

A Study on the Concept Dimension and Measurement of Service Contact

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Abstract: The research finds that the concept of service contact mainly focuses on three perspectives: service contact from the perspective of interpersonal dynamics, service contact from the perspective of overall service system, and service contact from the perspective of technology introduction. The dimension of service contact is mainly divided into interpersonal service contact and technology service contact. The measurement of service contact includes two aspects: traditional service contact elements and mobile Internet-based modern service contact.

1. Service Contact Concept

1.1. Service Contact from a Narrow Interactive Perspective

Solomon et al. (1985) revealed the concept of service contact for the first time when they explored the service situation, expounding that service contact is a one-to-one interaction between the provider and the receiver of a service product. Groth, Gutek and Douma (2001) proposed that a service behavior of interaction between consumers and service personnel is service contact. Therefore, based on the perspective of interpersonal interaction, scholars at home and abroad have focused on the concept of service contact. Solomon et al. (1985) further elaborated the concept of binary interaction. Service contact based on binary interaction refers to the process of two-way dynamic interaction between service product providers and receivers. With the further development of research, more and more scholars insist that service contact exists in face-to-face human interaction, which is not only between consumers and service providers, but also between the physical environment (Bitner, Booms, & Tetreault, 1990; Pugh, 2001; Patterson & Mattila, 2008; Lin & Lin, 2011; Söderlund et al., 2014). Many domestic scholars have also conducted extensive research on the concept of service contact from the perspective of interpersonal interaction based on the current specific research status. Ni Yabei (2010) expounded the concept of hotel service contact based on the perspective of interpersonal interaction, and believed that hotel service contact is the face-to-face interaction between customers and hotel staff in the hotel.

1.2. Service Contact from a Broad Interaction Perspective

Shostack (1985) believes that service contact includes not only the face-to-face interaction

between customers and employees of service enterprises, but also the interaction between the hardware facilities and equipment displayed by customers and enterprises, and the various tangible and Intangible products (Lockwood, 1994; Bitner, 1990). Wang Jianling, Liu Sifeng and Wu Zuomin (2008) believe that service contact refers to various interactions centered on human-to-human interactions in the entire delivery process of service personnel providing services to customers, which includes interaction between tangible entities elements and intangible service elements. To sum up, from the perspective of interaction, the concept of service contact explained from the narrow and broad levels belongs to its traditional definition, and can be roughly divided into four aspects: binary interaction, system perspective, critical moment and one-off ^[1].

1.3. Service Contact from the Perspective of Technology Introduction

Table 1: Definition of service contact from the perspective of technology introduction

No.	Definition	Scholar
1	Customer interaction choices between self-service systems and interpersonal delivery systems.	Bateson (1985)
	The interactive behavior of the company, employees and customers under the introduction of technology.	Byrne & Parasuraman (1996)
2	Interaction between customer and service organization (service personnel, service environment) brought about by reliable and interesting tools such as technical services.	Dabholkar,Shepherd,& Thorpe (2000)
3	Contact between customers and network technology based on efficiency and convenience considerations and the completion of service transactions.	Robertson&Shaw(2006)Walker,Craig-Lees,Hecker,&Francis (2002)
4	Based on the characteristics of self-service technology that may imitate and surpass interpersonal contact points, service organizations can better understand customer preferences and consumption behaviors in the process of service contact.	Bitner,Ostrom,&Meuter (2002)
5	Relying on technology has changed the nature of service delivery and the nature of the interaction between customers and service organizations, and interactions that have an impact on customer consumption behavior.	Dabholkar,Michelle Bobbitt, & Lee (2003)
6	Interactive behavior through video and audio technology that can ultimately affect customer service quality perception.	Van Dolen, Dabholkar, & De Ruyter (2007)
7	Interactions that rely on self-service to guide the customer's self-service experience and affect the customer's overall service experience and repurchase decision.	Amin,Yahya,Ismayitim, Nasharuddin,&Kassim (2013)
8	Low level of technology and high levels of face-to-face interaction.	Drennan&MccollKennedy (2003)

