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## **Visualizing the value of service-based offerings – Empirical findings from the manufacturing industry**

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## **Abstract**

**Purpose** – The purpose of this paper is to explore strategies for visualizing the value of service-based offerings in a B2B context. By taking a process perspective on the offering life cycle, this paper also aims at distinguishing which visualization strategies are most appropriate using at which life-cycle stages.

**Design/methodology/approach** – The study employed a qualitative, multiple-case study research design involving five manufacturing firms.

**Findings** – Primary findings are that firms need to make use of several different visualization strategies depending on, among other things, the key stakeholders and also where the firm's offering currently is positioned in the service-based offering life cycle.

**Research limitations/implications** – While the empirical data is from only one sector - manufacturing - managers from other B2B sectors should have an interest in the results and the key aspects identified. Further research could also establish linkages to performance metrics.

**Originality/value** – Visualization strategies have been relatively little studied from a B2B perspective, and the process dimension, especially, is novel.

**Key words** – Visualization, Value, Services, Offerings, Tangibilization, Manufacturing

**Paper type** – Research paper

## 1. Introduction

Many manufacturing firms, as well as firms in other industries, are currently extending their traditional product-based offerings by adding service elements (e.g., Kowalkowski *et al.*, 2011; Raddats and Easingwood, 2010; Fang *et al.*, 2008), but creating offerings with high service content is only one part of moving towards a service-oriented business. Another significant factor is communicating the value of the new offerings to the customers successfully to convince them of the benefits of the new service-based offerings as compared to old product-based offerings (Anderson *et al.*, 2007).

Traditionally, firms have been proficient in communicating and illustrating the value of their product-based offerings while, for their part, customers are also competent in receiving such messages, and understanding the value of physical products. But both sides often run into problems as they enter the service domain, since communicating the value of services is often more difficult and complex due to, among other things, the intangibility of the service performance (Mittal 1999; Berry and Clark, 1986). Furthermore, the dimension of the supplier-customer relationship, in which the two have established the value interactively, is difficult to measure and visualize in monetary terms (cf. Ramírez 1999). Interest in how to communicate the value of services has been growing and several scholars have raised calls for more research in this area (e.g., Stafford and Stafford, 2000; Tripp, 1997).

As firms change their value propositions by enhancing their product offerings with high-value services (Gebauer and Kowalkowski 2011; Jacob and Ulaga 2008; Matthyssens and Vandenbempt, 2010), they need the capability to communicate the value of these new service-based offerings, a capability which this research labels *visualization*. Visualization enables firms to illustrate, demonstrate and communicate the value of their

offerings, and involves utilizing various so-called visualization strategies to form an understanding of the value before, during, and after the service interaction/process.

Porter (1985) argues that firms that are better at signaling - or visualizing - the value of their value propositions can command higher prices in the market, confirming visualization as an important capability for firms. Managing these market signals, or evidence (Shostack, 1982), requires specific skills, actors and methods, and is considered as being included within the concept of visualization (Berry and Clark, 1986).

In this paper visualization is forwarded as an approach to understanding how firms can develop ways to address customers and show on the value of their offerings. Existing research in the area tends to focus on traditional service firms (e.g., Hill *et al.*, 2004; Mittal, 1999) and there is a research gap in the area of B2B marketing (e.g., Caceres and Paparoidamis, 2007). Visualization in B2B marketing tends to be limited to what Berry and Clark (1986) call documentation strategies, and has an external focus, geared mainly towards selling (cf. Anderson *et al.*, 2007). But visualization as a whole is a broader concept, and includes how firms visualize the value of their offerings not only to prospective and existing customers during a sales process, but also both internally and to other actors in the extended business network. Firms furthermore need to address the visualization of an offering in all stages of an offering's life cycle (Kindström and Kowalkowski, 2009) and not just the sales stage.

Using in-depth case studies from five manufacturing firms, we explore the concept of visualization and how firms could use it more than they do today to facilitate the implementation and marketing of new service-based offerings. The purpose of this paper is two-fold. First, it promotes the concept of visualization in the context of the service-based offering's life cycle; second, it explores how firms use visualization strategies when attempting to establish service-based offerings on the market.

