

Consumer's Persistence in Solving their own Problem with Self-Service Technology

Research in Progress

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Abstract

An increasing range of technology services are now offered on a self-service basis. However, problems with self-service technologies (SSTs) occur at times due to the technical error, staff error, or consumers' own mistakes. Considering the role of consumers as co-producers in the SST context, we aim to study consumer's behaviours, strategies, and decision making in solving their problem with SST and identify the factors contributing to their persistence in solving the problem. This study contributes to the information systems research, as it is the first study that aims to identify such a process and the factors affecting consumers' persistence in solving their problem with SST. A focus group with user support staff has been conducted, yielding some initial results that helped to conduct the next phases of the study. Next, using Critical Incident Technique, data will be gathered through focus groups with users, diary method, and think-aloud method.

Keywords

Consumer behaviour, self-service technology, SST problem solving, persistence.

INTRODUCTION

Self-Service Technology (SST) is defined as a technology interface that enables users to produce a service without the need for direct service staff involvement (Castillo-Manzano and López-Valpuesta 2013). Examples of SSTs include mobile banking applications, online shopping websites, automated self-check-in machines of the airports, the ability to install software, and some aspects of the learning management systems at universities (Dabholkar and Spaid 2012; Wang et al. 2012). Nevertheless, problems with self-service technologies occur at times even for the best service providers due to the technical, staff or consumer error (Dabholkar and Spaid 2012; Zhu et al. 2013). For example, more than 2000 kiosks of the U.S. Postal Service are not in use due to design issues (Selfserviceworld.com 2010). A shopping website with long response time, an out-of order ATM, confusing directions by the self-check-in machine of an airport, and a distance learning tool with navigation problem are only some of the common examples of SSTs service failures (Forbes 2008; Meuter et al. 2000).

Using Expectation-Confirmation Theory, studies of service quality and service recovery have defined service failure as the situation when consumer's perceived quality of service does not match their service quality expectations (Castillo-Manzano and López-Valpuesta 2013; Dabholkar and Spaid 2012). However, unlike the definition of service failure, there is no single definition for service recovery, as there are three categories of service recovery including (1) firm-recovery (zero or very low level of user's participation), (2) collaborative/joint-recovery (both user and staff participate in service recovery), and (3) consumer-recovery (users take the entire recovery activities themselves or ask for help from other users) (Zhu et al. 2013).

Considering the possibility that SST failures will result in negative effects on consumer's perception of the quality of service, past service recovery literature (e.g., Zhu et al. 2013 and Castillo-Manzano and López-Valpuesta 2013) has emphasised on the importance of efficient service problem solving. Considering the important role of individuals as co-producers in the SST context and as consumers are involved in the problem recovery (with variety of degrees), it is important to understand the series of behaviours, strategies, and decision making that consumers go through to solve a SST problem (i.e., understanding SST failure recovery from consumer point of view). This can start for example with consumer's awareness of a SST problem, continue with their behaviours and decision making, and end with the final result (problem solved or the customer gives up). In addition, it is important to identify the factors that contribute to consumer's persistence in solving a SST problem, as this persistence is an important factor for success in solving the problem. To conclude, there is a research gap in studying the series of consumer's behaviours, strategies, and decision making to solve their problems with SST when they persist in solving the problem.

As it will be discussed in detail, Behavioural-Intention theories are able to explain only the consumers' willingness and intention to start SST recovery (i.e., "first click"). Although one study (Zhu et al. 2013) has tried to examine consumer behaviour in the context of SST customer-recovery, to date, no research has gone beyond (what happens after) the first click to study consumer's SST recovery behaviours, strategies and decisions while solving a SST problem. This study contributes to the Information Systems discipline and consumer behaviour research, as it aims to identify the consumer's behaviours, strategies, and decision making to solve their problems with SST, and it aims to identify the factors that contribute to their persistence in solving the problem. The study also contributes to the IS research methods, as we use an innovative methodology that employs Critical Incident Technique through focus groups (will be discussed in detail). The research questions of this study are:

1. What are the behaviours, decisions, and strategies that consumers use to solve their problems with SST?
2. What are the factors that contribute to consumers' persistence in solving their problem with SST?

