

Company innovation, technology development and service strategies of service companies in China: Basis for enhanced customer service framework

Guo, Yangang 

Graduate School, Lyceum of the Philippines University - Batangas, Philippines



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Abstract

While existing research sheds light on service innovation and technology adoption in general, a critical gap remains in understanding the nuanced dynamics at play within China's unique service industry landscape. This study addresses this gap by offering a comprehensive investigation into the interplay between company innovation, technology development, and service strategies employed by Chinese service companies. The findings serve not only to advance academic discourse but also to equip service companies with actionable knowledge for navigating the complex terrain of innovation and technological transformation in this rapidly evolving market. The study aimed to examine the company innovation, technology development and service strategies in service companies in China that was made the basis in developing an enhanced customer service framework. A descriptive design was used in the study as it allows for a comprehensive exploration of these interactions, providing a detailed picture of the current state of service innovation in China. Using a structured questionnaire ensured consistency in data collection, allowing for easier comparison and analysis of responses across different participants and service companies. This enabled the researcher to identify broader trends and patterns on how innovation, technology, and service strategies are applied. 384 employees from five Information Technology and Software Services companies in Jiangsu province, China were used as the respondents of the study. Based from the results, the respondents agreed that the service industries innovation adopted innovative culture, innovative structure and process and innovative leadership and management. The research reveals agreement among respondents that the company's technology development efforts, encompassing learning & teaching technology, ICT culture, and resource & infrastructure, are having a positive impact. A consensus among respondents was found and that the company's service strategies excel in accessibility, convenience, and professionalism, demonstrating its commitment to delivering a customer-centric experience. The study demonstrates a powerful and positive synergy between company innovation, technology development, and service strategies in service industries. These elements are intricately intertwined, with each influencing and reinforcing the others. An enhanced customer service framework was developed for the service industries. The research highlights the powerful synergy between company innovation, technology development, and service strategies. An effective customer service framework consider all three aspects holistically, ensuring innovation fosters technology adoption, which in turn fuels improvements in service delivery. The framework encourage creativity, experimentation, and employee empowerment to develop innovative service solutions.

Keywords: company innovation, technology development, service strategies, enhanced customer service framework

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1. Introduction

The service sector is one of the most important sectors of the Chinese economy, accounting for over 60% of GDP and employing over 70% of the workforce. In recent years, the Chinese service sector has experienced rapid growth, driven by factors such as rising incomes, urbanization, and the growth of the middle class. However, the Chinese service sector is also facing a number of challenges, such as increasing competition, globalization, and the rapid pace of technological change. To remain competitive and meet the changing needs of their customers, service companies in China focus on innovation, technology development, and service strategies. Innovation is essential for service companies in China to remain competitive and meet the changing needs of their customers. Service companies in China can innovate in a number of ways, such as developing new services, improving existing services, developing new ways to deliver services and using new technologies to improve service delivery among others (Wang, et. al., 2020). Some Chinese service companies are developing innovative new services such as online healthcare, online education, and online financial services. Other Chinese service companies are improving their existing services by using new technologies such as artificial intelligence and machine learning to personalize their services and improve their customer experience.

The Componential Theory of Organizational Creativity and Innovation by Amabile (2017) proposes that organizational creativity and innovation are the result of three components: expertise, creative-thinking skills, and motivation. Expertise refers to the knowledge and skills that employees have in their field. Creative-thinking skills refer to the ability to generate new ideas and solutions. Motivation refers to the willingness to take risks and try new things. A culture that encourages creativity, risk-taking, and experimentation is essential for innovation. This type of culture is characterized by a willingness to challenge the status quo, a tolerance for failure, and a focus on learning and improvement. The study of Wang, et al., (2021) found that innovative culture is positively associated with firm innovation performance, and that this relationship is mediated by knowledge sharing and risk-taking. Moreover, the findings of Zhang et al., (2022) found out that innovative culture is positively associated with firm innovation performance, and is mediated by employee empowerment and organizational learning. These studies suggest that innovative culture is an important factor that can help companies to innovate and improve their performance. These findings suggest that companies can improve their innovation performance by creating a culture that is supportive of innovation. This includes creating a culture that encourages risk-taking, knowledge sharing, and employee empowerment. Companies can also promote organizational learning by providing opportunities for employees to learn and develop new skills.

The Personalized Learning Framework by Shute (2018) proposes that learning is personalized to meet the needs of each individual learner. Technology can be used to support personalized learning by providing learners with tailored instruction and feedback. The ICT Resources and Infrastructure Model by Heeks (2018) proposes that ICT resources and infrastructure are the foundation for ICT adoption and use. ICT resources include hardware, software, and data. ICT infrastructure includes the networks and systems that support the use of ICT. Technology development can help service companies in China to improve their efficiency and effectiveness, and to create new and innovative services. Service companies in China can invest in technology development in a number of ways, such as developing new software and applications, investing in new hardware and infrastructure, adopting new technologies such as cloud computing and big data among others. Some Chinese service companies are developing new software and applications to improve their customer service and marketing operations. Other Chinese service companies are investing in new hardware and infrastructure to improve their network performance and security. Still other Chinese service companies are adopting new technologies such as cloud computing and big data to improve their data analytics capabilities and to develop new services (Liu, et al.,

2019).