## **2. Theoretical framework**

Value from services is often perceived to be more difficult to visualize than for products due to the intangibility of service performance, especially prior to purchase (Anderson *et al.*, 2007; Hill *et al.*, 2004; Mittal, 1999). This is accentuated by the relative immaturity of traditional product suppliers and buyers in providing and using services (Lindberg and Nordin, 2008). Similarly, the actual interaction during service delivery is often crucial for service performance (Normann, 2001) but visualizing a future interaction and its value creation potential for a prospective buyer is not straightforward. This intangibility makes it difficult for customers to understand the service at both the pre-purchase and also the post-purchase stage (Legg and Baker, 1987) and it can make it difficult for customers to differentiate between services. As the balance of firms' offerings changes towards increased service content, the visualization of service value is becoming increasingly important.

### **2.1 Visualizing the value of service-based offerings**

Trying to understand what value different offerings contribute, what customers expect from these offerings, and ultimately what value they should visualize it is possible to identify three broad value-categories; Product-based, Service-based, and Relationship-based value (Ulaga and Eggert, 2006; Lapierre, 2000). Product-based value is what most suppliers have traditionally focused on, and are good at visualizing: typical value parameters include product performance, quality and price, which have a history of being order winners and are where many firms still tend to put heavy emphases. Service-based values are more difficult to evaluate and quantify, due to among other things their intangibility, which makes them harder to visualize. Since many firms have traditionally regarded services as add-ons, and even given them away to close product deals (Anderson and Narus, 1995; Mathieu, 2001), customers have often been able to gain

these values - whose typical parameters include operation costs, customization and performance consistency - free of charge. Finally, relationship-based value is based on how the supplier and customer maintain their relationship over time (Grönroos, 1997). Wilson and Jantrania (1994) for example define relationship value as the outcomes of a collaboration that enhance competitiveness. As in service-based value, relationship-based value is often idiosyncratic and process-oriented, which makes it more difficult to visualize, and is therefore often neglected in (for example) formal contracts: its typical value parameters include pro-activity, trust and long-term commitment (Wilson and Jantrania, 1993).

Szmigin (1993), in the research on service quality, revealed that different service quality elements come into play at different times in the supplier-customer relationship suggesting that so-called process and outcome related elements are emphasized in mature relationships. This implies that more traditional, product-based, visualizations may be more important in winning new customers than in retaining existing customers, thus implying that service- and relationship-based visualizations may be central for cultivating and further developing existing relationships, where established customers perceive offerings as part a relational process (Tuli *et al.*, 2008).

The creation and communication of value has been the focus in a number of studies (Anderson *et al.*, 2007; Lapierre, 2000; Grönroos, 1998; Woodruff, 1997). Anderson *et al.* (2007) in particular discuss how to convey value to customers in B2B markets. They propose three different strategies suppliers can use: *All benefits* where the supplier simply list all potential benefits they believe their offering can deliver to the customer, *Favorable points-of-difference* where the supplier explicitly recognizes that the customer has alternatives and tries to list those points-of-difference between their own and competitors' offerings, and *Resonating focus* where the supplier tries to communicate

those benefits the customer really appreciates and needs: although this is the most difficult strategy to manage - due to the customer and competitor knowledge required - the resonating focus value proposition has the greatest potential. In the context of an offering, simply listing all potential benefits is not sufficient when service content is increased and offerings are becoming more complex. Instead, firms need to align their communication with their customers' actual needs. Similarly, the move from internally focused, all benefits value propositions to a more resonating focus requires more and better customer knowledge, since the value proposition becomes more and more customized and includes a higher service content.

## **2.2 Visualization strategies and intangibility**

Previous research has emphasized the fact that services need to be made more tangible and product-like as deserving special attention when visualizing their value (Berry and Clark, 1986; Berry and Parasuraman, 1991; George and Berry, 1981). Studies of service advertising have also found that service marketers often provide more factual information, or cues, than for products, and that this tendency is emphasized the more intangible a service is (Tripp, 1997; Grove *et al.*, 1995). In addition, visualization must not be limited to advertising and promotional activities, as tends to be the case in B2C marketing, but (in line with Grönroos' (2009) views on marketing) should involve all marketing activities and support value creation for both customer and supplier.

