E-Service Culturalization: New Trend in E-Service Design

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Abstract. In this paper, we draw attention to the importance of incorporating aspects of localization into design of e-Services in order to address the differences among e-Services consumers such as linguistic differences, and cultural diversity. In the past, many companies have realized that the idea of promoting an e-Service through a single version of a portal/website is not suitable for all of the potential users or customers. This has led companies to consider new and creative design principles for e-Services, especially those who are in direct interaction with the consumer and act as service provider in a Business-to-Customer (B2C) setting. In this regard, this paper initially reviews the different aspects of service design that highlight the need to include cultural usability aspects in the service design process and successively determines the different cultural dimensions that have a substantial influence in determining the level of e-service localization.

Keywords: e-Service Design, e-Service Culturalization, Human-Service Interaction (HSI), User Interface Design (UID).

1 Introduction

As part of the development of different service promotion channels, business services are increasingly delivered through the Internet, which is commonly referred to as e-Business or e-Services [1]. One general category, which clarifies the nature of the relationship between service provider and service consumer using different electronic means (e.g. website, portal, mobile applications), focused on the end user of a service is called Business-to-Customer/Consumer (B2C).

Service Engineering [2] and Service Science [3] are concerned with studying all the methodologies and technologies that could help to improve the performance of these services directed to customers. As part of these efforts, Human-Service Interaction (HSI) has been proposed as a means of bringing together the structured development of e-services with the more general concept of Human-Computer Interaction (HCI) [4]. So far, there has been a limited research on the role of human/sociality in e-service design. Understanding the requirements of both, e-Service provider and e-Service consumer, is a persistent need for various changes (e.g. market changes, customer's interests, e-Service demand, effects of web and social media, online shopping norms). Up to now, the perspective of the customer

(customer–centered design) seems to be neglected, with the result of poorly designed and customized e-services. The resulting amplification of social/cultural gaps between what users expect and what developers anticipated should be addressed to minimize the effects.

The purpose of this paper is to advance the understanding of the importance of including the culture usability aspect in the service design process. In doing so, we review the relevant aspects of service design and Human-Service Interaction particularly focusing on e-Services (Section 2). Subsequently, we explore the different cultural dimensions who have a substantial influence on the level of e-service localization (Section 3).

2. Research Background

2.1 Human Service Interaction

Human Service Interaction (HSI) is the field of research that emerged and has expanded rapidly after the development of the service innovation field in the 1990s [6]. With respect to the definition of the Human Computer Interaction (HCI) it is concerned with the designing and implementation process of interactive services for the human use (see [7]), in order to let the users interact with the service system in a usable manner. It includes the perspective of a systematic development of service systems (Service Engineering), which is understood as a "technical discipline concerned with the systematic development and design of services using suitable procedures, methods, and tools" [2], including IT-enabled services [8]. The main goal of the service engineering is to develop modular and configurable systems for services [6, 9, 10]. It requires a comprehensive understanding of a service system, ideally based on a formal system model. The system provides a common basis for the description of a Human-Service Interaction for IT-enabled services.

The system model, which is an important development object of the service engineering, can also be used within the human-computer interaction. Differently from HCI the focus of HSI is not only the design of an adequate interaction within single process tasks of an employee, it is about the whole communication that takes place in a service system [8, 9]. The service systems view helps to clarify customer (human) requirements that need to be fulfilled for e-services [9]. Understanding and addressing these requirements will lead to better usability and an adequate customer interface. It will however in most case influence the services itself (e.g. the shipping options or payment methods offered) and address intangible factors such as customer loyalty and perceived service quality.

