Self-service Revisited: How to Balance High-tech and High-touch in Customer Relationships

HARALD SALOMANN, *University of St. Gallen, Switzerland*
MALTE DOUS, *University of St. Gallen, Switzerland*
LUTZ KOLBE, *University of Göttingen, Germany*
WALTER BRENNER, *University of St. Gallen, Switzerland*

In recent years, many companies have infused more and more self-service technology into their customer relationships. As a result the balance between high-tech and high-touch has become a key challenge of today's customer relationship management initiatives. In this paper, we present a cross-case analysis of two companies that we identified as "good practices" in achieving this balance. From the case studies' findings we derive two possible strategies for service automation: an intimacy-driven and a personality driven approach. We also discuss key success factors that have to be considered for the implementation of these strategies.
© 2007 Elsevier Ltd. All rights reserved.

Keywords: Customer relationship management, Self-service, Self-service technology, service automation

Introduction

The bright demarcation line that once distinguished a company and its employees from the customer is rapidly fading. Thanks largely to the emergence of self-service technology, the dynamics of the marketplace have completely changed (Bitner, Ostrom and Meuter, 2002; Meuter, Ostrom, Roundtree and Bitner, 2000). Customers are no longer passive consumers of a manufacturer's products and services (Wikström, 1996). Nowadays, customers are engaged in a proactive relationship with a company, making them an essential part of the firm's value-creating network as co-workers, or even co-designers of services and products (Prahalad and Ramaswamy, 2000).

This development was triggered by Clarence Saunders in 1916. He founded the world's first self-service grocery store, called Piggly Wiggly, in Memphis, Tennessee. It was unlike any other grocery store of that time in which the usual procedure was for shoppers to present their orders to the clerk. The clerk then gathered the goods for the shopper and handed them over. Saunders recognised that the customer was an untapped resource. He came up with an idea unheard of before: customers had to serve themselves! Soon after the launch of the first self-service store, Saunders patented his self-service format and issued franchises to hundreds of grocery retailers to run Piggly Wiggly stores.

The Piggly Wigglys of today are companies such as Amazon, Dell or IKEA, but the basic concept is still the same: customers themselves perform tasks that were once done for them by others (Toffler, 1970). The success of these companies' business model is indisputable. And, more importantly, self-services

pay off! For example, Amtrak introduced telephone self-service by means of an IVR (Interactive Voice Response) system that allowed cost savings of $13 million; likewise, Royal Mail's IVR system led to a 25% reduction in its customer service costs (The Economist, 2004). Therefore, the combination of self-service and technology is believed "to transform the service economy in much the same way that mass production transformed manufacturing, by allowing services to be delivered at low cost in large volumes" (The Economist, 2004).

However, the infusion of self-service technology into customer relationships comes at a price. A study conducted by the market research company Forrester, in which 110 large companies were surveyed, shows that IVR systems meet customers' needs only 18% of the time, which is less than any other type of customer contact (Temkin, Manning, Sonderegger and Amato, 2004). Likewise, a study by Accenture that examined the use of self-service in the telecommunications industry, found that consumers consider telephone self-service as time consuming, confusing and impersonal (Accenture, 2004). Therefore, it comes to no surprise that self-services are often blamed for the weakening of social bonds (Gremler and Gwinner, 2000; Selnes and Hansen, 2001), loss of client control as well as hampered customer retention (Mulligan and Gordon, 2002).

The above facts point to the huge potential, but also to the great dangers of the self-service approach. Through case studies and interviews with the executives behind self-service initiatives, we have learned a lot about self-service-driven strategies and their likelihood of success. The question arising from this is: what differentiates the winners from the losers in the self-service arena? In order to address this question, we conducted numerous case studies at renowned European companies over the last eight years. Based on this extensive case study repository, we argue that the balance between high-tech and high-touch in customer relationships is the key challenge faced by the self-service domain. We will illustrate our findings by presenting in-depth case studies from two companies where we identified successful self-service practices: UBS and Swiss Re. We chose these companies because they represent successful blueprints for either an intimacy-driven or a personality-driven approach which will allow companies to combine both high-tech and high-touch. Furthermore, our research is backed with quantitative-empirical data collected by means of a survey of 1,000 executives of renowned companies in German-speaking regions such as Allianz, Deutsche Bank, and Lufthansa. The goals of this survey were to evaluate the status quo of today's self-service activities with particular regard to critical success factors and common pitfalls across different industries (see Appendix A for sample characteristics). The main finding was that self-service represents a double-edged sword. On the one hand, it allows companies to save costs, but on the other hand self-service leads to a lack of personal interaction with customers. In this study, we also found significant evidence to support our argumentation that the balance between high-tech and high-touch is the self-service domain's major challenge.