This paper first, presents an overview of the current research on consumer's technology problem solving. Next, it explains the methodological choices and the procedures of data collection and analysis. Then, it presents the initial findings and ends with the conclusion section that explains the research limitations, as well.

LITERATURE REVIEW

Following the initial definition of the focal phenomenon (SST failure incident), a literature review was conducted to develop an initial framework for conducting the study. The literature review process started with reviewing the prominent models in consumer behaviour. These models are often founded in social psychology and have been used in Information Systems, e-Commerce, and e-Business research, as well. Examples include Theory of Reasoned Action (Fishbein and Ajzen 1975), Theory of Planned Behavior (TPB) (Ajzen 1991) and its next versions (decomposed TPB by Taylor and Todd 1995 and Revised TPB by Ajzen 2002); Expectancy Theory, adoption of an innovation by Innovation Diffusion Theory (Moore and Benbasat 1991); intention to accept a new technology by TAM, Model of PC Utilization (Thompson et al. 1991), UTAUT and the Extended UTAUT (Venkatesh et al. 2012); intention to achieve desired results (Zhu et al. 2013); and technology usage continuance by IS Continuance theory (Bhattacharjee 2001) that explains the factors affecting consumer's intention to start next usages after the first use.

However, these theories are able to explain only the consumers' willingness and intention to start the SST recovery (i.e., "first click"), not the consumer's SST recovery behaviours. Therefore, in order to find relevant literature, this study reviewed the literature in the fields of information systems, e-commerce, and service management from all journal articles and high ranked conference papers within ProQuest Computing, ACM Digital Library, Web of Science, ScienceDirect, and SpringerLink databases and the AIS Electronic Library.

The rest of this section presents the results of the literature review on the factors that *may* explain consumer's persistence in solving their own technology problem (these will be further examined and refined through the data collection and analysis methods). It also examines possible consumer behaviours (when trying to solve a technological problem) in the service recovery context.

Factors Affecting Consumer's SST Recovery Persistence

To identify the factors affecting consumer's persistence in SST recovery, we used the Revised Theory of Planned Behaviour (RTPB) as a guide to organise the literature review process. We conducted a comprehensive review of service recovery literature in the fields of information systems, e-commerce, e-business, marketing, and operations management (through the databases already mentioned). As the result of this analysis, we identified 56 candidate factors. Next, considering the nature and the similarity of these factors, this study categorised them into five broad groups including (1) perceived SST quality factors, (2) information (on SST recovery) quality, (3) personal factors, (4) task characteristics, and (5) situational factors.

As many of the identified factors of each category only explain the "first click", we conducted a detailed content analysis by using one table for each of these categories to provide justification for not including factors which only explain the "first click" and focused on the ones that may explain consumer's persistence. These tables (not presented here due to space limitation) helped us to agree on the results (consensus among the researchers) in a reliable way. At this point, we excluded the factors (30 factors) which only explain the "first click" (i.e., intention to start solving the problem, not the persistence) and focused on the 26 factors that *may* explain consumer's persistence with solving their technology problem. These factors which have been explained below will be further examined through our data collection and analysis methods.

Personal Factors

The personal factors we identified as the result of the literature review include: (1) perceived behavioural control (i.e., perceived ease of performing the behaviour and the user's amount of control over the achievement of his or her goal) (Ajzen 2002), (2) self-efficacy ("an individual's belief that he or she possesses the skills and abilities to successfully accomplish a specific task") (Baker-Eveleth and Stone 2008 p.136), (3) perceived control over technology ("the degree to which a customer believes he or she has the ability to adapt to and direct the SST to fulfil service needs") (Zhu et al. 2013 p.18), (4) subjective norm ("the person's perception that most people who are important to him think he should or should not perform the behaviour") (Fishbein and Ajzen 1975 p. 302), (5) customer recovery expectancy (individual's estimation of the possibility that they can solve a technology problem by their actions and inputs) (Zhu et al. 2013), (6) internal attribution ("the extent to which the customer believes his or her actions are responsible for the SST failure") (Zhu et al. 2013 p.18), (7) self-consciousness (An individual's view of himself or herself, with an awareness of other individuals about his or her behaviour) (Dabholkar and Bagozzi 2002), (8) technology anxiety (Chang 2011), (9) technology readiness, (10) prior experience, and (11) behavioural inertia (the situation when consumers are used to use a particular technology and resist against change) (Wang et al. 2012).

