acting according to the new 7S's Framework [27,36].

#### 4.2.1 *Extending focus*

As mentioned before the Service Provider is a vertically integrated printing house that can offer everything from original work to distribution, either in-house or in co-operation with partners. They are currently working towards increasing the total revenues of backward integrated services like pre-press and media- and market management.

The Service Provider also has during the last couple of years started to incorporate competing services to print into the organization, this is a form of horizontal integration and is done to a large extent organically and not through acquisitions. These services are to a large extent based on non-printed solutions like electronic documents etc. By being alert to their customers' demands and inquisitive they can get information on how to develop future applications and activities for the market. They can create mutual value for both the shareholders and the customers by working and learning from their customers in this way. They want to work with customers that also want to create common value and not those that only want low prices. They believe that much of their way of doing business comes from identifying "*what the customers' problem really is and how are we going to solve it?*".

The Service Provider took a strategic decision a couple of years ago to start offering digital printing as a production technology to their customers, however they did not choose to invest in the technology themselves. Instead they formed a strategic alliance with a local digital printing house as a sub-contractor for digital printing, and the Service Provider became a subcontractor for traditional printing technologies for the digital printing house.

Since this alliance was formed the Service Provider has developed several applications that are totally based on digital printing output and uses the unique features of this technology like on-demand printing and variable data printing. The Service Provider believes that it is the connection between digital printing and render other parts in the value system more streamline, like efficient logistics and template-based integrated solutions for production, that are important to fulfill market demands. They have developed unique services that they have been first on the market with. The Service Provider believes that speed in combination with surprise is important to be able to gain temporary advantages on the market when developing new products and services.

By these kinds of applications and the solution for the Customer described earlier, the Service Provider has created contracts and applications that do not favor their original core business, the traditional printing units.

## 5 Discussion

### 5.1 *Creating disruption*

The main focus when competing in a dynamic environment is on how to create disruption. As a traditional printing house the conventional way of competing is by using large production capacity to produce at low cost. This is what [4] refers to as cost leadership.

The case in this paper has been chosen to illustrate how the Service Provider has jumped from one arena to the next to create disruption on the mature market. By moving from the competition by cost-quality to timing and know-how the Service Provider is able to start helping the Customer to fulfill their vision and need to reduce volumes and working towards an all-electronic solution for the publications.

### 5.1.1 Vision

The Service Provider has, during the last couple of years changed the order of prioritization among their stakeholders. The traditional way of prioritizing the stakeholder is to put the shareholder at the top. However, deep pockets have given them the opportunity to change focus from shareholders to customers. This is a way of changing from shortsighted to long sighted shareholder value. Today the Service Provider believe themselves to “*be very much customer and offer orientated*”. By working closer with their customers the Service Provider has been able to, quickly, develop more accurate services for their customers.

### 5.1.2 Capabilities

Speed in product development is indeed important. Basically, many of the companies in the customer segment that the Service Provider is currently working with are in a state of hypercompetition, which in turn influence how the Service Provider works. It may be even more important to understand the environment the customers are facing to meet their demands than understanding the rivalry among the existing firms in the industry [4].

### 5.1.3 Tactics

Using digital printing is a strategic decision by the Service Provider, but gaining control over the resource by a tactical decision of strategic alliance is a way of quickly gaining the resource and the knowledge and shifting the rules of the industry. Resources can be directly or indirectly controlled [57], and in this way the Service Provider gains indirect control over the digital printing resource.

By networking the necessary resources it is possible for the Service Provider to focus on creating activities that can increase customer value. However, in the case of the traditional printing industry this means cannibalizing on their core business since they educate their customers to print less. This can however be compensated by increased revenues from services earlier in the value chain.

Networking was a way of gaining control over resources to be able to offer a complete line of offers to the customers. But in the case of this Service Provider, that came from a core SBU of traditional printing, networking into digital printing and the product development of products based on digital printing or electronic distribution means cannibalizing on their original core SBU. This way of moving from the cost-quality to the timing and know-how arena may be a necessary step for future survival [35]. If you are not capable of cannibalizing on your own business to gain new temporary advantages, someone else will be able to do it.