We present the implications of self-services on customer relationships in the following paragraph. After a brief outline of the research methodology we introduce the results of our cross-case analysis. In this context, the case studies of UBS and Swiss Re illustrate how these companies manage the balance between high-tech and high-touch effectively as part of their self-service initiatives. From this we discuss intimacy-driven and personality-driven approaches towards self-service and the key success factors that have to be considered for implementing these strategies.

The Industrialisation of Service

The service sector's industrialisation will have the same impact that mass production had on manufacturing. In the age of industry, scientific management, invented by Frederick Winslow Taylor, degraded workers to brainless, interchangeable production system elements. At that time, workers' tasks had been broken down into a standardised and fixed sequence of steps, also called "the one best way" (Taylor, 1911).

Today, companies have turned away from this scientific management approach and treat their employees as their most valuable resource. Peter F. Drucker emphasised that people are a company's only true resource (Drucker, 1999). Consequently, human resources concepts, such as job rotation and job enrichment, have been developed to increase employees' motivation. The brainless elements of the industrial age have finally become knowledge workers. But the standardised sequence of steps, the "one best way", is still there. It has just been outsourced to someone else: the customer. Similarly, the brainless workers at the assembly line of the past have become the self-service customers of today. Customer experience in today's industrialised service economy basically means pushing buttons, moving mice and talking to machines over and over again. What about job enrichment concepts for customers? This current, technology-driven scenario comes close to what Alan Cooper, an expert on user interaction, describes as the 'dancing bear' phenomenon: a bear dances clumsily, entertaining a circus audience and even though everyone knows that the bear is not a good dancer, they are amazed by the fact that the bear is dancing at all (Cooper, 2004). Nowadays, self-services in customer relationships largely consist of such 'dancing bears'.

Why have these 'dancing bears' evolved? Part of the answer is that executives are more concerned about

Profiling Your Self-service

Is your self-service strategy geared towards high-tech or high-touch? Although this decision is not an either-or choice, the following five questions help to identify which elements of your strategy are high-touch and which are high-tech.

High-Touch   High-Tech

(no) Do we consider technology as the key enabler for our self-service activities? (yes)

(no) Is our self-services' value proposition primarily based on cost reductions? (yes)

(yes) Do we involve all stakeholders from development to deployment? (no)

(yes) Do we implement customer's feedback in our self-service offerings? (no)

(yes) Are self-services' functionalities aligned with the customer process? (no)

Figure 1   Five Questions for Profiling a Company's Self-service Activities

the bottom line than about the customer's experience. The business pain that currently hurts executives most is the permanent and ongoing pressure to streamline processes and cut down costs. Our research confirms with current data that the primary reason for executives to introduce self-services is cost reduction (see Appendix B). Furthermore, the participating executives see the heavy use of Internet as the key self-service technology followed by kiosks, telephone and video/CD as other enabling technologies (see Appendix C).

Our research findings indicate that most executives' decisions are based on the belief that self-service technology streamlines processes while simultaneously saving money. However, this belief has to be critically reviewed as the history of ATM shows. The first ATMs had been installed in the late 1960s. Banks were eager to deploy these machines to replace costly live teller use with ATM transactions. The expectations at that time were that costs could be significantly lowered. However, none of this has been realised. It costs between $15,000 and $50,000 to deploy a single machine, the maintenance and operations expenses range from $12,000 to $15,000 per ATM per year (Stavins, 2000). Furthermore, although ATM transactions are cheaper than those involving a teller, customers use the ATM more frequently because they withdraw smaller amounts of cash during each transaction. Thus, the total number of transactions is higher, which eventually diminishes the overall cost savings. As a matter of fact, banks are losing money on their ATMs (Florian, Burke and Mero, 2004).

This example raises critical questions that executives should ask themselves with regard to the automation of services: What are the potential consequences of the introduction of self-services for our organisations? What are the implications for the different stakeholders along the value chain? Is there an opportunity for us to strengthen our business proposition? How can we successfully compete and stay ahead of the competition in a transformed self-service economy?

In order to avoid the fate of banks and their somewhat ambiguous experiences with ATMs, executives must reposition their self-service and face up to the challenges ahead. But where should companies begin to look for a competitive advantage? The answer is pretty simple: since you want your customers to do the job for you, you should first start listening to them. They ask for simplicity, control, less annoyance, higher touch, and easy-to-use technologies. By infusing personal touch into self-services companies can change the way how customers mentally perceive them. But where should executives start to create value for their companies? As a useful starting point, we recommend examining self-service activities' status quo in order to determine whether you are on the high-tech or on the high-touch side. Figure 1 shows five key questions that have to be considered along this way.