SST Quality Factors

We identified thirteen technology factors including: (1) usefulness (the degree to which a user believes that using the technology enhances his or her job performance), (2) ease of use (Barnes and Vidgen 2007; Lee et al. 2013), (3) interactivity ("the degree to which a customer believes the SST enables arrangement of the amount, style, and sequence of presented information") (Zhu et al. 2013 p.18), (4) user-friendliness (Herington and Weaven 2009), (5) reliability/fulfilment (the degree to which the technology fulfils its purpose) (Carlson and O'Cass 2011; Parasuraman et al. 2005), (6) security (Parasuraman et al. 2005; Zarei 2010), (7) responsiveness (the system response time) (O'Cass and Carlson 2012; Parasuraman et al. 2005), (8) efficiency (the ease and speed of accessing the channel) (Kim et al. 2006), (9) availability/accessibility (Parasuraman et al. 2005; Zarei 2010), (10) entertainment (the visual appeal, innovativeness, and flow-emotional appeal) (Zarei 2010), (11) flexibility (customization) (Loonam and O'Loughlin 2008), (12) adaptability (the system tunes itself based on change in network or consumer needs) (Marchetti et al. 2003), and (13) compatibility (the degree to which a technology fits with the existing values and experiences) (Lee et al. 2013).

Information Quality

In relation to the quality of information required to solve a SST problem, twelve factors were identified all of which may explain consumer's persistence in SST recovery. These factors which mostly were obtained through information quality and information retrieval literature include (1) Information availability, (2) accessibility (Barnes and Vidgen 2007; Ge et al. 2011), (3) understandability (interpretability of information) (O'Cass and Carlson 2012; Eppler 2006; Ge et al. 2011), (4) conciseness (appropriate amount of information) (Ge et al. 2011; O'Cass and Carlson 2012), (5) clarity (Aladwani and Palvia 2002), (6) believability (Ge et al. 2011), (7) usefulness, (8) originality (Aladwani and Palvia 2002), (9) completeness (O'Cass and Carlson 2012), (10) timeliness (currency of info), (11) relevancy (Barnes and Vidgen 2007; Eppler 2006; Ge et al. 2011), and (12) accuracy (Eppler 2006; Ge et al. 2011) of the information on service recovery (e.g., 'how to' and FAQ).

Task Characteristics

“Task complexity” and “task uncertainty” are the two main user's perceptions of a task (Bin 2009; Wang et al. 2012). Task complexity has been defined as the degree to which performing a task needs collaboration with others (i.e., perceived task simplicity) (Bin 2009). Task uncertainty implies “a lack of predictability, structure and information concerning the problem being addressed” (Bin 2009 p. 529). We consider these two factors, as they may explain user's persistence in SST recovery, abandonment, or switching to service personnel assistance.

Situational Factors

Social anxiety (a situational circumstance mostly caused by perceived crowding such as the waiting lines of supermarkets) and perceived waiting time (the perceived time that consumers should wait to receive a service) (Dabholkar and Bagozzi 2002) are the situational factors that have been considered by current literature. However, in this study, we do not consider social anxiety and perceived waiting time due to our approach which is studying unobserved users' behaviour, not consumer's behaviour when working with “public” SSTs. This will be discussed in more detail by the research limitations section of this paper.

Perceived quality of community of users (e.g., friends or colleagues who use a particular SST) and perceived (past experience of) customer service representative (CSR) performance quality are the two situational factors that the existing service recovery research has neglected examining them. As these two factors may explain consumer's persistence in SST recovery, we consider them for further analysis. Next, more detailed analysis was performed during our literature analysis which led to identification of (1) interactional fairness, (2) procedural fairness, (3) distributive fairness (Robertson et al. 2012), (4) and CSR competence/efficiency as the four factors in the CSR performance quality sub-group.