2.2 E-Service Definition

In literature many different overlapping definitions of e-Services exists. They are focusing on different criteria, such as (1) the delivery infrastructure of the e-Services, (2) the definition and essence of the term itself, (3) the benefits expected by the customer from using the e-Service [11], or (4) the difference between service

production and service outcomes [12, 13]. E-Services have previously been defined as:

- "Those services that can be delivered electronically" [14].
- "Provision of services over electronic networks" [15, 16, 17].
- "Interactive services that are delivered on the Internet using advanced telecommunications, information, and multimedia technologies" [18].
- "Internet-based applications that involve a series of parallel executed transactions performed by e-service providers as they locate, negotiate, and handle requests from each other" [19].
- "An actor performance offered by one party to another an economic activity that creates value and provides benefits for customers" [12,13].
- "An act or performance that creates value and provides benefits for customers through a process that is stored as an algorithm and typically implemented by networked software" [11].

According to [5, 19], e-Services can be categorized into three different groups. The differentiation factor is the question what kind of offering is provided through the e-Service:

- Physical: The consumer will receive a physical good. The e-service will provide additional value for the customer regarding the "assembly, design, aggregation, and delivery" of the physical good (e.g. parcel tracking services) [19].
- Digital: The consumer will in the end receive a digital good of binary coded information that "primarily exists in electronic form" [21] (e.g. digital music or book download services).
- Pure Service: The consumer is not receiving a physical or digital product. The offered service interaction brings the value for the customer by itself. Therefore, characteristics of digital and physical services may be included (e.g. an instant messaging solution) [19].

Generally, e-Services are the provision of services over an electronic network such as the Internet [24]. The scope of the e-Services should be described in the context of the type of channels and organization uses. Here, an e-Service provider interacts with customers through downstream channels and with suppliers through the upstream channels [15, 16, 17]. The type of the interaction can be (1) information-based interaction, (2) negotiations interaction, (3) promotion flow, (4) title exchange, (5) and product/service flow. Largely, e-Services include both channels and all interactions except for the transfer of physical products [16]: The downstream channels may encompass concepts such as extra-organizational interactions (e.g. Customer/Citizen Relationship Management (CRM), Relationship Marketing, Customer Care), and the upstream channels will be in relations to concepts of intra-organizational interactions (e.g. E-procurement, Supply Chain Management, Inventory Management).

Further, e-Services delivery have many forms: (1) as a service embedded in a website [26] or in portal [27], (2) as a web application backend [26] or e-Commerce application [17], (3) as a "packaged solution comprising multiple outsourced e-Services." [26], (4) as a "portfolio of related services delivered on a metered basis"

[26], or (5) as a service offered in an e-government scenario G2C [27] (e.g. making an appointment with to license plates for your car).

Different domains of e-Service have been discussed in [16]. Focuses are (1) information services and web services as done in the IT sector, (2) connectivity and related services in the Telecommunications sector (3) marketing themes to move the focus from products to services in the commercial sector (4), and a Government agency's view of governmental accountability to citizens.

2.3 E-Services Design

E-Service Design is "a new holistic, multi-disciplinary, field. It concerns to either innovate or improve e-Services to make them more useful, usable, desirable for customers, as well as more efficient and effective for organizations" ([33], see also [5]). E-Service design activities are part of the service development process [13, 33, 34], and contributes to a set of modeling techniques for service experiences. That includes service-scape, customer journeys, service interface, etc. [33-35]. E-Service design as a new trend lacks in design standards. It becomes evident that (1) there aren't any specific criteria belonging to the context of e-Services [36], (2) approaches are limited and have not enough details [36], (3) approaches are not sufficient [37, 38], (4) they are derived from a specific theory or perspective [39, 40], (5) often only usability in user interface design is considered, (6) evaluation of the usability is often not related to the web or online services, (7) some of the approaches do not support a human-computer interaction perspective [41], and mainly not focus on the support of the design of IT-mediated communication between humans [42]. The first contribution to develop design criteria for e-Service was proposed in [43] as part of the social action theory Others researches focus on the business action, and use a social action perspective on IT-systems to discuss the communication as one type of action [36, 39, 44].

3 E-Service Culturalization

The e-Service culturalization concept is not entirely new. It can be understood as a customization of an e-Service through a special design for a group audience of customers according to specific customer's requirements. What is important to note, as the scope of the customization, is, that it takes into consideration the need of understanding the different customer's cultural norms. The differences and similarities in any culture are joint directly with the geographical location of customers, or to which countries customers belong to, which give attention to another term "Localization".