To understand how to visualize the value of services to different actors and in different situations, firms can make use of so-called 'tangibilization strategies' (Berry and Clark, 1986; Hill *et al.*, 2004; Mittal, 1999): four general strategies have been proposed for conveying the value of a services; Envisioning, Association, Documentation and Representation (see Table 1). Although Berry and Clark (1986) use the term visualization for a specific strategy, this research gives the term a broader compass covering all four

strategies, with Envisioning equating to what Berry and Clark, in their research, label visualization.

*Table 1. Four tangibilization strategies (Berry and Clark, 1986; Hill et al., 2004).*

<b>Tangibilization strategy</b>	<b>Meaning</b>
<b>Envisioning (Visualization)</b>	Using vivid cues in order to persuade customers and to make them experience the service mentally. It evokes a clear and vivid mental image of the positive outcomes associated with the service.
<b>Documentation</b>	Providing relevant information about key attributes, features and benefits of the service in three types: 1) Consumption (concerning the activity of customers in consumption the service), 2) System (including facts and statistics pertain to the service delivery system), and 3) Performance documentation (e.g., reference cases and cost calculations).
<b>Association</b>	Linking an object, place or a person to the service (e.g., John Deere's deer and Scania's griffin).
<b>Physical representation</b>	Focusing on core attributes that are direct or peripheral parts of the service (e.g., buildings, vans, and employees).

In addition to the above - but also implicitly part of both Envisioning and Documentation - two other strategies have been proposed that take the interactive nature of services into account; *Performance episode strategy* and (from a customer perspective) *Service consumption episode strategy* (George and Berry, 1981; Mittal, 2002). These two explicitly put focus on the delivery and consumption interactions that are pivotal for most services. Furthermore, George and Berry (1981) argue that it is also important that visualization activities are focused both internally and externally (i.e., address employees as well as customers).

### **2.3 Visualization strategies in the service-based offering life cycle**

Using a generic service-based offering life cycle framework based on four stages - *market sensing, development, sales, and delivery* (Kindström and Kowalkowski, 2009) - this research attempts to widen the scope of visualization to include all stages of a service-based offering life cycle. This adds a process dimension to the research on

visualization strategies, which has hitherto predominantly been externally oriented, and with a focus on sales activities. Table 2 offers a brief description of the different stages.

*Table 2. A stage model for the service-based offering life cycle (Kindström and Kowalkowski, 2009).*

<b>Stage</b>	<b>Description/rationale</b>
<b>1. Market sensing</b>	A continuous process taking place within the firm and in dialogue with customers. Although the customer is in focus, sensing developments in internal business units and the wider business network is also needed.
<b>2. Development</b>	Development requires the involvement of customers and several functions, notably both front- and back-end, including more cross-functional and intra-organizational elements and coordination aspects than for product development. It should involve the local organization and its front-line employees during all steps of this stage (e.g., idea generation, concept development, and pilot study).
<b>3. Sales</b>	It is essential to help customers appreciate the distinctiveness and benefits of the new offering, so front-line employees must have sufficient knowledge to sell the service convincingly. Firms often emphasize design and definition of new services, but seldom put much effort into developing tangible actions for how to commercialize, and to scale up, new services.
<b>4. Delivery</b>	It is in the delivery stage that the difference between products and services become most evident. Services are created interactively with the customer during the delivery process, and are often highly localized. If services are to be delivered effectively and efficiently, a service infrastructure needs to be in place, which will often be very different from a product delivery infrastructure

By combining research on visualization strategies and the offering life cycle this research aims to increase understanding in how and where in that life cycle firms can use which visualization strategy(ies).

### **3. Methodology**

Since the purpose of this research is explorative and context-bound, a qualitative case study approach was adopted (Eisenhardt and Graebner, 2007). Case study research, including interviews, is a suitable method for identifying patterns and achieving a methodological fit for nascent theory (Edmonson and McManus, 2007).