Consumer's SST Recovery Behaviours

There have been very few studies of SST recovery behaviours, and this constitutes the gap this study aims to address. The only study we identified in the area of consumer's SST recovery behaviours was by Zhu et al. (2013, p. 16), who classified consumers' behaviours in response to SST failure into three types of:

- (i) Modifying the effort level: “the amount of time and effort (i.e., how hard) directed toward doing more of or repeating the same steps or process”.
- (ii) Altering the strategy: “the customer attempts to do things differently or smarter, which demands more diagnostic thinking and active learning than repetitive efforts.”
- (iii) Seeking service staff assistance: a user may decide to leave the SST interface and withdraw SST failure recovery to seek the service personnel assistance.

The above classification is the most relevant classification to this study; however, these three behaviours are insufficient in explaining consumer's behaviours, decisions, and strategies in solving their problems with SST. Moreover, Zhu et al. (2013) do not provide the possible sequences of these behaviours in their framework.

DATA COLLECTION METHODS

Using the Critical Incident Technique (CIT), data will be gathered through ‘focus group’, ‘think-aloud’, and ‘diary method’. CIT is an appropriate method to design our focus group interview guide and also completely fits to the purpose of our think-aloud method and diary method, as it is a popular method of investigating an incident (i.e., a significant occurrence such as a service failure from the respondent's perspective) and the way it can be managed by paying special attention to the cognitive, affective, and behavioural elements (Angelides 2001; Gremler 2004; Yunus et al. 2012). In this method, the researcher asks individuals to recall an incident during a time frame and describe how it was managed or resolved (Yunus et al. 2012). The SST failure incident is our unit of analysis. This will be used to guide and integrate the phases of data gathering and analysis.

To recruit participants, we have considered the academics and students (users) of a New Zealand university that offers a wide range of SSTs such as self-check systems, software downloads (optional usage) via its portal, and the learning management system the use of which is mandated. However, before collecting data from consumers, we conducted a focus group with ten service staff of the Information Technology Services department. Below, we explain our data collection methods, why we chose them, and our plan for conducting them.

Focus Groups with Consumers and IT Services Staff. Since SST problems and problem solving behaviours can be very diverse, we initially conduct focus groups with user support experts and users to identify frequently occurring problems and responses and refine the list of factors identified from literature. Unlike survey questionnaire and individual interviews, the interactive, group and social nature of this method encourages experts and users to recall and share their experiences of incidents (SST problems), the behaviours and strategies

used to solve the problem, and the factors that they believe contribute to consumer's persistence with SST recovery. To conduct the focus groups, an unstructured focus group discussion with low level of moderator involvement has been considered. Using CIT, participants will be asked to recall a SST problem that occurred during the last six months prior to the focus group and describe how it was managed or resolved (Gremler 2004; Yunus et al. 2012). Experts report the behaviours and strategies they observed or assisted with, while users will report their behaviours and the strategies they used. We have considered 'incident' as our unit of analysis for our focus groups with users. In doing so, the transcribed data and field notes will be sorted based on the similarities and differences between the incidents (SST problems experienced by users) when trying to solve it. Next, these sorted data will be inductively analysed to conclude categories and themes.

For the purpose of participants homogeneity, each of the two groups of academics and students will be invited to attend at separate focus groups. To collect as representative data as possible, we invite seven to ten participants from different faculties and departments for each session. These focus group sessions will be repeated until the study reaches overall data saturation. The appendix section presents the questions of the focus group protocol.

Thinking-Aloud and Observation. In the next phase, think-aloud method will be used. Once again, a specific incident will be identified, and the researchers will observe users strategies in solving their SST problem. Contrary to the limitations of direct observation without participant's explanation of their behaviours, decisions and feelings, Think-Aloud method enables us to collect rich information on consumer's decision making and behaviours while (observing them) trying to solve their problem with SST. Think-aloud method is especially useful as this method can provide rich cognitive and affective information through revealing strategies employed and emotional reactions (Koro-Ljungberg et al. 2012; Korzilius et al. 2014). We will also conduct a short reflective interview with each individual right after finishing user observation.