In the following section, we present two established companies that have been successful at combining both high-tech and high-touch in customer relationships – after first profiling their self-service activities. Starting from either a high-touch or a high-tech perspective, they have been able to overcome the either-or choice. A *personality-driven approach* allows companies to successfully complement their high-tech self-service with high-touch elements as the UBS case demonstrates. In contrast, starting from a high-touch position, an *intimacy-driven approach* as adopted by Swiss Re enables firms to introduce self-services while maintaining the existing level of high-touch.

Analysis and Discussion of Self-services in Practice

Research Methodology

Our research approach is based on an explanatory multiple-case study design. We therein addressed

Table 1 Overview of Case Sites

Company Characteristics[a]	UBS	Swiss Re
Description	Swiss-based universal bank	Swiss-based reinsurer
Total income/revenue	39,896	35,009
Net income/profit	14,690	1,451
Employees (FTE)	69,569	8,882
Business Segments	Wealth Management, Business Banking, Asset Management, Investment Banking, Industrial Holdings	Property & Casualty, Life & Health, Financial Services, Corporate Centre
Analysed Business Unit (BU)	Customer Service Center (CSC)	Property & Casualty
Approach towards self-service	Personality-driven approach starting from a high-tech perspective	Intimacy-driven approach starting from a high-touch perspective

[a]as of 2005; figures in CHF millions; taken from annual reports

the questions related to the "how" and "why" of our research. In this context, we were especially interested in ascertaining why self-service initiatives succeed within companies and how self-services can enhance the performance of particular processes. The deployment of case studies in order to generate explanations follows the research approach proposed by Yin (Yin, 2002).

The case data were collected in a study of UBS and Swiss Re. These sites were chosen for theoretical rather than statistical reasons, and selection was based on two criteria: purposeful sampling and a willingness to cooperate (Yin, 2002). By analysing different approaches to CRM, we adapted different views and consequently gained a more complete picture of the possible challenges (Eisenhardt, 1989). Table 1 provides a brief overview of the case sites.

The structure for the central component, the semi-structured interviews, was provided by Senger and Österle's case study method (Senger and Österle, 2002). Following the business engineering principles, this method describes three generic steps: (a) the old situation and the resulting problem perception, (b) the transformation project as well as (c) the new solution with discussions relating to the costs and benefits. For our research purpose, we customised the proposed structure in respect of the topic of how self-services can be used to enhance a company's products and services. This resulted in the following key interview questions:

❖ Self-service challenges: In which respect are self-services used to improve your products and services?
❖ Self-service impact: Which approach to managing and designing self-services did you employ to improve your products and services?
❖ Performance outcome: What are the tangible and intangible results of self-service initiatives at your company?

To clarify and elaborate on the case descriptions, they were reconciled with the interview partners, and sometimes required further interviews. In both cases (i.e. UBS voice and SwiftRe), the primary interviewee was the senior manager in charge of the self-service solution under examination. Consequently, the case data is primarily derived from interviews with senior executives. We also had access to internal data such as presentations, project descriptions, feasibility studies, and the like. We used these artefacts as secondary sources for case information in order to validate the derived data and to further extend the empirical basis of our case studies. For the case analysis, we used both within-case and cross-case analysis of the data (Yin, 2002). The objective of the within-case analysis was to build an explanation of the case by using a deduction and induction cycle. The data's validity was ensured through the use of multiple sources of evidence, the interviewees' reviews of the case interpretations and a chain of evidence provided by the case data. The cross-case analysis was carried out in order to locate and examine the similarities and differences across the two cases. The objective was to generalise beyond the data and, through this, discover the challenges that play an important role in technology-based self-service.

Does Your Self-service have Personality? – Persona Design at UBS

When Swiss-based UBS, one of the biggest financial services conglomerates in the world, decided to complement their touchtone IVR with a voice-based solution, called 'UBS voice', in 2001, they already had a high-tech self-service up and running. When profiling their self-service, UBS realised that their activities were mainly technology-driven and geared towards cost reductions. Starting from this high-tech/low-touch position, UBS's aim wasn't merely to develop an extension to the system that talks to the customer. This would have been yet another 'dancing bear'. In order to successfully complement high-tech self-services with high-touch elements, UBS embraced an approach called 'persona design'. In this context, a personality is attached to the technological user interface that interacts with the customer. By doing so, UBS aimed at bringing the customer's needs to the

forefront, thus providing efficiency, availability and speed without any button use. The goal was to develop a persona rather than a machine.

