

The Application of Artificial Intelligence and the Interactive Voice Recognition in the Banking Industry in Sri Lanka

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This research was conducted in qualitative approach. The researcher has worked with developing a framework based on the concept of artificial intelligence (AI) to introduce a new model. On that purpose, primary data were collected from hundred customers who enjoyed in services of interactive voice recognition (IVR) in the Banking Industry in Sri Lanka based on interviews with an open-ended question. The researcher has coded the collected data to spot the patterns to identify and analyze the core relationship in between AI and IVR; to discuss and to revise the developed model. The samples are selected in accordance with the intention to extract relevant information, and thus, the researcher has used non-probability sampling aimed to find respondents that had some experiences with any types of services in IVR. Data were analyzed by labeling them as “codes” and the researcher went through all the labels that were constructed in the previous stage; these were then categorized once more into themes. These themes and labels were then used to spot indications and patterns in the data that the researchers used when analyzing their primary data. The findings of this study suggest that customers are skeptical towards in interactive voice recognition in telephone customer services and believe that the service quality would be lower than regular telephone service. The findings did however reflect that customers are willing to cope or adjust to new technology as long as there are alternatives them to be satisfied.

Keywords: marketing strategies, industrial companies, customer services, customer satisfaction, customer perception, IVR, AI, banking sector

Introduction

It is important to mention that artificial intelligence (AI) is everywhere nowadays. However, just accepting of AI is not enough because the structural failure of it from the businesses seems to be continued and the current path is not that much clear. Additionally, customers become confused on AI behaviors that could harm the trusted personal as well as corporate relationships that drive and serve business. In contrary, artificial intelligence has jumped from mysterious situation to full squeeze scenarios with a speed and intensity that has caught even its supporters by surprise. Therefore, it has seen obviously that artificial intelligence is big, important, and also transformative. As a result, services industries now cannot ignore AI at their safety.

It has seen that employees in services industries keep on critically questioning that artificial intelligence is

helping or harming, perhaps even replacing them. Eventually, AI may create problems without transparency, trust, and personalization among stakeholders of service industries because advanced components of AI may bring revenue for service industries where it takes deeply into the souls of stakeholders across the value chain and embrace a human-centric approach. AI has to implement with the creative, emotional, and constructive capabilities of human beings with the speed, accuracy, and scale of machine intelligence. And finally, many will accept that AI is one of the dynamic mechanisms to promote and enhance services of industries.

Therefore, artificial intelligence (AI) is one of the significant concepts in the field of computer science that seeks to develop a method to program to perform actions and deduction similar limits to those of human intelligence. Therefore, it aims at understanding the complicated mental processes of human brain and then interpreting those mental processes to equivalent computer processes that increase the ability of the computer to solve sophisticated problems.

Therefore, in most occasions, AI is using to strengthen service marketing in organizations through resource allocation and distribution, and utilizing to meet specific and general requirements of customers. And also, to establish competitive advantage, it is vital to analyze customers' demands and needs to offer blend services. Therefore, one of the service marketing strategies is introducing interactive voice recognition (IVR) in the collaboration with the applications of AI to meet those demands.

Objective of the Research

The purpose of the research was to study on customers' perspectives on automated interactive voice recognition services in the banking industry in Sri Lanka. So, the research was conducted in qualitative approach. The researcher has worked with a developed framework and then suggested a new model based on the concept of AI and collected primary data from hundred interviews with an open-ended question in services of IVR in the Banking Industry in Sri Lanka.

Services both IVR and customer satisfaction (CS) are significantly broader; therefore, this research is limited to carry out study on telephone customer services on IVR within the banking industry in Sri Lanka. And also, the study is limited to a smaller sample because it has created more revenue to discuss the subject in-depth and with open-ended questions with the customers, with the aim to create a deeper understanding of their perceptions.

Research Problem

Customer satisfaction has been given the second importance by service industries when IVR is concerned. It has seen that they expect more benefits from IVR at the time of introducing for promote services than customer satisfaction. But, they expect customers to be adopt to it expansively. Therefore, an existing theory has explained how organizations can benefit from self-service and how customers today have adjusted to IVR technologies. However, an implementation of advance services in IVR is relatively criticized and existing research within this arena is limited and scattered. As a result, this research has focused on how IVR can promote customers to adopt to receive benefits from AI perspective when it is dependable and trustworthy than a cost saving mechanism for organizations.