To do so, a number of users will be asked that whenever a service failure (an 'incident' of SST problem) happens inform us to observe how they are going to face the problem. In a think-aloud protocol individuals are asked to describe their thoughts while they are solving the problem. If the participants are silent for more than ten seconds during the observation, they will be reminded that they should mention their thoughts and feeling (Berg et al. 2010). To minimise the observer's influence on participants, we explain the confidentiality of the data collection process for each participant and that their problem solving does not affect or create any attitude toward them. Moreover, we ask each participant to disregard the presence of observer and also mention the point of time that they usually stop problem solving and contact help-desk. Video recording is our preferred method of recording data, as it minimises the risk of missing the participants' verbal and non-verbal data.

Diary Method. Diary method (user's self reporting of their own behaviours, decisions, and experiences in a diary or recorded file) enables this study to collect rich information on consumer's decision making and behaviours while trying to solve their problem with SST in unobserved user environment and without time limitation (Bolger et al 2003; Czerwinski et al 2004). Unlike individual or group interviews, users can provide detailed information without any alteration (of their behaviours and decisions) resulted from limitations of human memory (Czerwinski et al 2004; Robinson 2002). Therefore, diary method enables this study to capture all user's behaviours, strategies employed, and decisions made.

To do so, a number of users will be given a diary or audio recorders (based on their preference) and will be asked to write or audio record their behaviours, strategies employed, decisions made, and emotions when solving an 'incident' of SST problem. Also, a short reflective interview with each individual will be conducted after the users finish their diary notes.

DATA ANALYSIS

Types of Data Considered in the Analysis Process

A focus group usually consists of six to ten participants; therefore, both content and group interaction data (i.e., verbal and/or non-verbal interactions such as when participants ask each others questions or debate each other) can be obtained from focus groups. Unlike focus groups, in the think-aloud and diary methods, data is gathered from each participant individually; therefore, no interaction happens. To analyse focus group interaction data, this study follows Rothwell's (2010) categorisation of small group interaction types (Dependency, Counterdependency, Fight, Flight, Flight-pairing, Pairing, and Counterpairing).

In this research, the research questions aim to understand individual user's behaviour and strategies (not group's behaviours). Therefore, considering the *theoretical sensitivity* (i.e., separating and determining the important types of data for analysis), this study argues that focus groups interaction data and their detailed non-verbal data do not need to be analysed with high level of precision, as they do not contribute to the research questions of this study. The importance of group interaction data and non-verbal data (e.g., an individual's facial expressions or

body language that reveal his/her emotions and feelings) is significantly reduced for the focus group with ITS staff, as the focus group participants are not the consumers of SSTs (the target users of this study).

Analysis Procedure for the Focus Group Data

Considering the nature of the research questions of this study and our data collection methods, qualitative approach suits the best for this research. As mentioned in the literature review section, no existing theory and prior research can directly help us to develop a process model of consumer's SST problem recovery and to identify the contributing persistence factors. Therefore, in order to gain new insights into this type of consumer behaviour, this research uses the inductive approach for qualitative analysis of data obtained through focus groups, think-aloud, and diary methods. In this approach, categories and their names are concluded inductively from the transcripts (i.e., raw data); therefore, it helps us to gain new insights to the topic of our study. As mentioned, according to the CIT method, 'incident of SST problem' is our unit of analysis when analysing focus groups, think-aloud and diary data.

Our focus group data analysis process starts with analysing the manifest content of the transcript (analysis of the visible parts of the transcript that needs low level of interpretation). In doing so, we constitute the content areas through bringing together the words, sentences or paragraphs about each incident of SST problem into one text. Each content area is divided into meaning units which are condensed and labelled with a code. Next, the similar codes are sorted into sub-categories which are further abstracted into categories. Finally, for each content area, one theme is formulated based on the underlying meaning of the categories in that content area. In the next phase of our analysis, we analyse the latent content of the transcript (analysis of parts of the transcript that need high level of interpretation). To do so, the latent content in each content area (related to each incident of SST problem) is divided into meaning units. Each meaning unit is condensed into a short description (a description close to the text) which is then interpreted to understand its underlying meaning. These are then abstracted into subthemes which are grouped into themes. As participants interaction data is a kind of latent content, the interaction analysis follows the same procedure, but separately (also suggested by Duggleby 2005). As the final phase, the identified sub-categories, categories, sub-themes, and themes are all presented in an integrated text.

