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# **Prominence of Information Richness in Accepting Online Based Self-Service Technologies**

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## **Author's contribution**

*The sole author designed, analysed, interpreted and prepared the manuscript.*

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## **ABSTRACT**

Most of the service organizations are now moving to provide their services at a remote basis with Self-Service Technologies (SSTs). This is a natural outcome of technological maturity and would be the norm of many service transactions in future. Currently in many of the services, customers have the choice to use either SSTs or physical service encounters with service employees according to their desire. However, the future is predicted to replace many service employees with self-service machines and humanoid robots. Therefore, it is the responsibility of the service organizations to make their customers ready for such a future. Use of self-service technologies typically take place without the presence of organization's service staff. Thus, machines should provide necessary guidance and instructions to customers so that they can perform well without difficulties. If SSTs are not rich with information, customers would be in trouble without proceeding with their transactions successfully. Therefore, the quality of information would be a matter for successful online based self-service transactions. Thus, the aim of this study is to understand the information richness in online based self-service technologies from the customer perspective. Using the qualitative approach, semi structured interviews were conducted with 25 individuals who have experience in using online based SSTs. The study found seven key factors which determine the richness of information in online platforms namely 'Relevance, Timeliness, Accuracy, Clarity, Consistency, Sufficiency and Simplicity'. The study enriches the theoretical landscapes by

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broadening the understanding on significance of information richness in accepting online based self-service technologies while on practical ground provides insights for service providers in designing their SSTs with rich and necessary information which is required to perform successful transactions.

*Keywords: Information; richness of information; self-service technologies; online platforms; websites.*

## 1. INTRODUCTION

Service setting, irrespective of whether it is a place, or a space is significant in determining the level of success of customers' service transactions. Additionally, this setting verifies whether customers can proceed with their service transactions without any difficulties. Conventionally, the servicescape is limited to physical interfaces where meeting customers and the service providers is a must to carry out the transaction. Thus, service encounters were traditionally seen as a place where customers and service providers have interpersonal interactions [1]. Consequently, past literature is also mostly on understanding service encounters from interpersonal interaction perspective [2]. However, the current business trend is moving from having direct dyadic interactions at physical service encounters to technological based platforms. In such a platform, customers need to produce their service by themselves without the interference of organizational service staff. Such self-service technologies are classified into four groups by Meuter, Ostrom [2] as 1. telephone-based technologies and interactive voice response systems (IVR); 2. online connections and internet-based interfaces; 3. interactive kiosks; and 4. video or CD technologies. Among them online and internet based self-service technologies are becoming prominent.

The growth of the World Wide Web has commendably influenced the expansion of online based self-service technological platforms [3]. Most of the online based transactions are backed by multimedia-rich interactions [4]. Interactivity, efficiency and reachability made the internet a great platform for customers' transactions. [5]. Now the business organizations are networked each other [6], and similarly customers also create their own groups within the online platforms [7] which are known as virtual customer communities [8] that offer many benefits to the service organizations in return in enhancing the loyal customer base and spreading positive word-of-mouth communications [8]. Further these online brand

communities work as a relational tool [9] which connects the organization with other customers [10]. According to Ind and Coates [11] adoption of internet technologies brings diverse sets of benefits. It offers several innovative opportunities for business organisations [12] while being a new turning point in service development [13].

Moreover, features of technology such as simplicity, convenience, safety, standardization of technologies, availability, efficiency etc inspire people to use SSTs [14]. However, habit and preference to use traditional service encounters, fear and absence of sufficient benefits discourage people from using SSTs [15]. The effect of apparent suitability [16], innovative characteristics [17], cost savings, time-saving and behavioural control [18] related with such SSTs will provide many benefits that people have never experienced in traditional service outlets. But, each persons' ability, perceived risk [19] desires for personal contacts [20] will determine whether they use online platforms or traditional service encounters.

