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Implementing Self-Service Technology To Gain Competitive Advantages

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ABSTRACT

Choosing, implementing and managing effective self-service technologies are challenging tasks for most firms. While some self-service technologies could be quickly adopted, others are resisted. This paper examines what a firm should consider in order to encourage customers to at least try, and eventually adopt, the SST offered by a firm into the customer's regular routine. Factors that encourage the customer to try a new self-service technology for the first time and factors impact customer satisfaction and dissatisfaction will be addressed. A practical guideline for developing and implementing successful SST will be proposed.

Key words: Self-service technology, Competitive advantage, Customer Relationship management.

INTRODUCTION

Pick up any respected magazine or trade journal on management or marketing these days and you will likely stumble upon at least one article for Customer Relationship Management (CRM). One of the growing trends in CRM is the use of self-service. Technology is playing an increasing role in self-service and CRM in general. There can be advantages on both sides of the self-service technology coin. The company has the potential to serve more customers with fewer resources, and thus reduce costs, and the customer has the ability to customize a product or service for herself and also choose a time when it is most convenient for her to partake of it. ATM's and pay-at-the pump gas stations are required these days if banks and gas stations want to stay competitive. It's hard for many of us to remember a day without those first SST's.

"Have it your way." "Help yourself." These are the battle cries from the front lines of today's customer service campaigns. When it comes to knowing exactly what customers want, there are no better authorities than the customers themselves. Predicting what will appeal to customers can be tricky. So, why not make it easy for them to help themselves? They'll get the service they want, in just the way that suits their needs." (Fickel, 2000, Pujari 2004).

Well, that's how it's supposed to work. But in many instances firms jump onto the self-service bandwagon without much forethought. Sure, self-service is one way to reduce costs, but poorly implemented self-service technologies (SST) can also increase costs and alienate customers. It isn't just about operational efficiencies, it's about adding customer value. The SST you choose should be an extension of your firms existing company philosophy.

"Self-service Technology empowers authorized human users (as well as computer applications) to obtain or update information and perform qualified transactions from enterprise databases, on their own using natural language, via communications channels such as email, web, network and voice anytime without depending upon human actions. Self-service Technology helps companies to reduce operating cost like training, real estate, equipments, communications and scaling up" (canbase website, 2003, Hall 2004)

Choosing, implementing and managing effective SST's is a challenging task for most firms. There are many unknowns (Heresniak, 1997, Ceriello, 2000, Bitner, 2001).

- Why are some self-service technologies quickly adopted while others are resisted?
- What makes a customer want to try a new SST for the first time?
- What factors impact customer satisfaction and dissatisfaction?
- What things should a firm consider in order to encourage customer trial and adoption?
- How can firms incorporate technology into their service delivery systems most effectively?
- What can firms do to encourage more rapid customer adoption of their SSTs?

To answer these questions, it is necessary to explore some fundamentals about the SSTs. Types of SSTs will be discussed followed by an investigation into factors affecting SST adoption and use. Some management strategies will then be proposed to increase the chance of successfully implementing the SSTs. A brief discussion on the major findings and directions for future research conclude this paper.

TYPES OF SELF SERVICE TECHNOLOGIES

There are four primary types of SST.

- 1) Telephone & interactive voice response (IVR) systems - Many companies utilize this form of SST for customer orders, customer billing inquiries, and customer surveys. Credit card companies, insurance companies, pizza restaurants, and even universities have taken advantage of these.
- 2) Interactive freestanding kiosks - Many malls and retail outlets offer these both inside and outside their stores as a way to help you determine availability of a product, as well as to where to locate it in their facility. Some even print coupons. Large discount chains use kiosks in each store to help you determine what size battery or windshield wiper to put on your car, for example. You will also find kiosks at airports and hotels that print airline tickets and allow for quick checkout, and at movie theaters and malls that print movie tickets.
- 3) Internet based or other on-line connection systems - ATM's and pay-at-the-pump gas stations are two widely used examples of on-line technologies. Internet banking and bill management services are also becoming quite popular. Package delivery services also allow you to track packages 24 hours a day now.
- 4) Video/DVD/CD based technologies - This type of SST is typically used for educational purposes. Corporate entities use this media to train their employees, to familiarize sales representatives with new products, and to introduce new products to consumers. Universities have also gotten into the act in the last decade, providing undergraduate, graduate, and continuing education classes by video and CD formats.

Business Goals for SST

Firms are typically seeking to fulfill at least one of three primary business goals when they choose to enter the self-service arena.