Analysis Procedure for Think-Aloud and Diary Method

In order to analyse the think-aloud and diary data, we will employ Makri et al.'s (2011) analysis procedure. Makri et al. (2011) suggests using the 'open' and 'axial' coding elements of Grounded Theory (Glaser and Strauss 1967). This systematic procedure can increase the trustworthiness of the analysis, as it facilitates the analysis process when multiple researchers are involved in the coding process (i.e., facilitates consensus among the research team). Open coding (i.e., identifying the concepts and their properties) will be performed for the purpose of data abstraction. Like our data coding process in our focus group data analysis, we will identify and group the similar codes (related to each incident of SST problem) based on their similarities and differences. In the next phase, the results will be further abstracted through axial coding (relating categories to their subcategories) (Strauss and Corbin 1998) to identify the consumers' particular behaviours and strategies when trying to solve a SST problem.

Next, the diary notes and think-aloud transcripts will be reviewed again to identify the sequence of these categories (of similar consumer's behaviours and strategies). As the sequence of behaviours can be different for each consumer, a flowchart will be drawn for each consumer separately. These flowcharts all together will constitute a framework (of consumer's SST problem recovery) which will be illustrated through a figure.

Integration and Theory Development

These analyses will be continuously refined and compared with each other, and with the factors identified from literature, described above. New literature may be sought to explain emergent findings. By triangulating the findings from our methods, we aim to develop new theory of SST recovery persistence.

INITIAL RESULTS

At the time of writing, one focus group has been conducted, yielding some initial results. The participants were experts in user support (ITS staff). These included ten staff including two support managers, two help desk staff, two staff from the desktop team, two staff from the operations team, and two staff from the technology integration team. Participation was voluntary and an information sheet and a consent form were sent to the participants in advance of the focus group session. To ensure participants' convenience, date of the focus group was arranged based on their opinion and the meeting was held in the meeting room of their department. The meeting took one hour and twenty minutes including ten minutes for explaining the main concepts and the aim

of the project. This focus group provided us with valuable insights into the topic of this research and a useful source of information that helped us in designing and revising the questions of the focus groups with consumers.

This focus group confirmed the factors (i.e., information quality, personal factors, technological factors, task characteristics, and situational factors) that we previously identified through our literature review. However, except the 'technological factors' (SST quality factors) group, there are a few interesting differences in the contents (i.e., the factors that contribute to consumer's persistence in SST recovery) of each of these groups.

In this focus group, perceived control over SST, SST recovery self-efficacy, and internal attribution factors (all persistence factors except "SST recovery expectancy" which was identified in the literature review analysis) constitute the 'personal factors' group. Although we were not expecting to identify these personal factors through a focus group with staff (not consumers), interestingly the mentioned factors were identified through the discussions. For example, the quotes below are some selected parts of the transcript that show how we identified 'self-efficacy' as a persistence factor in the personal factors group:

Participant 9: "If they're not confident in what they're doing, then they'll find someone else ..."

Moderator: "Self-efficacy you mean?"

Participant 9: "Yes. Yup. Either that or the belief that they're going to destroy the world by pressing that button, cause they don't know what it does".

Also, below are the quotes that show how the internal attribution factor was concluded:

Participant 2: "I think it's almost like if they think there's a fault (staff or system error), they're probably more likely to contact service staff, whereas if they think they need something, they might try to look for it first".

Another difference with the factors identified through literature review is identifying "task criticality" as another factor that constitutes the task characteristics group. The quotes below show how this factor was identified:

Participant 8: "But you'll persist at fixing a problem, you'll persist more at trying to help yourself than you- that's why email is so critical, that people don't tolerate issues with it".

Participant 6: "You persist cause your manager yells at you if you don't".

Similar to our literature analysis results, perceived quality of community of users and perceived (past experience of) customer service representative (CSR) performance quality constitute the situational factors. However, the factors in the CSR performance quality subgroup that we identified during our literature review (competence/efficiency, interactional fairness, procedural fairness, and distributive fairness) were not identified in this focus group. As mentioned, this can be mainly because the participants in this focus group were service staff, not the users.