Liljander, Gillberg [21] point out that customer acceptance of SSTs is not guaranteed unless service providers provide user-friendly technological environments for them. Therefore, when instituting technology to the service encounter, it is essential to understand whether the customer perceives a pleasant experience [22], because they will not use SSTs if they feel uncomfortable and not beneficial [23]. However, well-designed interfaces with rich guidance and information will attract customers [24]. Nevertheless, the available scholarly work does not explain this profoundly. Therefore, this study aims at exploring information richness which guides customer acceptance of online based self-service technologies.

Accordingly, this paper first describes the theoretical foundations of the study. Next, the research methodology is presented before producing the findings and discussion. Finally, it provides conclusions, recommendations along with limitations and directions for further research.

## 2. LITERATURE REVIEW

The Literature review section first presents the information on self-service technologies. Next, the growth of SSTs in services, types of SSTs, advantages and disadvantages of SSTs are explained. Finally, the importance of information richness in SSTs are elaborated.

### 2.1 Self-Service Technologies

Bitner [25] acknowledges three forms of service backgrounds namely self-services, interpersonal services and remote services. Meuter, Ostrom [2] recognize self-service as an important move in the service context. Currently, self-service is being characterized with technology incorporated advanced operations. It converts the marketplace into 'market space' which is defined as "a virtual realm where products and services exist as digital information and can be delivered through information based channels" [26:14]. Self-Service Technologies are defined as "technologies, provided by an organisation, specifically to enable customers to engage in self-service behaviours" [3:862, 27:3]. In a similar note, SSTs are recognized as "technological interfaces which enable customers to produce the service independent of direct service employee intervention" [2:50]. Online banking, computerized airline ticketing, automated hotel checkouts, supermarket self-checkouts, self-check-in at airports, self-service fuel pumps, self-scanning at retail shops and automated teller machines (ATM) can be taken as examples [2].

Responding to the advances in technology many business organisations are now transforming their business processes to self-service technologies [28]. Further, organizations view it as a solution to the increasing cost of manpower. SSTs have been widely accepted during the last ten years [23], and now people use it to perform many tasks effectively and efficiently [29]. Many digital technologies present an exceptionally customized environment to their consumers with abundant information and interactivity [30]. Now technology-based services are turning out to be a vital part of marketing [31]. Currently many people are working with self-service technologies by producing their own service outcomes [32] without depending on the organization's employees [2], those who are recognized as 'working customers' [33].

### 2.2 Growth of Self-Service Technologies in Services

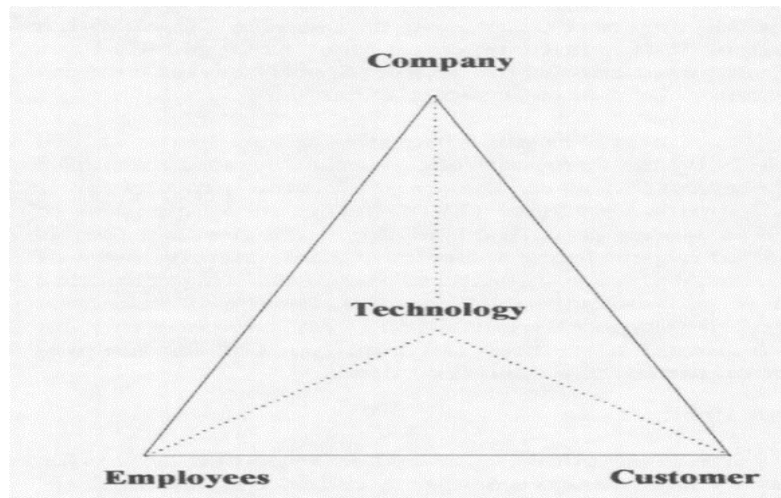
Self-service technologies have altered the service encounter by allowing customers to execute transactions via a high-tech interface without any assistance from organization's employees [31,34]. This transformation has revolutionized the way businesses cope with interpersonal interactions in service premises [18:246]. SSTs become a service model in the modern-day marketplace [35] while 'automated social presence' is expected in the near future, [36].