The empirical data in this research is based on five market-leading capital equipment manufacturers (see Table 3). Choosing manufacturing firms allowed us increased construct validity, but at the same time may limit the possibilities of generalizing our

results to other contexts, although a strategy of replication in multiple empirical settings was adopted in order to increase external validity.

*Table 3. The case firms, their industries and typical service-based offerings.*

<b>Case firm</b>	<b>Industry</b>	<b>Typical service-based offerings</b>
<b>Alpha</b>	Gas supply	Automatic gas supply, liquid management, process management services and solutions
<b>Beta</b>	Garden and forestry equipment	Extensive service and support contracts with uptime guarantee
<b>Gamma</b>	Fluid handling	Customized service level agreements, systems engineering, rental
<b>Delta</b>	Mining equipment	Lifecycle services, capacity-related and gain-sharing agreements
<b>Epsilon</b>	Buses and bus chassis	Vehicle and transportation management, extended coverage contracts, uptime contracts

The empirical data comes primarily from two sources; individual interviews with managers from both case firms and their customers, and focus groups (discussion based interviews with several respondents simultaneously) with representatives from all case firms. Purposive sampling was used for each of the cases in order to access highly knowledgeable respondents (cf. Eisenhardt and Graebner, 2007) and the interview questions were open-ended and allowed the respondents to formulate their answers in their own words. Using respondents from different firm functions and at different hierarchical levels (including customers), as well as external and internal documents, allowed us to triangulate our empirical data and thus increase validity and the reliability of our results. Iterating between several rounds of interviews and focus group sessions enabled the research to be firmly grounded in the managers' problems, and also enabled researchers to discuss the cases and preliminary results continuously. Most interviews and focus group sessions were taped and transcribed and selected respondents validated the case descriptions to ensure accuracy and avoid misinterpretations.

In the analysis process data was grouped into themes and regrouped following a systematic combining process (Dubois and Gadde, 2002) based on the theoretical frame

of reference. Pattern matching with the theoretical constructs (Gibbert *et al.*, 2008), based on the offering life cycle and the visualization concept, was conducted for each case before making cross-case comparisons. This was done to ensure internal validity (Yin, 2003).

#### **4. Discussion – Visualization strategies in practice**

It was evident in all the firms that the value of traditional product offerings have been relatively easy to communicate, both internally and towards customers, because the focus was on product-related and essentially factual values, using (primarily) a Documentation strategy. However, as firms move towards increased service provision it becomes difficult to determine not only what value to communicate but how to visualize it. Having the capability to visualize new service-based value, and adopt multiple visualization strategies, is regarded as central for succeeding with service-based offerings – but is something that all firms, to various degrees, find challenging.

Since services are inherently seen as intangible - except for the often tangible results and customer experiences (Lovelock and Gummesson, 2004) - it becomes difficult to produce ‘product-like’, all-benefits fact sheets that convey the full meaning of offering with high degrees of services before use. Similarly, it is more difficult to demonstrate potential customers of the value of a service than of a product, both because a service is likely to have a significant interactive element, but also because of the inexperience of many buying organizations in evaluating services (Lindberg and Nordin, 2008).

So suppliers need to find new and persuasive ways to translate intangible arguments into unique selling points, to establish a resonating focus with their customers (cf. Anderson *et al.*, 2007), and to demonstrate the value of long-term commitment and trust. Mechanisms such as role plays, simulations, stories, interviews and case studies are all

used by the firms in this research, reinforcing the view that a traditional single focus on Documentation strategies is insufficient.

#### 4.1. Visualization strategies throughout the offering life cycle

The visualization strategies used by the firms differ depending on the life cycle stage of the offerings. The following sections elaborate and discuss each stage in detail, as well as referring to the literature to further develop and explain our findings.

As Table 4 illustrates, visualization involves more than mere external sales communications, and includes a wide variety of techniques and recipients (both internal and external) for the visualizations. The table is empirically grounded and offers a brief synthesis of our firms' situations, the various visualization techniques they use, and key recipients.