The focal point of UBS voice was to create an exciting customer experience. The customer should have the impression of talking to a nice, intelligent person, who loves her job. But the persona behind UBS voice is much more detailed than that: she is a young, trainee broker, is truly money-minded, is a college graduate, wears funky glasses, has long hair, and lives with her artist boyfriend. Furthermore, she likes to talk on the phone and sees her work as a stepping-stone to bigger and better things down the road. These characteristics have been used to design the interaction with the customer and they influence various components of the dialogue such as the sentence structure, pitch, and stream of speech. As a direct outcome of this persona-driven approach, the computer refers to itself in the first person in order to establish a close connection between the caller and the persona. For example, when calling UBS voice, the customer is greeted with *"How may I help you?"*, and not with *"What would you like?"*. Another implication of UBS's persona-centric approach is the creation of casual dialogues that reflect the straightforward, girl-next-door image that the persona's characteristics suggest. An example demonstrating this implication would be a casual *"Okay, what else can I do for you?"* instead of a rather formal *"Please state your request, now!"*. This persona-driven approach's overriding principle was to make the self-service experience as intuitive as possible for the customer.

Furthermore, persona design also facilitated UBS voice's development process in two ways. First, a persona provides guidance throughout a voice-based application's design process. How do we design the interaction with the customer? Formal or casual? Is it going to be a male or a female voice? Persona design provides answers to these kinds of questions that are essential for a customer's perception of the self-service. Second, the introduction of a voice-based self-service solution involves very different people with heterogeneous backgrounds. Making managers, programmers, interaction designers and the like talk the same 'language' is quite a challenge, as all of them have their own view of 'the user' and what he likes, dislikes or what she might think of this and that feature. In this context, a concrete persona with a detailed background and specific characteristics denotes a powerful communication tool that helps to shorten those endless debates.

There has been much discussion among practitioners and researchers on how much effort should be expended on making a machine sound human (Yamaguchi, Suzuki and Ramamoorthy, 2003). Opponents of the 'humanisation of machines' argue that this would manipulate the user's experience, which eventually leads to disappointment when the customer discovers that she's talking to a machine rather than

to a human. However, UBS voice proves those opponents wrong. Usability tests showed that customers relate exactly those characteristics to the machine voice that the initiators wished to convey. In fact, results indicated that callers really enjoy talking to UBS voice and find the navigation and interaction intuitive. Therefore, UBS considers this approach as far more than just an extension of a self-service's usual design process. Persona design became an indispensable element of the self-service development process.

How Intimate is Your Self-service? – Service Automation at Swiss Re

Starting from a high-touch/low-tech perspective, Swiss Re, the world's largest reinsurer, established self-service intimacy along the lines of product, market and customer. In 1999, the small to medium-sized facultative business at Swiss Re faced a tough choice triggered by increased cost pressure: either substantially reduce this kind of reinsurance business – which would eventually mean leaving the business and market share to the competitors - or cut the administration costs substantially. Swiss Re decided on the latter, and developed an e-business reinsurance solution called SwiftRe in order to meet this challenge. Although the streamlining of processes and the realisation of cost reduction were drivers, the guiding line during SwiftRe's development was to tailor the online functionalities exactly to the customers and markets' needs. Therefore, Swift Re was developed by experts who know the business and understand the particular needs of the markets and clients.

Swiss Re's intimacy approach consists of three elements: market, client and product. First of all, in order to ensure the system's market orientation, the SwiftRe development team closely collaborates with the underwriters in the respective countries. By means of workshops and during in-depth interviews, underwriters explicate their business knowledge, which is then implemented in SwiftRe. Furthermore, every system launch involves a pilot phase with lead users to ensure that that the system caters to the market's specific needs. Secondly, SwiftRe's online functionalities are tailored to the customers' needs when they manage facultative reinsurance business. The starting point was an analysis of the customers' process and the sequence of steps that they have to perform. This served as the basis of the development of SwiftRe's functionalities, such as the modification, renewal and cancellation of placements and the like. This approach resulted in a user-friendly design and high usability: data requirements and input fields have been kept to a minimum; only information needed for pricing and exposure purposes and for accumulation control have to be entered. Moreover, apart from the client's input during the pilot phase,