SSTs extend chances for people to produce and consume service electronically [37] and become a prerequisite for being competitive [38]. Bitner, Faranda [39:197] note that now customers can become 'full participators' by performing service transactions by themselves. Some SSTs such as ATMs have now turned out to be common, whereby around more than half of banking transactions now take place without the assistance of a teller [2]. Many business organizations have currently accepted SSTs with the intention of becoming cost-effective and efficient [3]. At the beginning only simple transactions were permitted in SSTs, however, now more complex non-routine work also can be performed through SSTs. Properly designed SSTs allow even relatively inexperienced people to perform very sophisticated tasks conveniently and efficiently [40].

### 2.3 Classifications of Self-Service Technologies

Main three parties namely, consumer, company and employees are influenced by the introduction of self-service technologies. It is well explained in the triangle model of marketing, which was originally proposed by Kotler [41], and has been extended by incorporating the role of technology by Parasuraman and Grewal [42]. This advanced service pyramid (Fig. 1) illustrates how technology affects these key three parties as an intermediating element.

SSTs are classified into three groups as electronic kiosks, the internet, telephone and mobile devices based on the channels of delivering the service. [43]. These types of technology based self-services range from very common Automated Teller Machines to innovative platforms such as flight check-in at airports [35].



**Fig. 1. Service pyramid incorporating technology**

Source: Parasuraman and Grewal [42:171]

Meuter, Ostrom [2: 52] categorize SSTs into four types as “telephone-based technologies and interactive voice response systems (IVR)”, ‘online connections and internet-based interfaces’, ‘interactive kiosks’ and ‘video or CD’ technologies”.

According to this categorization, telephone-based technologies handle customer interactions over the telephone providing them the opportunity to get the service transactions done without visiting the service premises. Being a cost-effective mode, the Internet-based interfaces provide services all around the world without limiting to geographical barriers. Further these Online based technologies are open networks [44] which provide service throughout 24 hours in every day of the year. It enhances the flexibility of collaborations [5] and provides opportunities for virtual communities. Today social media has become a prominent online platform which allows value co-creation [45]. Technological platforms with touchscreen display, card readers, scanners, coin operations etc., are mainly recognised as Interactive kiosks. These kiosks can take the form of information providing booths, coin-operated cafeterias, airline reservations and check-in kiosks etc. Today Kiosks were able to replace many of the small boutiques and service booths which managed to deliver routine tasks in developed countries [43].

Self-service technologies helps organisations to achieve main three objectives, “ 1; providing customer service, such as managing account information, bill payments, package tracking, and

frequently asked questions, 2; enabling direct transactions such as online ordering, purchasing, resource exchanging and 3; self-help/ education /learn and training the customers” [2:52].

#### **2.4 Advantages and Disadvantages of Self-Service Technologies**

SSTs have advantages as well as disadvantages that can influence both the customer and the service provider [22]. Service providers are benefited with cost savings mainly due to reducing labour charges [18]. Additionally, services can be standardized and differentiated using improved technologies [34]. Further it provides avenues for customizing the service while enhancing the speed of service delivery [46]. SSTs would enhance efficiency and effectiveness of the organisations [28]. Especially online based SSTs allow the organization to handle varying demand conditions without adjusting the staff [22]. Additionally, service providers can focus on other priorities while customers do their own service transactions via SSTs [43].

On the other hand, customers also can save time and cost when getting used to doing their service transactions via technological platforms. Online based technologies provide locational benefits to the customers such that they can perform transactions at their fingertips [34,47]. Additionally, customers like to perform via SSTs due to the simple enjoyment of performing the task on their own [28,48]. Flexibility [49], ease of use [2] are also recognized as advantages for

the customer. SSTs generate a more perpetual service environment, facilitating customers to precisely understand the service expectations [22]. It gives a feeling of accomplishment while boosting self-efficacy and customer enjoyment [23]. Some online based SSTs deliver the service in many languages enhancing customer understanding [43]. Now most of the self-service technologies are user-friendly and provide more accessibility to people with disabilities (e.g., online transactions) and possibly support the national prosperity and quality of life of individuals [43].