Literature Review

AI first appeared soon after humans developed the electronic digital computing that makes it possible. So, AI and its technology have ridden waves as a branch of computer science that aims to make computers perform tasks nearly similar to human intelligence processes, such as learning, deduction, and decision-making. Artificial intelligence, as a term, is given to the most recent computer science which belongs to the modern generation of the computer. It aims at making the computer simulate the intelligence processes inside the human brain, gives it the ability to solve problems, and makes logical and well-organized decisions like the human brain. Therefore, Marvin (1961), Edward (1977), Allen (1983), and Douglas and Godel (1979) mentioned that AI covers a broad range of technologies and applications, some of which are merely extensions of earlier techniques and others that are wholly new. Also, there is no generally accepted theory of “intelligence”, and the definition of machine “intelligence” changes as people become accustomed to previous advances. Further, William (2018) urged that artificial intelligence is whatever has not been done yet. So, it seems that AI has not yet experienced wide-scale commercial deployment. Anyhow, Al-Husaini (2002) emphasized that AI is aimed to understand the complicated mental processes performed by human brain while practicing “thinking” then interpreting those processes to equivalent computer processes that increase its ability to solve complicated problems. Similarly, IVR is the result of service sectors incorporating self-service technologies. Therefore, Meuter, Ostrom, Roundtree, and Bitner (2000) explained that these are incorporated using various interfaces that make indirect involvement of an affiliated employee. Further, it can be seen, as Fluss (2009) and Robertson, McDonald, Leckie, and McQuilken (2016) focused, that the most recent versions of IVR are able to give full answers to the customers without an actual human being involved in the call. But, it is acceptable that the sophisticate technology plays a key role but one of the significant matter is, as Bitner (2001) urged, reliability of the technology.

However, there are very limited researches that have been carried to identify how artificial intelligence technology can use to enhance customer satisfaction because Davis and Heineke (1998) mentioned that technology creates revenue in greater manner to the customers’ satisfaction. But also not only that, Rekha, Abdulla, and Asharaf (2016) and Vanneschi, Horn, Castelli, and Popovic (2018) criticized that AI-technology can increase service quality by using knowledge of the specific consumer and adapt offerings and solutions automatically. Further, this may lead to personal interactions and relationships between the customer and a service provider to influence as Medler-Liraz and Yagil (2013) and Fullerton (2014) studied for the customer satisfaction.

However, it has seen that only very few studies provide evidence, from the customer perspective, from the service industries especially in banking sector that the importance of AI-technology enhances their satisfaction. Further, it reflects that when technology eases use, it will lead to the Technology Acceptance Model (TAM) which has illustrated in Figure 1 and it has explained that the Technology Acceptance Model uses user characteristics and perceptions to predict the users’ intention to use a computer system. Based on perceived ease of use and perceived usefulness, the user forms an attitude towards using the computer system which leads to the behavioral intention to use. Additionally, this model is playing an important role in between IVR and AI because technology and software have been developing rapidly over the last decades, so those concepts reflected widely in customer operations. Even though customers are more used to technology these days, it is still as important as

ever to predict their perception of a computer system to ensure that they will actually use it. So, in this scenario, it has indicated very broadly that users of TAM belief acceptance engages, as Davis, Bagozzi, and Warshaw (1989) critically mentioned, that certain type of technology towards to perceived usefulness and perceived ease of use. Based on this, it can be argued that consumers' willingness to engage with new technology depends on how easy to use and how beneficial to use, as Immonen, Sintonen, and Koivuniemi (2018) documented an alternative option.

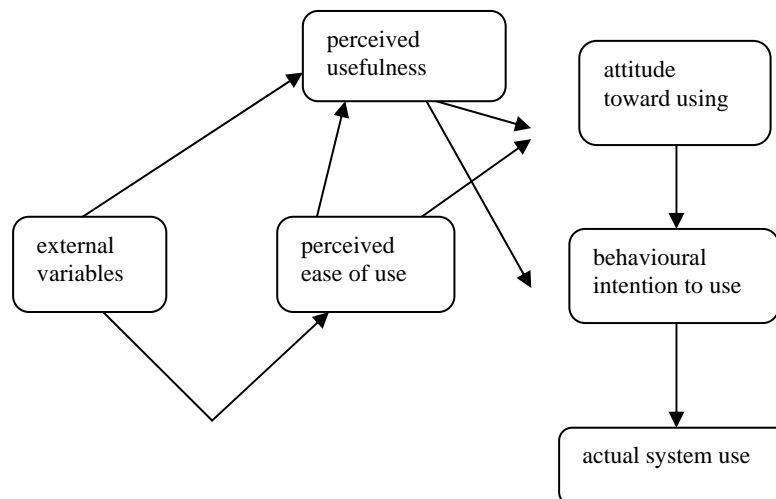


Figure 1. Technology Acceptance Model (TAM) (Source: Davis et al., 1989).

However, Pantano and Di Pietro (2012) studied that Technology Acceptance Model has to consider customers' technical skills, requirements, and involvement in co-creating of technology systems and also it can be applied to generate profits in different context. Therefore, customer satisfaction in services provide has to be consider at the higher level because if a customer is frustrated, angry, or disappointed in the provided product or service, as Hoffman and Bateson (2010) urged that harming the reputation of the company, similarly, the service is to be perceived as high quality, both the technical and functional aspect of it needs to be, as De Keyser and Lariviere (2014) pointed that at higher quality. So, based on these assumptions, the conceptual model has suggested that perceived usefulness and perceived ease of use influenced on customers' attitude toward to use the services.