'Information quality' (quality of information on SST recovery) group includes three subgroups of information obtainability, usefulness, and presentation. 'Information usefulness' subgroup consists of information relevancy, completeness and timeliness. Information availability, accessibility, time to obtain, and obtainability easiness constitute the 'information obtainability' subgroup. Moreover, information clarity, conciseness, and contextualisation form the 'information presentation' subgroup. 'Information contextualisation' and 'time to obtain' (the required time to obtain needed information) have not been mentioned in the service quality and service recovery literature. This can show the need for more attention to these two factors in this context. The quote below is an example that shows how we identified 'information contextualisation' factor:

Participant 6: "Or when they attempt to enter something for example".

Participant 9: "Well when we updated the email system to TIPS that does contextualize".

Participant 8: "... products request for support is a good example because within the products there is self-help and very contextualised if we type it in..."

The first focus group yielded interesting comparisons with the factors we identified from literature, and some emergent factors. This gives us confidence that the qualitative and inductive process we have selected is appropriate. Accordingly, we are continuing to refine the results, and this will be performed through the focus groups with users, and the further data gathering phases using diary method and think-aloud method.

TRUSTWORTHINESS

The three measures of trustworthiness in qualitative research (i.e., credibility, transferability and dependability) have been considered for all data collection and analysis methods of this study. To ensure achieving credibility, this study has considered collecting data from participants with various experiences; appropriate amount of data (to reach data saturation and theoretical saturation) through multiple focus groups and also several user diary notes; selecting the most suitable meaning units (not too broad and not too narrow); explaining the data condensation and abstraction process; showing representative quotations from the focus group and think-aloud data transcripts and also diary notes; and seeking agreement among the researcher and participants to show how

categories and themes were emerged (Elo and Kyngas 2008; Graneheim and Lundman 2004; Sim 1998). Dependability is boosted through open dialogues within the researcher and transferability is achieved thorough giving a clear description of sampling, data collection, analysis process and also a rich presentation of the findings (Elo and Kyngas 2008; Graneheim and Lundman 2004; Sim 1998).

CONCLUSION

Considering the role of consumers as co-producers in the SST context, we are engaged in a study of consumer's behaviours, strategies, and decisions in solving their problem with SST and identifying the factors contributing to their persistence in solving the problem. This study contributes to the information systems research, as it is the first study that aims to identify such a process and the factors affecting their persistence in solving their problem with SST. Moreover, to date, this is the first IS study that uses Critical Incident Technique through focus groups and diary method. We have conducted a focus group with service personnel of the Information Technology Services at a New Zealand university which offers a wide range of SSTs. The results of the analysis of this focus group were provided in this paper. Participants of the next focus groups, think-aloud, and diary method will be the consumers (i.e., the students and academics).

Past SST studies (e.g., Castillo-Manzano and López-Valpuesta 2013 and Dabholkar and Spaid 2012) have considered only one or few SSTs which are usually public SSTs such as self-check-in machines in an airport or supermarket. In order to broaden the types of SSTs in our study, we considered data collection from a large university in New Zealand that offers several types of SSTs. Moreover, these SSTs are used in unobserved user environments (e.g., when academics are solving a problem with the University's learning management system in their office room, not in a classroom) which provides this opportunity for users to try several strategies to solve their SST problem. However, "public" SSTs may express the importance of some factors such as technology anxiety, self-consciousness, and waiting time. Service providers increasingly deliver services digitally, often with minimal or no support from the organization. Understanding what encourages consumers to persist with solving SST problems is becoming an essential business competency.

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APPENDIX

Focus Group Topics (unstructured questions with low level of moderator involvement) Using CIT:

1. During the last six months, what SST problem or problems do you recall that you tried to solve (started solving the problem)?
 - 1.1. How do you rate the complexity of solving that SST problem (e.g., low, medium, or high)?
2. What was the process you went through to solve that problem?
3. In your opinion, what are the factors that contribute to your persistence in solving such a SST problem?

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