With the in-depth development of Internet technology, Meuter (2000), Seck and Philippe (2013) put forward the concept of invisible contact based on self-service technology, and elaborated that in the process of consumption, the interaction between customers and enterprises is not only physical Tangible contacts, as well as virtual intangible contacts based on mobile Internet technology and platforms, include self-service check-in equipment in airport terminals and self-service booking and check-in systems in hotels. Scholars such as Bitner, Brown and Meuter (2000), Bobbitt and Dabholkar (2001) used technology to connect the service contact between customers and enterprises

to describe the contact process of virtual services based on mobile Internet technology and platforms; Van Dolen, Lemmink, De Ruyter and De Jong (2002) put forward the concept of electronic service contact; Walker, Craig-Lees, Hecker and Francis (2002) put forward the concept of technology-based service delivery; Seck and Philippe (2013) In the exploration and research of the contact interaction pipeline, the concept of virtual interaction was expounded; Osarenkhoe, Byarugaba, Birungi, Okoe and Bennani (2014) virtual service contact based on Internet technology and platform refers to the use of e-mail by customers using computers and mobile phones, placing an order on the hotel's official website to pay for the purchase of a hotel room, etc. occur in the communication and interaction between the hotel and the customer ^[2]. The definitions of typical representative service contacts from the perspective of technology introduction based on the above research results are shown in Table 1.

Service contact refers to the moment of interaction between a customer and an employee of a service firm when they provide a product or service (Bitner, Booms and Tetreault, 1990; Bitner, Brown and Meuter, 2000). While Shostack (1985) and Bitner (1990) define the definition of service contact more specifically, they elaborated that service contact covers all possible interaction items between service enterprises and customers, including service personnel, tangible equipment and other visible things. In a longer period of time, the two parties will convert the accumulated experience of contact in the past into a committed relationship of mutual cooperation in the future (McCallum & Harrison, 1985). Czepiel (1990) believed that service contact is a common phenomenon with multi-faceted characteristics. Research on service contact. Gilbert and Wong (2003) explored human interaction in service contact in the consumption process from the perspective of perceptual control. In order to express the concept of service contact more completely, this study organizes the understanding of domestic and foreign scholars on service contact as Table 2 ^[3]:

Table 2: Summary of service contact concepts

Category	Concept	Author
Interpersonal Interaction Perspective	The face-to-face interaction between consumers and service providers in a service context.	Solomon, Surprenant, Czepiel, & Gutman (1985)
	Two-way interaction between customers and service providers.	Surprenant & Solomon (1987)
	It can properly grasp and facilitate the critical moment of the two-way delivery of services.	Soupis (1989)
	Communication and behavior of two-way interaction between customer and service provider.	Morgan & Chadha (1993)
	The process by which a customer interacts with a service staff over a period of time.	Martin & Adams (1999)
	Everyone's feeling and vigilance is transformed into a commercial process.	Arlie Hochschild (1983)
	Language-led communication interactions.	Mariani, Borghi, & Kazakov (2019)
Overall Service System Perspective	The overall impression of service quality produced by customer contact with service personnel.	Zeithaml, Valarie, Bitner, & Jo (2008)
	The interaction between the customer and the entire service system, including service personnel, physical facilities and other tangible factors.	Bitner, Booms, & Tetreault (1990)
	The critical moment when customers make a comprehensive impression of the business.	Bitner, Brown, & Meuter (2000)
	The psychological satisfaction brought by the interlocking of different tasks (economic factors) and etiquette.	Fuchs & Zanker (2012)
	The time that customers directly interact with the service, including interaction between customers, interaction with service personnel, and interaction with physical factors such as facilities and equipment.	Victorino, Verma, & Wardell (2013)
	The degree of trust and satisfaction felt by customers in the whole process of contact with the service (service personnel, physical environment, customer environment).	Shamdasani & Balakrishnan (2000)

Category	Concept	Author
	Cultural communication and exchange in cross-cultural full-process service contact	Ang, Liou, & Wei (2018)
	Eco-friendly service experienced throughout the green hotel engagement process.	Gupta, Dash, & Mishra (2019)
Technology Import Perspective	The interactive behavior of the company, employees and customers under the introduction of technology.	Byrne&Parasuraman (1996)
	The customer's contact with the service organization using technological equipment.	Meuter (2000)
	Low skill level with high face-to-face contact.	Drennan & Mccoll Kennedy (2003)
	Communication and interaction between hospitals and patients driven by technology	Lee (2018)
	Interaction between customers and businesses in the context of smart and connected technologies.	DeKeyser,Köcher, Alkire, Verbeeck, & Kandampully (2019)
	Apple Pay's interaction between customers and businesses.	Liu & Mattila (2018)
	Under the computer medium, Chinese service contacts genres.	Chen Xiaoyan and Yao Yinyan (2015)
	The interaction between customers and enterprises in the context of technological intervention.	Li Jun and Li Zhihong (2014)
Evaluation	E-government portal website knowledge service quality and service contact.	Song Xueyan, Guan Dandan, Zhang Xiangqing, Yang Jiaxuan and Wang Mengyuan (2018)
	The service contact between customers and enterprises in e-commerce environment.	Li Haixia (2019)
	The interactive perspective emphasizes the two-way communication between customers and employees, ignoring other influencing factors of service contact; the system perspective not only considers the multiple influencing factors of service contact, but also extends service contact to the whole process of service experience; the scientific and technological perspective emphasizes the influence of technological factors on service contact, which has a positive effect on the elements of service contact.	