events during which clients have the opportunity to provide further input and feedback to SwissRe's eUnit team are held on a regular basis. These events also offer the opportunity to present new features to the clients and to discuss their implications. This strong focus on clients' input and the input's incorporation into the system's design, is a major SwiftRe strength. Finally, SwiftRe has a clear product focus: only small and medium-sized facultative business is placed online in order to reduce inefficiencies. Consequently, self-services are limited to opportunities during which financial benefits can be reaped for Swiss Re and its clients alike. These benefits are shared between Swiss Re and its clients, which eventually means that transaction costs for both parties are lower. Furthermore, SwiftRe's clearly defined scope has led to more interaction and better relationships with customers, since underwriters can now focus on large and complex risks. SwiftRe provides Swiss Re and its clients with more time to jointly focus on complex business approaches and innovative solutions and, consequently, on increasing personal contacts. So far, SwiftRe's results are astonishing by any standards. It is currently available in more than 40 countries and is used by over 200 clients. It has to date transacted more than 20,000 facultative acceptances, which is up to 30% more of the targeted business than originally expected.

Implications for Practice

Most companies consider high-tech and high-touch as an either-or choice. However, the examples of Swiss Re and UBS demonstrate that taking the best of both worlds leads to success. Depending on their starting point, companies can adopt an intimacy-driven or a personality-driven approach in order to reposition their self-service. By doing so, firms will be able to propel their self-service into a lucrative position that allows them to combine both high-tech and high-touch (see Figure 2).

The UBS and Swiss Re experiences reveal the spectrum of choices available and illustrate the trade-offs involved in each choice. In order to achieve the balance between high-tech and high-touch, companies have to consider several critical success factors that will help them to avoid the dancing bear syndrome.

Involve Your Business Partners End-to-end. Companies should strive to integrate all self-service stakeholders from the self-service's development to its deployment. In this context, Ford provides a cautionary tale. Currently, more than 80% of Ford's customers browse the company's Web site before entering a dealer's showroom (The Economist, 2005). Consequently, Ford contemplated an approach that would allow those customers to buy cars directly via its web site. The major weakness of this otherwise innovative strategy was that the attempted transition to a self-service company hadn't involved one major stakeholder: its dealers. When the dealers finally learned of Ford's plans, they were displeased, as they were afraid that they would be omitted from the value chain. Ford was eventually forced to relinquish its idea and instead developed a program called 'Internet Approved' (Gilbert and Bacheldor, 2000). This time the company collaborated with its dealers right from the start.
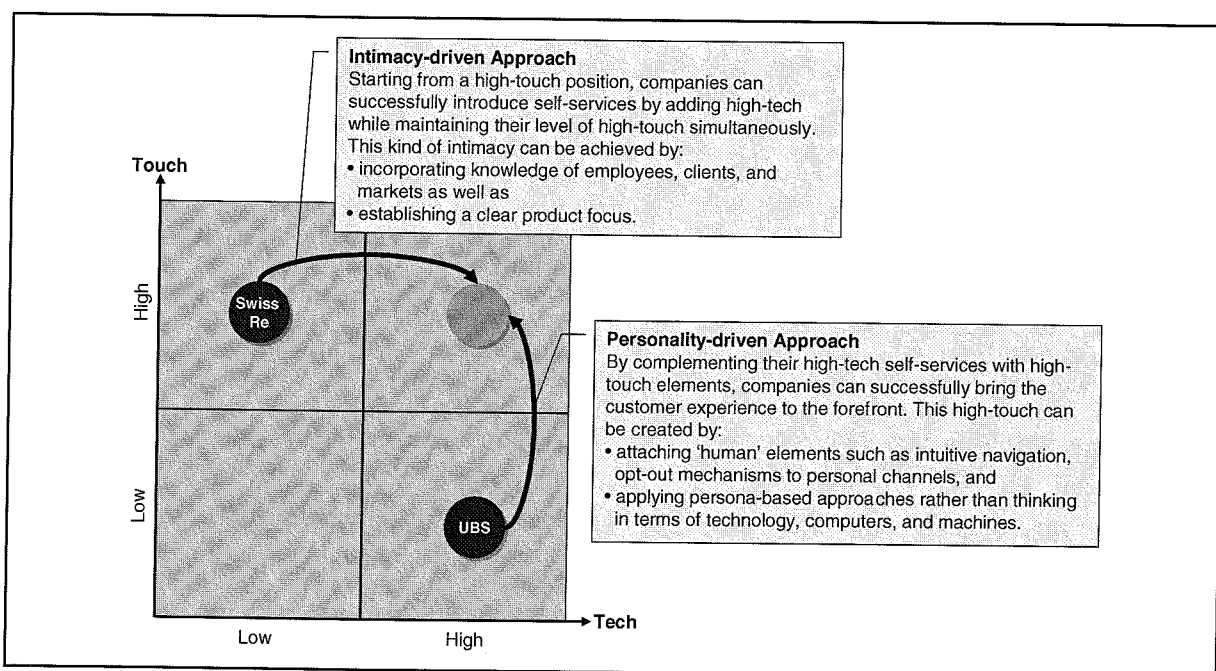