According to (LISA)[1], "Localization is the process of modifying products or services to account for differences in distinct markets" [45], in order to transform

[1] Localization Industry Standards Association: is the trade body concerning the translation of computer software (and associated materials) into multiple natural languages, which existed between 1990 to February 2011 in Switzerland. .

them into more understandable, usable, and culturally suitable services for target customers. The localization process is divided into three main levels [5]:

1. Linguistic level: includes the linguistic aspects (e.g. language translation, software source code, database content), rather than the adaption of the "e-Service to technical aspects such as dates, time, currency formats, addresses, measurements, weights, punctuation, and so on" [46] – suitable for the initial stages of the localization process.
2. Cultural level: includes the adaption of design components to a specific culture (e.g. graphics, visual elements, images, terminologies, metaphors, colors) and all cultural aspects of certain audience groups.
3. Technical level: includes the e-Service redesign, by means of changing components in order to make them more culturally usable.

The localization of products and e-Services is an important issue, which helps to increase: (1) customers trust if the e-Services matches their cultural needs and preferences [47] (2) customers satisfaction (3) customers loyalty (they will be more loyal to localized services that is compatible with their cultural needs and preferences) [47] and reduce "training costs, limited user risk, and enhanced performance" [48].

E-Service culturalization, includes all the procedures for cultural adaptation of e-Services including the consideration of the cultural characteristics of customers and their culture diversity as part of the e-Service design. The most comprehensive and influential model aiming to understand the culture diversity around the world is the Hofstede model [48], which has been used to understand the culture diversity in many fields.

Hofstede [48] derived his model through a survey conducted with (IBM) employees in 40 different countries. His resulting model consist of six specific dimensions:

1. Power Distance: the degree of expectation and acceptance of unequal power distribution within a culture.
2. Individualism vs. Collectivism: the role and function of the individual and group and their relation in a society.
3. Masculinity vs. Femininity: Gender roles, not restricted to physical appearance such as assertiveness or tenderness.
4. Uncertainty Avoidance: how people deal with risks and degrees of uncertainty
5. Time Orientation: related to the choice of focus for people's efforts and planning in the future or their effort in present and past.
6. Indulgence vs. Restraint: society permissions, which includes relatively free fulfilment of human desires (good life and happiness).

E-Services, which are embedded on a website or portal, should not be designed in separation of designing the web interface or website design. Five user interface design components have been suggested by [46], which include information visualization and web-based services. They have been mapped into Hofstede's cultural dimensions as a matrix to find out the relationship between interface design and culture norms. User interface design components contain (1) Metaphors: capture the essential concepts in words, images, icons and sounds with the intention to provide a understanding of the service provided; (2) Mental Model: the organization of the data

so that it relates to the perception und predictive behavior of someone – the person relates to the e-Service in their consciousness; (3) Navigation: the predicted movement through the e-Service in relation to the mental model; (4) Interaction: the grade of the user interaction within the service system; and (5) Appearance: the perceptual characteristics of the presentation including audio, style, colors and themes as well as other visuals.

4 Conclusion

In this initial research paper, we tried to bring attention to e-Service culturalization as a new orientation in e-Service design. The approach outlined will require further effort in order to provide a broad and dynamic understanding of culture, and how such an understanding can be employed by e-Service designers/developers.

It is necessary for service designers to realize that services are designed for interaction with people with different cultures and social backgrounds, which means that they differ in interaction patterns. Thus being not only linguistics differences, but variations in respect to personal beliefs, values and attitudes. Service Design will have to make sure those aspects are adequately accounted for as part of the service design process. This will help to provide e-Services that match the different cultural groups in order to provide customers with services which are more usable, relevant, homecoming, and familiar. In that sense, service design can provide a holistic view regarding the activates about human centered design and the human understanding, where a service is tailored to satisfy the real requirements of both customers and service providers.

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