As Wei, Torres [50] described, SSTs are composed with intrinsic attributes such as independence, accomplishment, confidence, novelty, enjoyment, empowerment, and engagement which provide customer satisfaction. Further, according to them extrinsic attributes related with SSTs such as convenience, timesaving, efficiency also cause customers to be happy and loyal. As Bilgihan [51] mentioned, 'trust' has become an imperative component of SSTs which build e-loyalty, especially among generation Y customers. However, as Nijssen, Schepers [52] note, the individuals who are highly benefited with SSTs become more loyal towards SSTs than those of who are marginally benefitted. SSTs have also been recognised as a source of customer delight by simply giving them the credit for the tasks customers have accomplished on their own [2:69].

However, customers can simultaneously experience both the positive and negative feelings towards new technologies [53]. While some customers are playful in using technologies, some can perceive it as a threat, which causes anxiety [53]. Less-advantaged people who are poor in skills to work with SSTs show a destructive relationship with the organisations which provide such technological platforms [52]. Customer complaining is recognised as higher in SSTs compared to the interpersonal interfaces which mainly resulted due to technology failures and process failures [2].

Meuter and Bitner [34] recognise six types of drawbacks of SSTs. They are, service recovery issues, reduced face-to-face interaction, an overemphasis on firm benefits, an overemphasis on technologically based competitive advantages, the limitations of social experience and lack of sufficient cost savings. Thomas [54],

compared the failures in traditional as well as technology-based service encounters and proposed 'hybrid services' which combines technology innovations with human involvement in customer service encounters.

## **2.5 Importance of Information Richness in Customer SSTs**

At Present, customers are empowered with infinite opportunities to engage with technologies in performing many service transactions [55]. Rapid technological innovations in the "internet, mobile phones, and personal computer terminals" [56:516] encourage people to engage with online based self-service transactions. Yu and Sangiorgi [57] note that provision of 'supporting tools' SST platforms such as smart technologies can facilitate customers by assisting them to apply their own skills and resources when performing service transactions.

In today's context, more frozen knowledge is embedded in the 'smart offerings' which enable interactivity of the transactions [58]. Smart offerings are those which entrench the 'know-how' to products, which can meaningfully increase the customer capabilities of self-performing services. Especially, self-service online technologies which are rich with information and instructions will support customers to perform tasks successfully without the presence of service employees. Therefore, properly developed SSTs support even low competent customers to perform their services with confidence [59]. Payne, Storbacka [60:383] show how service encounters become 'action-supporting' by providing opportunities for customers to engage in activities such as 'trials, knowledge sharing, self-service etc.

Füller, Hutter [61:261] note the importance of online idea generation. Dahan and Hauser [62] note the opportunities for virtual customer involvement through information sharing. Rich information and guidance encourage customer engagement in virtual environments [63]. Multimedia-rich interaction in the internet allows virtual customer engagement a success [4]. Bonsu and Darmody [64] explore customer engagement in virtual technology context, highlighting consumer empowerment. Teo and Oh [65] note that information quality in online platforms as major consumer value determinants.

Transforming service encounters into SSTs without understanding the customer is recognised as a risk [3]. Similarly, Curran and Meuter [66] recognise the need of business organisations to encourage customers to use SSTs by providing justifications. Thus, it needs to make sure whether these technologies are rich with information which provide proper guidance to the customer to self-learn and perform transactions.