Intimacy-driven Approach
Starting from a high-touch position, companies can successfully introduce self-services by adding high-tech while maintaining their level of high-touch simultaneously. This kind of intimacy can be achieved by:
• incorporating knowledge of employees, clients, and markets as well as
• establishing a clear product focus.

Personality-driven Approach
By complementing their high-tech self-services with high-touch elements, companies can successfully bring the customer experience to the forefront. This high-touch can be created by:
• attaching 'human' elements such as intuitive navigation, opt-out mechanisms to personal channels, and
• applying persona-based approaches rather than thinking in terms of technology, computers, and machines.

Figure 2 Strategies for Managing Self-service Initiatives

One company that has done a very good job of involving stakeholders from start to finish is Swiss Re whose case was presented above. When starting its self-service activities, Swiss Re's underwriters offered the same resistance as the Ford dealers, because they thought that SwiftRe would replace them. However, unlike Ford, Swiss Re collaborated closely with its underwriters right from the beginning. It was made clear to them that SwiftRe supported and would not replace their work since the application focused on one particular part of the business: small and medium-sized risks. Consequently, the underwriters became an essential part of the development process, providing a valuable source for SwiftRe's business logic. As the Swiss Re case showed, underwriters now have even more personal contacts with their clients than before SwiftRe was introduced.

Don't Persuade Your Customers – convince them. While sending high-gloss brochures that praise the 'simplicity' of self-service offerings, or introducing charges to steer customers towards the online channel, many companies forget that providing added value is the best motivation to foster self-services. For Swiss Re, the self-service platform provides process support for both underwriters and customers. The gained efficiency and time savings are equally shared between the company and its customers and are invested in the customer relationship: innovative solutions for larger and more complex risks are jointly elaborated and personal contact is minimised in respect of repeated small transactions. Swisscom provides an example of how added value is generated in the business-to-consumer domain. Switzerland's largest telecommunications provider offers its fixed line customers an online billing function. On Swisscom's 'eBill' platform, customers find a number of graphic analysis tools with which to monitor their expenses over time and across different connection types and with which to set cost alerts and limits. While Swisscom is saving money with every non-paper invoice, customers obtain support for their control of costs. These are the mechanisms that encourage them to use self-services rather than forcing them to do so.

See Self-service as a Supplement, not as a Replacement. When thinking about self-service channels, many companies tend to perceive the contact points with their customers as conflicting rather than complementing. However, options for integrating self-service channels with personal contact are manifold. Take Lufthansa as an example: although most passengers accept the self-check-in terminals, Lufthansa offers personal assistance if passengers have problems with the process. DKV, a leading German insurance company, offers access to a 'call-back button' during any step when guiding a customer through a self-service process like reporting an accident or changing contract details. These examples make it obvious that offering ways to 'opt out' from the self-service channel at any time, thereby giving the customer a higher degree of control, is a crucial factor in self-service designs. Likewise, offering 'opt in' options may also leverage opportunities in the customer interaction: the latest generation of ATMs is already geared for 'dialogue' with the customer. Based on customer analytics, individual offers are presented to ATM users during waiting time. If interested, the customer may request a phone call or information via email through his 'dialogue' with the machine.

Start with Your Customers' Processes, not with yours. More often than not, when analysing how firms adopt a self-service approach, we see that they lack a clear understanding of what they're up to. Successful companies fully understand their customers' processes, i.e. the sequence of activities that patrons perform to purchase and use a product or service. They therefore develop intuitive user interfaces by designing self-service functionalities in line with their customers' expectations. Part of a smartly positioned self-service offering's appeal comes from explicitly implementing knowledge from clients and markets by taking an outside-in perspective. That's exactly what Swiss Re did when developing its online reinsurance solution. In contrast, companies that primarily focus on the streamlining of internal processes and the realisation of cost reductions - as most firms do - fail to tailor their self-service products to their clients and customers' needs.