*Table 4. A summary of the visualization techniques and key recipients.*

<b>Stage</b>	<b>Main focus</b>	<b>Key recipients for visualization activities</b>	<b>Visualization techniques used</b>
<b>1. Market sensing</b>	<i>External</i>	<i>Industry in general, top management and product organization internally</i>	<i>Trade shows appearance, community activities, top management presentations</i>
<b>2. Development</b>	<i>Internal</i>	<i>Top management, Business area managers (with investment budgets), Key customers</i>	<i>Case studies, reference sites, business cases, top management promoting "the good example"</i>
<b>3. Sales</b>	<i>External/Internal</i>	<i>Customer purchasing organization (typically higher up than operational level only)</i>	<i>Case studies, reference sites/customers ("the good example"), Value calculators (typically spreadsheets), film sequences, role play</i>
<b>4. Delivery</b>	<i>External</i>	<i>Customer operational organization</i>	<i>Reports, follow-up meetings, statistics, newsletters, stickers</i>

#### **Stage 1: Market sensing**

The visualizations employed in the market sensing phase take place on a general level, and involve all visualization strategies: it is a continuous process that exists regardless of whether any particular service-based offerings are developed, sold or delivered. Therefore visualization in this stage is not seen as particularly different from product-

based offerings, so this research only treats it relatively little and does not elaborate on it. Key aspects of visualizations in this stage include the creation of internal leverage through for example, service-oriented change champions, and building a brand that can be associated with service values, thus involving not only ‘passive’ market sensing but also opportunity shaping (cf. Normann, 2001; Teece, 2007). Epsilon for example uses top level managers to visualize, through Association and Envisioning strategies, their focus on service-based offerings and the importance of these offerings not only for the future brand but for the entire industry. Furthermore, they visualize, through a Documentation strategy, their commitment publicly in their annual reports and in their vision statements.

## **Stage 2: Development**

The development stage has a tendency to revolve primarily around internal visualizations in an attempt to find support for the development of new services within the firm. This focus is based on the fact that most firms operate in a rather product-oriented culture, and support for services is still difficult to gather. The firms that offer services as part of an offering often supply them for free in order to secure product sales. They tend to use visualizations in attempts to expand service related sales, to convince internal sales staff to focus on services during the coming sales process (cf. George and Berry, 1981) and to get the go-ahead and investment decisions for various service initiatives. On the other hand, firms developing new-to-the-firm services tend to focus their visualizations towards external actors (primarily customers) in order to create a market pull that can be used in turn to get internal support.

The firms are all used to discussing product-based benefits via a Documentation strategy, but are inexperienced in terms of relationship-based and service-based benefits. They are also relatively inexperienced in new service development (NSD), and often need to visualize how the actual NSD process works. The Delta firm, for example, employs an

external advertising agency to aid in illustrating and to communicating internally how the actual NSD process works.

An interesting approach used is storytelling; that is, developing stories around services to increase understanding and enlist management commitment, which essentially means combining three tangibilization strategies – Envisioning, Association and Representation. Alpha uses storytelling internally, with stories around what can happen if the service does not work as a way to visualize the service and its inherent interactions. Managers also use illustrations (e.g., cartoons) – essentially combining Documentation and Envisioning – to illustrate a sequence of activities to allow employees to gain understanding of what the service involves without crunching numbers. But such narratives can also be used to make the service experience more concrete for external stakeholders. Other common visualizations seen in the firms are quotes and active promotion from top management, translating into Association and Documentation strategies – for example, through annual reports, firm magazines, and the communication of the ‘good example’ of a customer using a service-based offering successfully.

### **Stage 3: Sales**

The sales stage can be divided into two parts – pre-sales/pre-contractual part as well as the contract negotiation part – as the visualizations used differ from the early to the later part of the sales process. In the early part, visualization mainly consists of using cases and reference customers to communicate the intangible aspects, primarily through a Documentation strategy. Some of the firms also use Envisioning strategies, using feelings and mental images in their visualizations.

During the latter part of the sales stage, visualizations tend to become more factual and product-like, as product-based values and actual costs become more important. The focus also shifts more towards such technicalities as delivery details, whereas early in the sales

stage the relationship dimension and values such as trust and long-term commitment are emphasized, although still primarily through a Documentation strategy.

Customers often have problems understanding service-based offerings both before and after purchase. There is the risk that customers struggle both to understand intangible benefits, and to compare offerings from different suppliers. Addressing these issues implies a need to develop several visualization strategies (Legg and Baker, 1987): as noted above, a pure Documentation strategy is often not enough.