- 1) Customer service (technology delivered customer service) --The intent here is to provide the customer service without tying up the company's human resources. If done correctly, it can also save firm money. A few examples of this are: to provide product information to consumers, Internet based package tracking, on-line troubleshooting systems, and phone and Internet banking.
- 2) Enabling direct transactions - customers order, buy, and exchange resources with the firm without any direct interaction with the firm's employees. These sorts of SST include: on-line shopping, automated kiosks, on-line stocks/security trading, and on-line travel/ticket services.
- 3) Educational - enable customers to educate and train themselves. These include: phone based information lines, information web sites, training videos/DVD/CD and satellite TV-based training.

The Customers

The implementation of self-service technology can improve the quality of services that firms provide to their customers. Technology can make the task of shopping easier and more manageable. Technology can add convenience and enhance time-management as well.

"Self-service technology can lead to improved customer service, empowered customers and employees, and increased efficiency. Where many corporations are missing the boat, however, is how they apply technology to solve problems. Without considerable forethought and planning, you might bypass simple and technologically easy-to-implement approaches for expensive, complex, and unhelpful applications." (Quiniones, 2001)

"The growth of new technologies is allowing for service firms and retailers to increasingly incorporate technology

into their operations. These new technologies are revolutionizing the retail environment; however, many consumers do not necessarily see the incorporation of technology as an improvement." (Meuter et al, 2003). In their research, Meuter and his team surveyed over 800 consumers utilizing a web-based survey. Their central focus was to study what they termed 'Technology Anxiety' and its impact on consumer usage of self-service technologies. "The finding indicates that respondents with higher levels of technology anxiety use fewer self-service technologies. In addition, technology anxiety was also found to influence overall feelings of satisfaction, intentions to repurchase and the likelihood of participating in positive word of mouth." (Curran et al, 2003)

"SSTs represent a wide range of IT-based technologies, such as airline check-in systems for e-ticket holders, in-store kiosks for product information, and web-based purchasing. According to the Gartner Group, by 2005 more than 70% of customer service interactions for information and remote transactions will be automated. SSTs can and do fail. The ATM that mistakenly eats a bankcard and the interactive voice response system that mishears an order are a few examples. About half of the time customers recall failures rather than successes when using SSTs. And in nearly all cases (96%), customers blame companies and their technologies, not themselves, for these dissatisfying experiences." (Nakata, 2003)

Customers are always in need of better purchasing opportunities. But very often firms fail to visualize the customers 'vision'. What the customers expects and what he perceives he gets has a great impact on their satisfaction or dissatisfaction and their propensity to return to your service, or to seek alternatives from competitors.

Firms pursue SST's for many reasons. Some of these are; customer demand, cost reduction, to improve service levels, to improve customer satisfaction, the firms need for new delivery channels (for both new and old customers) and to gain competitive advantage. But in the rush to implement their SST firms often disregard technology failures and the associated risk of losing customers because of technology related difficulties.

FACTORS AFFECTING SST ADOPTION AND USE

There are many factors that contribute to or detract from customer adoption rates and customer satisfaction. Some of these are:

- Quality of the products
- Services offered by the organizations and firms
- Cost of the product
- Presentation of the services
- Design of the SST
- The SST's ability for service recovery (even if caused by the customer),
- The way the firm promotes/advertises the SST,
- The way the firm manages and prevents SST failures,
- Alternate choices for the same service (offered by the firm or competitors),
- The firm's ability to keep the SST updated and to continuously improve the SST

The implementation and adoption of new technology brings several questions into the minds of the consumers. In this regard it can be said that self-service technologies are an effective source to reduce costs and to increase the number of customers for the firm. It can also go the other way, if customers either won't try the new SST, or try it once and go running to the competitor. The question is 'what does my customer value, and how will my new SST provide that value?'

Communication has been found to influence the adoption of technology (Lee et al, 2002). In Lee's study he found that written and spoken communications from formal institutions had a positive impact on the customers decision to adopt a new technological innovation. Moreover, they found that conversational communication greatly influenced adoption decisions. The combination of information from firms, family and friends had the strongest impact. Lee and his team surmised that since conversation is interactive, learning effects are increased and this leads to a behavioral change toward adopting a new innovation. This tells us that firms implementing a new SST need to communicate in both written and conversational modes. They should demonstrate their product to the best extent possible and allow for interactions between their personnel and the potential customer.

Communication is vital to letting the customer know that the SST exists. Once they know it's there, then the firm

has to concentrate on attracting the customer to try their SST. 'Customer readiness' has three components (Lee et al, 2002):

- 1) Ability -- customer's perception of capability to use the SST
- 2) Role clarity -- the customer knows what to do
- 3) Motivation -- customer perceives a benefit to trying the SST as opposed to using an alternate channel.