### 3. METHODOLOGY

As suggested by Dickson-Swift, James [67], this study uses the qualitative research approach as the appropriate methodology for the situations where the literature is not sufficiently providing a profound background understanding. Sekaran and Bougie [68] also advised using a qualitative research approach to be familiar with the context. The sample for the study was taken from the East Riding Yorkshire area of the United Kingdom, using non-probabilistic purposive sampling method. This decision was backed by the intention of hiring information rich cases for the study [69]. Semi-structured interviews were conducted with twenty-five respondents until reaching information saturation [69-71]. Interviews resembled a conversation and ranged from 30 to 45 minutes. All the interviews were transcribed into word documents and kept on reading a few times until being familiar with responses. The analysis was made by conventional content analysis procedure [72,73]. First, preliminary codes were assigned to describe the content followed by searching for patterns in the codes across the different interviews. Initially identified themes were reviewed and refined before producing the final themes.

### 4. DATA ANALYSIS AND FINDINGS

The degree of richness and quality of the given information/instructions in SSTs is acknowledged here. The study recognises that information richness in SSTs is a key determinant in customer choice of SSTs, and sufficiency, relevance, timeliness, accuracy, clarity, consistency, and simplicity of information/instructions were among them.

**Sufficiency:** Most of the respondents in this study disclosed that sufficient information should be available on online platforms. Otherwise, people would find it difficult to do enough comparisons and choose the best options

matching their requirements. According to them some websites contain more graphics and pictures to make it attractive, but not sufficient information to support and guide customers purchase related decisions.

*I guess it should provide sufficient information to get correct decisions. This is because sometimes there might be no one to ask...if the websites provide only a few facts how we can get the right decision. it should not let customers ask questions about the product or company from others. Website should be self-explaining everything. If they feel common information given is not sufficient, they can add options like Frequently Ask questions. (FAQ). They should take us on the right path to get correct decisions. (40 years, female).*

**Relevance:** Further, there were some criticisms from some responders that the information available in the websites are not much relevant for customers. However, some older respondents pointed out the inability to understand information and instructions in SSTs, pointing out some situations where transactions had gone wrong due to confusing instructions. Incorrect or outdated information in websites, not providing clear guidelines up to the endpoint and complex instructions were among the criticisms.

*Some of my online transactions are going wrong. Because they are not giving all the relevant instructions. You know so you're not faffing around trying to figure out how to use it, before using it...it should be relevant. You should get there, it should all be working. You shouldn't go halfway through your use of it.... realizing it is not working properly. Coz you're just wasting your time... you do not need to. It should be easy. If anything goes wrong someone should be there to help. I think that's all I need. (32 years, female).*

**Clarity:** Clarity of the information, instructions and guidance also were recognized as a matter of fact that people expect when they do self-service transactions. Some people mentioned that instructions are not clear, and they invite mistakes. Confusing information and instructions lead to failures in customer online transactions.

*I experienced some instructions given that are not clear. We need to go through a lot of documents before filling out the online*

*information. In those documents also it is not clearly mentioned what to do. They need to stress clearly on what they expect us to do. If you have language or literacy issues the problem would be doubled. The other thing is they can give language options too. Some information makes you confused. Sometimes my common sense says this is right. But unclear information invites some mistakes. (62 years, female).*

**Accuracy:** According to the respondents some online platforms do not provide accurate information and have not updated for a long tie period. Prices given on the online platforms are different from their retail shops. They claimed that some products are available online, but physically aren't. They share their experiences with inaccurate pricing such as sometimes discounts given in the retails shop are not updated in the websites and contact details are wrong or not working. It gives an unpleasant experience to the customer. However, respondents appreciate some reliable organisations who run their online platforms providing reliable information which enhances customer truthfulness.

*It's good to make sure whether the information in the websites is correct. Because I know that sometimes these things are shown online ...but not physically available in the stores...they haven't updated their websites in a couple of weeks. Old, wrong information in the websites. (48 years, male).*

*It should be reliable, correct dates, time, price, everything should be exact. You've got to get the right dates when you buy things. Or if it's a company far away you must make sure you're getting what you want. It should be very definite, otherwise you confuse where you are parking, going, doing, buying etc. (38 years, male).*

**Timeliness:** Availability of timely valid information in an organization's online platforms also recognised as questionable. Respondents claimed that some organisations do not emphasize on updating their websites with timely information. Thus, it would disadvantage the people who get the decisions based on the information available in websites. However, they appreciate some organisations as well maintaining their online platforms with most current information.