Overall, however, visualization strategies during the sales stage are still rather traditional, and include slides, data sheets and spreadsheet applications with examples (sometimes called demonstrators), usually centered on quantifying potential process improvements and cost reductions in customers' operations. While these examples can be more or less sophisticated, they all focus on finding monetary reasons, primarily through efficiency-focused parameters, why customers should buy an offering. Thus Gamma works with key indicators that influence prices, such as energy consumption, wear and tear material, capital, and output. Although they also attempt to include more intangible aspects - such as trust - these are usually based on the nature of personal relationships. Beta uses a number of complex spreadsheet applications to show the value creating potential of their new service-based offerings to reduce total costs and increase total revenues for customers. However, these are often sophisticated and difficult to comprehend. Therefore, Beta has also developed 'stripped down' versions which illustrate key points, such as customer profitability, in diagrams and graphs, and are often interactive, thus moving beyond a pure Documentation strategy.

Findings highlight the importance of simplifying visualizations and using 'dashboard'-like presentations and applications where the amount of actual data is kept at a minimum level (e.g., showing only such end-results as profitability and revenue) in line with

Anderson *et al.*'s (2007) resonating focus value proposition. This becomes even more important when approaching financial staff and higher-level managers who do not necessarily have detailed knowledge of their firms operating processes. More complex visualization strategies in the sales stage include in-depth case studies from reference customers, and advanced scenarios. Scenario discussions are becoming increasingly widely used, particularly since computers and virtual simulations become more readily available for almost all industries, opening the way for more advanced visualizations covering 'softer' aspects such as service interactions, closing in on so-called episode strategies (George and Berry, 1981; Mittal, 2002). As scenarios become more advanced they also move from being Documentation towards Envisioning strategies, incorporating more intangible aspects and being able to convey feeling, such as trust that an illustrated solution actually will work.

#### **Stage 4: Delivery**

For a supplier, the problem with delivering many service-based offerings is to show that they have done a good job: many of these offerings – for example, contracts for preventive maintenance or for continuously supplying production inputs – usually tend to go unnoticed unless something goes wrong. Suppliers need to be able to visualize the value their offerings deliver if customers are to understand what it is they are getting. Similarly, it is important to reinforce customers' buying decision during the delivery stage as well as afterwards, to confirm that they made the right decision. This becomes even more important since service-based offerings entail a higher degree of intangible benefits, such as trust (cf. Legg and Baker, 1987). But visualization techniques can be comparatively straightforward: the Alpha firm use stickers that the service technicians put up at the customer's site to remind buyers of their presence and the value they deliver. Two firms, Alpha and Beta, also hold regular meetings with customers where

they present contract summaries and usage statistics reports (i.e., using primarily Documentation and Representation strategies) set out in ways that reinforce their position as a long-term value partner.

Although in the delivery stage visualization is often difficult, there are many opportunities to reinforce the relationship and to visualize relationship-based value to increase customer retention. Beta, for example, uses reports to show actions taken and how they provide added value during the delivery phase, and reinforce relationship-based value via a web-based system that delivers real-time information on customer operations and processes, for example, vehicle fleet information and spare parts management.

In this stage, Representation strategies in the firms are well developed, and include firm brand reinforcement in service technicians' uniforms and paintjobs on service vehicles, which also carry specified sets of tools and spare parts. Alpha has also started to develop guidelines for service interactions with customers, stipulating what should be done and, to an extent, how. All this effort contributes to reinforcing the supplier's image as being clean, tidy, well-organized and consistent in performance.

## **5. Managerial implications**

First, firms moving towards developing and marketing service-based offerings cannot merely extrapolate the traditional visualization strategies they use for product-based offerings. Managers need not only to design new visualization strategies, but also to understand new sets of underlying values - notably relationship-oriented and outcome-based - that build up the customer's perceived value of the service-based offerings. Firms too often employ methods and techniques for visualizing the benefits and values of service-based offerings that are based on predefined templates developed for products, but which (for the most part) are poorly suited for visualizing the value from these new offerings.