The consumer-readiness variables above were strongly supported via interview studies and are key predictors of customer SST trial (Bitner et al, 2002). In Bitner's study her team found that as long as the customer had positive feelings related to the 3 variables above, the likelihood of them trying the SST was increased. Repeated use and commitment to the SST was dependent upon the first experience being pleasurable and beneficial to the customer. These same variables were noted as adoption factors in Neuter's study in 2000. Nakata's 2003 study had similar results. Nakata used the term "dark-side" to describe bad SST experiences and notes that these dark-side experiences can turn into customer loss. Future developers of SST's would be wise to take note.

CUSTOMER SATISFACTION WITH SST'S

There are many factors that can affect the customer's perception of benefits and value received using SST's. As research indicates, what customers want from a SST encounter isn't really all that different from an interpersonal service encounter. A 10-year study of customer service quality (Berry and Parasuraman, 1994) in the United States revealed ten lessons firms should heed in order to achieve excellent service. There were:

- 1) Listen to customer – Conformance to company policy is not quality; conformance to the customer's specifications is.
- 2) Reliability – If a service is unreliable, apologies and a friendly staff cannot compensate for it.
- 3) Basic service – Nothing fancy, no empty promise. Just give your customers the fundamentals and performance.
- 4) Service design – Service design includes employees, equipment, and the physical environment. The failure of any one component compromises quality.
- 5) Employee Research - Employees experience the firms' service system everyday. They are the performers of the service and a valuable resource for improvements.
- 6) Servant Leadership - Servant Leaders have to inspire and enable their servers to do their best. Set an example as the leader.

These important lessons are not mutually exclusive; they all work in concert (Berry and Parasuraman, 1994). Research on customer satisfaction with SST's reveals many parallels to the general service quality study above. In a study of 823 incidents involving SST's, 56% described their encounters as satisfactory. Satisfaction with the SST revealed 3 main groupings of factors. Customers liked SST's that bailed them out of immediate or troubling situations, that they perceived gave them a relative advantage by using the SST, and "it did it's job" (it functioned as intended). (Meuter et al 2000). A later study in 2002 revealed similar factor groupings. Customers like SST's that bail them out of difficult situations, that are better than the interpersonal alternative, and "they work". (Bitner et al 2002).

IMPLEMENTATION STRATEGIES FOR GAINING COMPETITIVE ADVANTAGES

Successful implementation of the SSTs project requires thorough studies of the needs of all involved parties and well-planned implementation strategies. Following recommendations may be used as the guidelines for firms that are planning to adopt SSTs.

1. Research what the customer values and focus on customer needs. Not all customers have the same level of expertise with various technologies. Just because the project team and the technicians know how to use your SST does not guarantee that all your customers will. You may have to provide phone or on-line chat support for an Internet based technology. You may need to provide an on-screen tutorial for your kiosk. Make your application user-friendly to even the most technically challenged user. Use focus groups, send your software writers to the field to observe alpha testing, go the extra-step to make sure your SST is focused on the customer, and not just a way to reduce staff costs (Henricks, 2002). Success with SST is dependent upon customer-focused design (Bitner et al 2002). Adequate customer research is the only way to achieve this. Predicting customer appeal is not easy. "Neat ideas" may or may not add value to your customer. (Fickel, 2000) Spend

your time and money where it counts. Listen to your customer and strive to achieve more than they expect. (Berry and Parasuraman, 1994).