*Have you seen the last updated dates of some websites. May be ages ago. So how can people get decisions based on such old invalid information. Now people do not visit or call them to get information. It should be very clear in the websites. (52 years Male).*

**Simplicity:** According to the respondents, information and instructions given in online platforms should be very simple so that people can understand it properly. Otherwise, people may have to go through many difficulties without knowing the correct meaning of it.

*When you look at it, you can very obviously see how to access different things, whether it's a screen or a little display or whether it's a keyboard. Many of the instructions are simple, and kind of minimal steps, not too complicated as you could easily become confused with too many buttons. Obviously, self-service has fewer buttons. If you go to book a hotel it's a very clear kind of on-screen information on where you pay, where you review something, where you look for something, where you reserve... It's going to be something obvious. (22 years female).*

**Consistency:** According to the respondents when online platforms are drastically different from other competitive organisations (eg: online banking of different banks) and from time to time radical changes take place in the same platform cause to reduce customers' ability of being familiar with the platform. It spends customers' time and effort to be comfortable with the new look of the websites. Therefore, they suggest maintaining uniformity while upgrading the system with improved technologies.

*I have no objections to improving the online platforms. But if it is changing day by day with all the appearances, we feel hard to find where and what to do. It should be steady. Then it does not take our time to find where the buttons are and find here and there. If the web is constant, we know how to perform similar things on different web platforms.*

## 5. DISCUSSION

Froehle and Roth [74] also show the importance of information richness in determining customer beliefs on technology mediated services. However, the literature has not specifically addressed the elements of information richness in online SSTs. Rather it assures the importance

of being precise in guiding customers for correct service transactions [75].

Specifically, the online platforms should be reliable and work as a relational tool [10]. As Kohler, Fueller [12] note that, the Internet platforms should be simple enough to use consumers' 'innovative potential and knowledge'. Similarly, Sandström, Edvardsson [13] also view technology-based services as a new turning point which provide accurate and consistent service. Zhang, Lu [76] outline customer engagement in online platforms as mainly due to its relevance with changing customer needs.

Payne, Storbacka [60:383] note that SSTs should be 'action-supporting' by providing opportunities for customers to engage in activities such as 'trials, knowledge sharing, self-service etc. Many digital technologies offer a highly personalised environment to their customers with rich information and more interactivity [30].

## 6. CONCLUSION, RECOMMENDATIONS AND FUTURE RESEARCH DIRECTIONS

The study found seven crucial elements which determine the information richness in online

based SSTs namely 'Relevance, Timeliness, Accuracy, Clarity, Consistency, Sufficiency and Simplicity'. This illustrates in Fig 2.

This study enriches the literature surrounding self-service technologies by addressing the information richness which is an area with inadequate scholarly attention. In practical grounds, the study provides insights for online based SST providers that would be useful in designing and delivering their online platforms. Because if the information, instructions, and guidelines given in SSTs do not conform to these characteristics, SST users will not be able to perform transactions on their own, which leads to confusion, complaints, and customer dissatisfaction. Therefore, the study suggests for service providers to make available all the needed information to the customer on their online platforms ensuring 'Timeliness, Relevance Accuracy, Clarity, Consistency, Sufficiency and Simplicity'.

This study was limited to exploring elements of information richness in online based SSTs. The future researchers can extend the investigation to study the influence of information richness on customer acceptance, use and experience of using such online based SSTs.



Fig. 2. Elements of information richness in online based SSTs

Source: Author Compiled



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## COMPETING INTERESTS

Author has declared that no competing interests exist.

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