Therefore, based on TAM, this research has developed a model which is based on Customer Acceptance Model (CAM) which has illustrated in Figure 2.

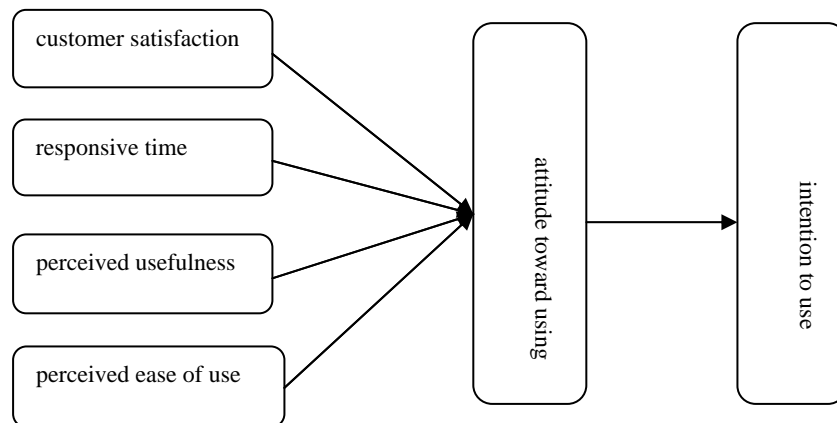


Figure 2. Customer Acceptance Model (CAM).

In this model, one of the key aspects is that not given consideration on external variables because main purpose is to explore customers' perceptions. As a result, this model is focused on to see core relationships in between perceived usefulness and attitudes instead of perceived usefulness and intention to use as of TAM because of qualitative study which is not easy to measure the real involvements.

However, with comparison of TAM and CAM, following facts reflected very importantly on customer satisfaction on services of IVR in the banking industries in Sri Lanka.

Research Findings

It has seen importantly that one of the important facts of the Interactive Voice Recognition System can cut down cost at the higher range when service operations are concerned. But, the most important matter of service industries lets customers to enjoy the services instead of leave away from services. Therefore, this idea is equally similar with the end goal of interactive voice recognition because using of this kind of sophisticated technology is not to use for leave valuable customers. So, the reduction of responsive time is mentioned one of the positive impacts of IVR but results have shown that the respondents were discontent with the time as their expectation with the use of a machine was much higher. As a result, responsive time also seemed to be the major cause of their frustration and immediate withdrawal from the conversation. This was a common consensus among entire respondents that in case of poor services and long time for non-responsive in AI, all their business activities with the company will withdraw.

Also, research findings have very clearly reflected mainly that human interaction prefers to gain benefits of talking to a real human and to speed up of the process of their problems-solving. This has indicated that because the possibilities of the trained staffs work and their professional skill in resolving issues, as Martelo-Landroguez and Martin-Ruiz (2016) pointed out that professional staffs in the service clusters of banking industry are trained to solve issues as quickly and efficiently as possible very significant. Also, customers who had trouble with modern technology insisted on having a human interaction rather than with an AI, as Immonen et al. (2018) stated that customers likely be struggling with this kind of service would much prefer a human interaction. Additionally, some respondents were reflected that elderly customers who are less acquainted with the technology are daunting to cope with AI.

Also, results have shown that though IVR seemed always available and that time-saving technology on a deeper level but many respondents view the system as a shallow front line service with limited accessibility. The respondents were vocal about their discontent with the system and were not afraid to share their experience with their acquaintances that customers are not afraid to talk about their bad experiences in service organizations with others. Although many respondents were positive to the idea of IVR, they could not fully grasp the end goal of IVR and to whom it benefited the most, mainly because of the inconsistencies with the technology. This could possibly be because of the lack of communication from the company side to make it evident for the customer base about the limitations of the IVR.

Conclusion

Interactive voice recognition and artificial intelligence are new approaches to promote and develop services in economies of the world. However, it has seen that customer satisfaction is merely taken into consideration because most of the services providers in the banking sector intend to use IVR for cost cutting mechanism instead of to enhance customer satisfaction. Therefore, this research has tested how artificial intelligence is vital in IVR to promote customer satisfaction. For that purpose, the research has developed a new model which is CAM based on TAM to use ways in which to promote customer satisfaction in artificial intelligence perspective in IVR platforms. One of the significant reflections of the research findings is that customers are keen to learn and engage in IVR systems as far as those systems are easy to use and provide an adequate customer services. Also, it has urged that currently using IVR may be questionable due to lack behind the customers to choose most benefit approaches to enjoy services. As a result, customers are skeptical towards the quality of AI-driven customer services. But, most of customers believe that AI will be better in the future with the change in technology of IVR.

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