2. Have a clear strategic purpose for the SST. Just because your competitor utilizes SST, this is not a good reason for you to introduce one. You might be able to reduce costs, increase customer satisfaction and reach new customer segments, simultaneously, or you might achieve chaos. The strategic purpose of your SST is just as important as its design. If customers perceive you are only implementing the SST as a cost-savings measure, this can lead to customers having a negative attitude about your SST (Bitner et al, 2002). To encourage adoption and repeated use, you want to provide benefits over and beyond what the alternatives provide, in order to invoke positive feelings about your SST.
3. Provide protection and reassurances for privacy and security. Plan for hackers and cheaters. If there is a way to obtain private customer or employee data there is a person willing to try it. Online and interactive voice response technologies are especially vulnerable to this. Make sure employees and customers are informed of the rules and measures for security and provide training if warranted. This will build trust with your customers. Security measures can be expensive, don't forget to plan and budget for them throughout the life of the SST. (Stanley and Pope, 2000). However, there are some service options that are not suitable for SST due to security and privacy concerns. (Henricks, 2002). Be sure and look into this one early in your research and design phases. You may find out your service is not a good option for SST (for example: firearms, explosives, alcohol, tobacco, chemicals). The price for extreme security could reduce your desired margin.
4. Practice Teamwork when designing, building and maintaining your SST. It will take many talented people to pull off any project, and SST is no exception. It has to be researched, designed, produced, inspected, tested, maintained, promoted, and constantly improved. You will need a cadre of various talents to keep it at its best. Keep all the functions involved and you can maintain your competitive advantage. Communication among team-members will provide many opportunities for improvement as well as identify potential failure modes as the service is matured.
5. Minimize SST Failure potential. The largest percentage of negative responses received in a recent SST customer survey was attributed to SST failure. A major complaint about SST's was that there was often no recovery system when the SST failed (Bitner et al, 2002). One study revealed 43% of customer dissatisfaction was SST technical failure. These were followed by 36% process failure, 17% technical design and 4% customer fault (Neuter et al, 2000). Amazingly, many customers attempt to rectify the error themselves, with or without assistance from the SST owner, instead of switching to an alternative (Nakata, 2003). Obviously, firms need to develop robust systems and provide for on-the-spot recovery whenever possible.

There are 3 simple questions the firm can ask themselves about their planned SST service. If they can't provide positive answers to each, then they haven't minimized their SST failure occurrence. The firm must provide the basic requirements for customer satisfaction. The 3 questions are; Does it work? Is it better than the interpersonal alternative? And what happens when it fails? (Bitner et al, 2002). The third item is very important because it relates to service recovery and has the most potential for inconveniencing the customer. One of the main reasons customers seek out SST's is because of the convenience factors (Berry et al, 2002).

Imagine being in a hurry, spending time to find the SST and following the SST instructions, only to have it malfunction. Now you have a frustrated customer in whom you may have induced "technology anxiety". Instead of winning a customer with your SST, you've alienated one and may have helped your competitor.

Part of avoiding failure is to have properly trained personnel for your SST alternatives. Training chat center and help-line employees should be accomplished before implementing those alternatives. (Fickel, 2000)

6. Advertise, promote, and market like a madman. You won't get many takers on your new SST if no one knows about it, or they know about it and don't know where it is or how to use it. Provide staff training and customer information in multi media. Let your customers know the benefits of your new service delivery mode. Awareness is a big part of SST success.
7. Plan for updates, repairs, maintenance and general continuous improvement (CI). Contingency planning is very important. The product life cycle for most innovative technologies is rather short. A firm must be able to evolve and adapt. (Bitner et al, 2002) There are two main business reasons you should practice CI. The first is called

competition. If it can be copied, the copycats will be right behind you. The second is call good business. Customers will expect the same excellent service at a kiosk, computer terminal, or phone as they expect in person. You will need to stay on top of the technology and provide more and better benefits than your competitors.

8. Give the customer alternative choices and a simple escape from the SST. This probably one of the most frustrating experiences a customer can have, getting trapped in your technology with no ability to contact another living being. Interactive voice response (IVR) and some Internet services excel at what I term "customer entrapment". Many individuals have gotten captured in an infinite loop with their credit card company's "customer support line". Or, how about the on-line shopping application and there are no phone numbers on the website, anywhere. Do not attempt to force all customers through your SST. The result will create dissatisfied customers (Bitner et al, 2002). Even if your technology is robust and reliable, customers need to use alternate routes to your service from time to time. (Unruh, 1996) Not everyone has a computer, or a phone, and those of us who do know that they are not always operational. Prominently display instructions for alternative measures on your SST. This should include, phone numbers, Internet address, and the physical address of the nearest customer service centers.

CONCLUSION

Before a firm makes the leap into adding SST to their product/service line, they need to invest the time in seeing if they are ready themselves. Simply automating an already flawed customer-service function will not improve wait times, or gain any new permanent customers. Self-service is just another channel by which to serve the customer. Customers want what they have always wanted. They want reliable, affordable, quality service that is convenient and easy to acquire. If your firm can't provide an SST that is at least as reliable, if not more so, than your no-technology customer service, then your firm isn't prepared to properly implement SST.