Secondly, by taking the entire offering life cycle as its starting point, this research has not only identified that several visualization strategies are necessary, but also that the focus of visualization changes throughout the life cycle. A further implication is that it is not enough to rely on just one specific visualization strategy for successful service development, sales and delivery, but rather, firms should utilize several strategies to maximize their chances of success. Here a trend is observed, in the firms, towards an increased use of Envisioning strategies to create mental models to inspire customers and capture their attention, and particularly to communicate intangible benefits and convey relationship-based value early on in the relationship. However, since many buyers focus on low-priced offerings and product-based values (Anderson *et al.*, 2000), tangible elements also need to be included, most notably product-like facts and various demonstrators showing for example evidence of cost savings potentials; that is, a Documentation strategy.

Thirdly, visualization seems to be becoming a key capability, both for winning new customers and retaining existing ones, and is therefore a strategic resource which managers need to pay attention to and to continuously develop if their offerings are to compete successfully.

Although firms' offerings change their inherent characteristics as more and more services are included, firms still use their core product as the main leverage. It can be suggested that visualizations that show how the service components interacts with the core product (for example, via a video sequence or a virtual simulation) will find more resonance with customers, since it will be easier for customers to understand intangible service value if suppliers associate them with tangible (e.g., product) aspects (cf. Shostack, 1977).

Table 5 shows the different visualization strategies used at the different development process stages, and summarizes key managerial aspects at each stage and the associated outcomes.

*Table 5. Visualizations strategies, typical managerial aspects and key outcomes.*

<b>Stage</b>	<b>Visualization strategies used</b>	<b>Key managerial aspects</b>	<b>Key outcomes</b>
<b>1. Market sensing</b>	Representation Documentation Association Envisioning	Addressing larger scale change efforts instead of specific. Creating a champion. Building a brand image	An increased level of service understanding internally and externally. Infusing brand image and firm with service values.
<b>2. Development</b>	Envisioning Documentation Association Representation	Communicating the service idea. Providing market, revenue and customer data (a business case) as well as internal demands (such as infrastructure).	A description of how the service works – create internal understanding and/or market pull. Decision support for investment
<b>3. Sales</b>	Documentation Envisioning	Finding emotional levers and communicating a mental image. Producing reference cases, facts, figures, calculations and measures. Agreeing on contract details and performance and evaluation criteria.	Arouse customer interest, making them believe in the concept. Giving the customer decision support for an investment, typically at management level.
<b>4. Delivery</b>	Representation Documentation Association	Customer facing personnel must be relationship oriented. Designing interactions and evidence of presence and service performance.	Customer feels secure and trusts the supplier – peace of mind. Supplier activity reports, measurement, performance and contract valuations

## **6. Research contributions**

In this study, it is found that using a single, product-style, visualization strategy is insufficient when trying to introduce, and market, service-based offerings. Furthermore it is argued that different visualization strategies are needed in the different stages of the offering life cycle – and may need to be enacted simultaneously (cf., Table 5) – to reach all potential stakeholders, both internally and externally, and also to be able to convey all aspects, and value, of a service-based offering. To an extent, this notion supports the idea

of integrating various forms of evidence in order to create a total impression (Shostack, 1977).

The process approach presented here offers a complementary perspective to existing frameworks on visualization which tend to focus either on external documentation strategies in the sales stage (e.g., case histories and value calculators) (Anderson *et al.*, 2007), or on one-way market communication that does not take the offering life cycle into account (Hill *et al.*, 2004; Mittal, 1999; Berry and Clark, 1986). Discussion about offerings in B2B settings often imply a singular focus on a Documentation strategy, but, since many B2B settings of reasonable complexity often require relatively pronounced interaction dimensions, service providers need to use a more dynamic and multifaceted approach to visualization, which means that a wider array of visualization strategies and techniques are needed.

This study also extends existing theory by recognizing the need for internal visualizations in order to manage a product-service transition, and by emphasizing the need to visualize intangible benefits during the delivery stage. Firms with long product lifecycles and long-term contracts, in particular, can build relationships and trust with their customers during the delivery stage so as to facilitate future renegotiations and secure sales.

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