In this case a strategic alliance was the fastest way of gaining the necessary resources to be able to create superior customer satisfaction and try to escape the fierce competition on the cost-quality arena. Digital printing became a success factor for the Service Provider and enabled them to offer a solution that strives towards an all-electronic solution.

## 5.2 Moving from arena to arena

Today, the competition in the cost and quality arena in the printing industry is fierce, that is why the Service Provider has chosen to move into the timing and know-how arena. This is not an easy step since it means building additional resources that connect new knowledge to the printing industry. The Service Provider has used the deep pockets of the communication group that the Service Provider is a part of to try to change the rules of competition when moving from cost and quality competition to timing and know-how.

By working with know-how instead of cost-quality it is possible to capture a larger amount of the profits connected to digital printing since it expands the value creation zone (Figure 2), when appropriability and scarcity increase. By gaining customer contact it is also possible to increase the customer demand for digital printing, which should increase the value creation zone even further.

Regarding entry barriers, the Service Provider has chosen a specific customer segment that they are trying to satisfy. By specialization on this particular segment they try to build knowledge regarding working with these customers and thereby build entry barriers to scare away new competitors.

Noteworthy about this way of competing is that they do not compete statically but are in constant movement between the different arenas and act dynamically on each and every one of them to control their competitive environment and create new competitive advantages.

A traditional printing press is not constructed for short print runs and by offering this opportunity with digital printing, customers' behavior will start to change. On the other hand customers in general strive to reach low costs. And by offering a multi-channel opportunity involving both electronic and printed channels customers will probably not settle for an all non-printed solution in the end.

### *5.3 Digital printing as a cost saving technology*

By adopting a hypercompetitive behavior, it has been possible for the Service Provider to create cost saving solutions for their customers. The main cost saving in this case comes from reducing discarded volumes of outdated publications and reports. This is a result of a change in the way the Customer publish their reports. The change has been made possible due to the widely spread use of the Internet, which makes electronic distribution an easy-to-use cheap solution. This philosophy makes digital printing a natural and efficient way of producing tangible copies and the on-demand features of digital printing makes it possible to rely on electronic stock keeping.

## **6 Conclusions**

The competitive environment in the printing industry is becoming increasingly dynamic and a hypercompetitive behavior may be crucial to be able to ensure future survival in this industry. It is possible to notice the shift from the cost-quality to the timing and know-how arena for the hypercompetitive service provider is this study. By moving to the next arena it is possible to control the future of the industry in a more successful manor. The printing industry is today influenced by a more heterogeneous group of competitors with a much broader base of experiences. This since the competitors are not only in-industry, i.e. other printing houses, but rather companies that are changing customer behavior to make customers less in-need for print.

The Service Provider is strategically changing the focus of the company from a production company, with focus on the production equipment, to a service company with focus on customer contact. By shifting focus the Service Provider will become less dependent on large print volumes, but on the other hand they do themselves contribute to the changed behavior among customers.

Even though the Service Provider had an advantage on the market, with a large-scale production facility, they chose to create disruption since they realized that they could not sustain this advantage forever on their dynamic market. This was done even though it meant cannibalizing on their former core business. By changing the path of their products and services they can, in a better way, control the evolution of the market. The way that the Service Provider is acting is hypercompetitive-like and is crucial to try to control the outcome of the printing industry and ensure survival for the company.

### *6.1 Integrated with non-printed solutions*

The conclusion of this study is that digital printing is used successfully when the main objective of the customer is not to print at all. When striving towards a paperless business the most natural, convenient and profitable way of producing a non-electronic output is digital printing. Printed material will probably not disappear in the foreseeable future and therefore digital printing will most certainly increase its importance as a production technology.

In the case described above, digital printing is, today, used mainly for producing shorter print runs and for avoiding large amounts of discarded quantities. But digital printing also provides the potentials in producing customized documents, which will be more important in the future.

When looking back at the quote by Henry Ford [1] cited in the beginning of the paper - “*Does the manufacturer exist for the consumer or does the consumer exist for the manufacturer?*”, the truth may be that in the dynamic competitive environment of the digital printing industry they exist for each other in symbiosis to co-create a mutual value for both the customer and the service provider.

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