In the book "Customers Mean Business" author James Unruh speak of a customer-service survey in which they found that technology ranked third, behind a pro-customer company culture and employees as the most important requirements for good customer service. The researchers "realized that technology could be used most effectively when it appealed to something more than customer expectations about service, such as responsiveness or reliability" (Unruh, 1996). Therefore, the first thing a firm should look at is the 10 lessons mentioned above from the 1994 Berry and Parasuraman study. If you are already doing all those things well, then you have a head start on being able to achieve success with a SST. If not, you must achieve the basics first. There is no machinery or software in the world that can overcome the shortcomings of a poor design or implementation (Quinones, 2001). The firm must still appeal to those deeply held basic human values of security, control, and self-esteem (Unruh, 1996).

The thing to remember about self-service is that the customer isn't just helping herself; she is relying on you to make it easy for her to help herself. The customer's ability to acquire quick and easy service will influence the choices they make. (Leonard et al, 2002). Make it easy and rewarding customers for using your SST, and they will keep coming back. Remember, the SST isn't just for the firm's benefit; it's intended to provide value to the customers.

REFERENCES

- Berry, Leonard; Seiders, Kathleen; and Grweal, Dhruv. (2002). "Understanding Service Convenience," *Journal of Marketing*, May, Vol. 66 Issue 3, pp. 1-17.
- Berry, Leonard; and Parasuraman, A. (1994). "Improving service quality in America: Lessons Learned," *Academy of Management Executive*, Vol. 8 Issue 2, pp. 32-52.
- Bitner, Mary (2001) "Self-Service Technologies: What Do Customer's Expect?" *Marketing Management*, Spring, Vol. 10 Issue 1, pp. 10-11.
- Bitner, Mary; Ostrom, Amy; and Neuter, Natthew (2002). "Implementing Successful Self-service Technologies," *Academy of Management Executive*, November, Vol. 16 Issue 4, pp. 96-109.
- Canban quote (2003) as retrieved from http://www.canbase.com/ss/overview_btm, November 26, 2003.

- Ceriello, Vince (2000) "What's behind the curtain for self-service technology," *Employee Benefit News*, November Vol. 14 Issue 13, pp. 31-33.
- Curran, James; Meuter, Matthew; and Surprenant, Carol (2003) "Intentions to Use Self-Service Technologies: A Confluence of Multiple Attitudes," *Journal of Service Research*, February, Vol. 5 Issue 3, pp. 209-224.
- Fickel, Louise. (2000) "Power to the People." *CFO Magazine*, August 2000 issue.
- Hendricks, Hark. (2002) "Self" Respect. *Entrepreneur Magazine*, July 2002 issue.
- Heresniak, E.J. (1997) "Self-service that's out of service", *Across the Board*, January, Vol. 34 Issue 1, p1.
- Lee, Eun-Ju; Lee, Linkook; and Schumann, David W. (2002) "The influence of communication source and mode on consumer adoption of technological innovations. *Journal of Consumer Affairs*, Vol.36 Issue1, pp. 1-27.
- Lee, Jungki, Allaway, Arthur (2002) "Effects of personal control on adoption of self-service technology innovations", *Journal of Services Marketing*; Vol. 16 Issue 6, pp. 553-570.
- Hall, Chris (2004) "Technology, existing resources keys to marketing on a budget," *Selling*, January, p14.
- Meuter, Matthew , Ostrom, Amy, Bitner, Mary, Roundtree, Robert (2003) "The influence of technology anxiety on consumer use and experiences with self-service technologies," *Journal of Business Research*; November, Vol. 56 Issue 11, pp. 899-906.
- Neuter, Matthew L.; Ostrom, Amy L.; Roundtree, Robert I., and Bitner, Mary. (2000). "Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters," *Journal of Marketing*, July, Vol. 64, Issue 3, pp. 50-64.
- Nakata, Cheryl and Zhu, Zhen. (2003). Self-Service Technology Failure: Understanding the Customer Perspective. Power-point Presentation. February 14, 2003. As retrieved from <http://www.uic.edu/cba/crim/CrimNewsFiles/Colloquia/>
- Pujari, Devashish (2004) "Self-service with a smile? Self-service technology (SST) encounters among Canadian business-to-business," *International Journal of Service Industry Management*; 2004, Vol. 15 Issue 2, pp. 200-219.
- Quinones, Rick. (2001) "Is Self-service Confusing Your Customers? *CRM Adviser Zone*," Doc Ct 07936, 3p. as retrieved from <http://www.Advisor.com>, March 2003.
- Stanley, Beth and Pope, Darrell. (2000). "Self-Service Lessons," *HR Magazine*, May, Vol. 45 Issue 5, pp. 5-10.
- Unruh, James A. (1996). Keeping the Customer Satisfied. *InformationWeek*, August, Issue 591, pp. 55-60.