How is an outside-in view achieved? The answer is pretty simple: first start listening to your customers and then engage them in a dialogue. Consider eBay's so-called 'town hall' meetings. During these events when users are invited onto the website's message boards, eBay's executives listen to the users and feel the community's pulse. This provides them with merciless feedback, particularly if something goes wrong. With the help of this self-service, customers have literally become the company's most valuable employees.
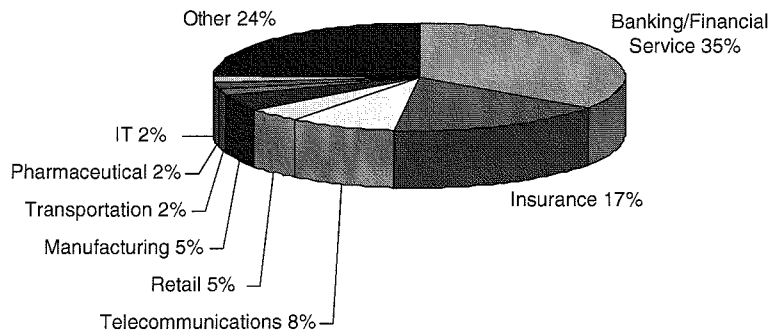
Conclusion and Outlook

Self-services are here to stay. The question is: which approaches will prove to be successful and which ones are doomed? The UBS and Swiss Re cases provided insightful examples of innovative and well-crafted ways of successfully positioning a self-service offering. Most companies aren't self-service innovators. But a self-service does not have to be novel to succeed. To a large extent, the answer to the question will therefore be influenced by a company's capability to manage the trade-offs between the self-service environment's high-tech and the high-touch that customers require. By avoiding an either-or approach and carefully considering the above-described

316

factors, companies can successfully combine high-tech and high-touch.

What the future will hold when high-tech and high-touch are successfully combined in self-service offerings can be witnessed firsthand at Second Life, a 3-D virtual world built and owned by its residents. Founded in 2003 it has become a visionary playground of currently almost 2.5 million people from around the world. Each resident can create his own persona adding the necessary feeling of high-touch to the virtual high-tech world. Like in the real world people can meet other residents, buy land, build houses or start their own business (Ondrejka, 2004). Although it is a virtual world, money in Second Life is real and has already produced a millionaire in U.S. dollars. Ailin Graef (or Anshe Chung which is her persona's name) made a fortune by developing and selling properties for real-world corporations (Hof, 2006). By setting up branches in the virtual world, businesses such as Wal-Mart, American Express and Intel use Second Life to evaluate new ways of developing, designing and marketing innovative products and services.

In the end, it is the customer who decides where to get in touch with a company – the latter will have little choice in setting priorities in respect of the channels, but must be prepared to always present its value proposition at a consistently high quality. If done right, self-service seamlessly integrates into the overall customer perception of a company and creates value for both parties. If done wrong, customers will go their separate ways, as the story of Clarence Saunders illustrates: In 1937, twenty-one years after he successfully launched the first self-service grocery store, Saunders designed a completely automated store, called "Keedoozle" (for "Key Does All"). Customers entering the store were handed a small pistol-like key that they placed in the keyhole below the goods they wished to buy. The quantity was determined by the number of times they pulled the key's trigger. By being too far ahead of his time, Saunders placed too much emphasis on high-tech and lost sight of the high-touch that customers require. The machinery proved unreliable, particularly at busy times, and the resulting delays, coupled with high maintenance costs, eventually set the seal on Keydoozle's downfall. It had been Saunders's version of the dancing bear.

Appendix A. Sample Characteristics

Other 24%

Banking/Financial Service 35%

IT 2%

Pharmaceutical 2%

Transportation 2%

Manufacturing 5%

Retail 5%

Telecommunications 8%

Insurance 17%

Appendix B. Reasons for Introducing Self-service

Motivation for introduction	Cost reduction	Increase customer satisfaction and loyalty	Reach new customer segments
Percentage of respondents	86%	77%	32%
Ranking	1	2	3

Appendix C. Diffusion of Self-service Technologies

Deployed Technology	Internet	Telephone/Voice	Kiosk/Automat	Video/CD
Percentage of respondents	96%	50%	23%	16%
Ranking	1	2	3	4

References

Accenture (2004) *Helping Customers Help Themselves: Self-Service Opportunities for Telecommunications Companies.*

Bitner, M.J., Ostrom, A.L. and Meuter, M.L. (2002) Implementing successful self-service technologies. *Academy of Management Executive* **16**(4), 96–109.

Cooper, A. (2004) The inmates are running the asylum: why high tech products drive us crazy and how to restore the sanity, Sams.

Drucker, P.F. (1999) Knowledge worker productivity – The biggest challenge. *California Management Review* **41**(2), 79–94.