To sum up, the concept of service contact in this study is defined as the degree of satisfaction and satisfaction that customers feel in the process of interacting directly with service personnel, other customers, and with facilities and equipment.

2. Dimensions and Measurement of Service contact

Experts and scholars at home and abroad have discovered its measurement method in the study of service contact, mainly through the elements of service contact and the dimension of science and technology. At the same time, domestic and foreign experts and scholars have further supplemented and improved the dimension of service contact in specific research situations.

Experts and scholars at home and abroad have explored and researched the application of technology in the tertiary industry as a service industry in the Internet era. Ostrom, Roundtree and Bitner (2000) use technology readiness and technology focus to measure customers' technology use intentions. Based on the above research, Meuter, Bitner, Ostrom and Brown (2005) added this dimension of self-service technology to the measurable specific dimension of service contact in the research combined with the use of Internet technology platforms. Walker and Johnson (2006) and Snellman and Vihtkari (2003) believe that the modern service contact in the context of mobile Internet is not only the contact and interaction between customers and service personnel, the contact and interaction between customers and the physical environment, and the contact and interaction between customers in the traditional sense, but also the contact and interaction between customers and the physical environment, and a self-service contact interaction based on the mobile Internet technology platform. Wang Jinwei (2006) found in the research that domestic experts and scholars used the method of key events to summarize the satisfaction and dissatisfaction factors of the interaction between service personnel and new and convenient technological facilities and equipment when providing services to customers (Table 3). Wang Keyi, Zhou Jun and Li Dandan (2009) further elaborated the content of service contact on the basis of studying the telecommunication service industry, and refined it into four levels. The specific content is

functional contact, personnel contact, environmental contact and remote contact [4].

Table 3: Satisfaction and dissatisfaction factors of interpersonal service contact and technological service contact

Variable name		Variable content	Variable source
Interpersonal service contact	satisfaction factor	Timely and appropriate response, trust, reducing customer anxiety and uncertainty, feeling valued, happy, and getting closer	Gwinner, Gremler, & Bitner (1998); Sweeney & Webb (2002);
	dissatisfaction factor	Unexpected Employee Behavior	Howcroft, Hewer, & Durkin (2003);
Technology service contacts	satisfaction factor	Addressing intense needs: better than human contact Really useful: high transaction efficiency, high-quality service delivery, cost savings; stable service quality, large amount of information, customized services, preferential prices	Meuter (2000); Parasuraman & Grewal (2000);
	dissatisfaction factor	Technical fault; procedural error; poor technology; customer fault; lack of interaction; new technology barriers	Barnes (2002);

To sum up, domestic and foreign experts and scholars have studied the measurable dimensions of service contact from two perspectives, namely, the traditional service contact elements in the past and the modern service contact in the context of mobile Internet, as shown in Table 4.

Table 4: Main measurement dimensions of service contact

Measurement dimension	Measurement content	Theoretical source
Traditional service contact elements	Customer contact with service staff	J.Chandon,P.Leo,and J.Philippe (1997); Keng, Huang, Zheng and Hsu (2007); Wall A R(2013);
	Contact between customers	Huang and Hsu(2010); C.H.Wu and R.Liang(2009)
	Customer contact with the physical environment	
	Customer contact with service staff	Meuter (2000) ^[5] ; Walker,Craig-Lees, Hecker and Francis (2002); Robertson and Shaw (2006); van Dolen, de Ruyter and Streukens (2008); Udo,Bagchi and Kirs(2011);
Modern service contact based on mobile internet	Contact between customers	Wang Jinwei (2006) [6]; Liu Jinyan (2007);
	Customer contact with the physical environment	Wang Keyi, Zhou Jun and Li Dandan (2009);
	Technology service contacts	Biedenbach, Bengtsson and Wincent (2011); Simpson,Griskevicius and Rothman (2012)
Evaluation	The traditional service contact elements mainly measure the three types of contact between customers and employees, customers and customers, and customers and the physical environment; the service contact from the perspective of mobile Internet is in addition to the above three types of contact, and Internet technology is added, which is conducive to the role of measurement technology in improving service contact quality.	

3. Conclusion

The concept of service contact mainly focuses on three perspectives: service contact from the perspective of interpersonal dynamics, service contact from the perspective of overall service system, and service contact from the perspective of technology introduction. The measurement of service contact mainly focuses on two aspects: traditional service contact elements and mobile

Internet-based modern service contact.

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