Eisenhardt, K.M. (1989) Building theories from case study research. *Academy of Management Review* **14**(4), 532–550.

Florian, E., Burke, D. and Mero, J. (2004) The money machines. *Fortune (Europe)* **150**(2).

Gilbert, A. and Bacheldor, B. (2000) The big squeeze. *InformationWeek Online* (March 27).

Gremler, D.D. and Gwinner, K.P. (2000) Customer-employee rapport in service relationships. *Journal of Services Research* **3**(1), 82–104.

Hof, R.D. (2006) My Virtual Life. *Business Week*, May 1.

Meuter, M.L., Ostrom, A., Roundtree, R.I. and Bitner, M.J. (2000) Self-Service Technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing* **64**(3), 50–64.

Mulligan, P. and Gordon, S. (2002) The impact of information technology on customer and supplier relationships in the financial services. *International Journal of Service Industry Management* **13**(1), 29–46.

Ondrejka, C.R. (2004) Aviators, Moguls, Fashionistas and barons: Economics and ownership in second life, available at SSRN: http://ssrn.com/abstract=614663.

Prahalad, C.K. and Ramaswamy, V. (2000) Co-opting customer competence. *Harvard Business Review* **78**(1 January-February), 79–87.

Selnes, F. and Hansen, H. (2001) The potential hazard of self-service in developing customer loyalty. *Journal of Service Research* **4**(2), 79–90.

Senger, E. and Österle, H. (2002) PROMET BECS – A project method for business engineering case studies. Institut für Wirtschaftsinformatik, Universität St. Gallen.

Stavins, J. (2000) ATM Fees: Does bank size matter?. *New England Economic Review*(January/February), 13–24.

Taylor, F.W. (1911) The principles of scientific management. Harper, New York.

Temkin, B.D., Manning, H., Sonderegger, P. and Amato, M. (2004) Scenario design: A disciplined approach to customer experience. Forrester.

The Economist (2004) You're hired, September 16, 2004,.

The Economist (2005) Crowned at last, The economist, April 2, 2005.

Toffler, A. (1970) Future Shock. Amereon Ltd., New York.

Wikström, S. (1996) Value creation by company-consumer interaction. *Journal of Marketing Management* **12**(5), 359–374.

Yamaguchi, H., Suzuki, K. and Ramamoorthy, C.V. (2003) The humanization, personalization and authentication issues in the design of interactive service system. *Journal of Integrated Design and Process Science* **7**(4), 1–11.

Yin, R.K. (2002) *Case Study Research. Design and Methods* vol. 5. Sage Publications, London.
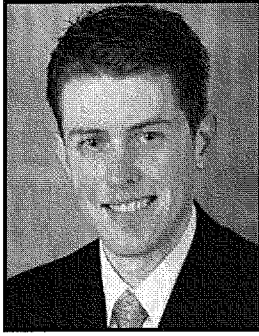
HARALD SALO-MANN, University of St. Gallen, Institute of Information Management, Mueller-Friedberg-Strasse 8, CH-9000 St. Gallen, Switzerland. E-mail: harald.salomann@unisg. ch

Harald Salomann is a Research Associate at the Institute of Information Management at the University of St. Gallen, Switzerland. His research interests include the infusion of technology in customer relationships by means of self-services as well as issues regarding privacy and trust in the field of customer relationship management (CRM).

LUTZ M. KOLBE, University of Göttingen, Institute of Information Systems, Chair of Information Management, Platz der Göttinger Sieben 5, D-37073 Göttingen, Germany. E-mail: lkolbe@uni-goettingen. de

Lutz Kolbe is a Professor at the University of Göttingen and holds the chair of Information Management. Prior to that, he headed the Competence Center Customer Management at the Institute of Information Management. His research interests are customer relationship management, security management as well as strategic information management.

MALTE DOUS, University of St. Gallen, Institute of Information Management, Mueller-Friedberg-Strasse 8, CH-9000 St. Gallen, Switzerland. E-mail: malte.dous@ unisg.ch

Malte Dous is a Research Associate at the Institute of Information Management at the University of St. Gallen, Switzerland. His research focuses on the organisational design of internal client relationships between IT and business units as well as on the management of customer knowledge.

WALTER BRENNER, University of St. Gallen, Institute of Information Management, Mueller-Friedberg-Strasse 8, CH-9000 St. Gallen, Switzerland. E-mail: walter. brenner@unisg.ch

Walter Brenner is Professor of Information Systems at the University of St. Gallen and Managing Director of the Institute of Information Management. His research focus is on integrated information management, customer relationship management and innovative technologies.