Service strategies can help service companies in China to differentiate themselves from their competitors and build strong relationships with their customers. Service companies in China can develop service strategies like focusing on customer needs and developing services to meet those needs, providing excellent customer service, developing loyalty programs and building relationships with key customers. Chinese service companies are focusing on customer needs and developing services to meet those needs. Some Chinese online retailers are offering same-day delivery services and 24/7 customer support. Other Chinese service companies are providing excellent customer service by training their employees to be more responsive and helpful. Still other Chinese service companies are developing loyalty programs to reward their customers for their business (Wu, et al., 2018).

The Chinese government has a number of regulations that can impact company innovation, technology development, and service strategies. These regulations can be complex and time-consuming to comply with, and they can also change frequently (Chen, et al., 2019). China also has a long history of intellectual property (IP) theft. This can make it difficult for Chinese companies to protect their own IP, and it can also discourage foreign companies from investing in China (Lin, et al., 2018). Chinese companies also face challenges in accessing capital, especially for early-stage innovation. This is due to a number of factors, including the lack of a well-developed venture capital market and the government's tight control over the financial system (Liu, et al., 2020). Moreover, according to Sun, et. al., (2021), China has a shortage of skilled workers in science, technology, engineering, and mathematics (STEM). This can make it difficult for Chinese companies to develop and implement innovative technologies. Further, the Chinese culture can be a challenge for innovation. The traditional culture emphasizes conformity and obedience, which can stifle creativity and risk-taking (Zhao, et al., 2017).

There are lack of studies that focus on the specific challenges faced by service companies in China. Most studies on innovation and technology development in China focus on manufacturing companies, and there is limited research on the challenges faced by service companies. There are also lack of studies that use qualitative methods to understand the challenges faced by service companies in China. Most studies on innovation and technology development in China use quantitative methods, such as surveys and statistical analysis. Qualitative methods, such as interviews and focus groups, can provide a deeper understanding of the challenges faced by companies. Studies also focus on the impact of government policies on innovation and technology development in China. The Chinese government has a number of policies that are designed to promote innovation, but it is unclear how effective these policies are. More research is needed to understand the impact of these policies on service companies.

The present study may contribute to a number of factors that make innovation important for service companies in China. First, the Chinese economy is growing rapidly, and the demand for new and innovative services is increasing. Second, the Chinese government is investing heavily in research and development, and this is creating new opportunities for service companies to innovate. Third, the Chinese market is becoming more sophisticated, and consumers are demanding more innovative and customized services. Innovation is essential for the long-term growth and competitiveness of service companies in China. In today's rapidly changing and competitive global economy, companies that are able to innovate and develop new technologies and service strategies are more likely to succeed.

Despite the importance of innovation, many service companies in China are struggling to innovate. The present study would help to address these challenges by identifying the factors that are preventing service companies from innovating and developing new technologies and service strategies. The study would also identify best practices for overcoming these challenges and for promoting innovation in the service sector. Overall, a study on Company Innovation, Technology Development and Service Strategies among Service Companies in China would be a valuable contribution to the literature and would help to promote innovation in

the service sector in China.

Objectives of the Study - The study aimed to examine the company innovation, technology development and service strategies in service companies in China that was made the basis in developing an enhanced customer service framework. Specifically, the study determined the company innovation as innovative culture, innovative structure and process and innovative leadership and management; described the technology development in terms of use of learning and teaching technology, ICT culture and ICT resources and infrastructure; assessed the service strategies as to accessibility, convenience and professionalism; tested the significant relationship among company innovation, technology development and service strategies and developed an enhanced customer service framework.

2. Methods

Research Design - The researcher used a descriptive research design which involves the distribution of questionnaires in survey form to first distinguish the demographic profile of the respondents. Also, this method was used so that they can analyze the company innovation, technology development and service strategies in China. It is perceived that this research design is the most appropriate to use to gain a better understanding of how a certain group behaves, what motivates them, and what their characteristics are. Moreover, descriptive research helps researchers understand the nature and scope of a problem or issue and identify potential solutions (Hassan, 2022).

Participants of the Study - The target respondents of the study were namely Easy Tech, Oriental Cool Art, Songding Suzhou, Dream Cube and School-Enterprise Talent. The sample size was divided into five service industries and employees were the participants of the study. Service company employees are the respondents in the study on Company Innovation, Technology Development and Service Strategies among Service Companies in China because they are the ones who are most familiar with the company's innovation process and its service strategies. They are also the ones who are most likely to be affected by the company's innovation efforts. The employees also were the chosen respondents since they have first-hand knowledge of the company's innovation process. They know what the company is doing to innovate, and they know the challenges that the company is facing. They can provide insights into the company's service strategies. They know how the company is using technology to improve its services, and they can identify areas where the company can improve its service strategies. They can provide feedback on the company's innovation efforts. They can tell the company what is working and what is not working, and they can offer suggestions for improvement.

Instrument of the Study - This study made use of a quantitative survey questionnaire that was designed by the researcher based on the knowledge garnered from the review of related literature and theories pertaining to company innovation, technology development, and service strategies. The instrument used in the study consists of three parts. The first part of the instrument was used to assess the company innovation which includes innovative culture, innovative structure and process, and innovative leadership and management. The second part of the research instrument assessed the technology development in terms learning and teaching technology, ICT culture, and ICT resources and infrastructure. The third part of the questionnaire contains the service strategies in terms of accessibility, convenience, and professionalism. Overall, all parts of the research questionnaire consists of forty-eight (48) items. A four-point Likert scale was used by the researcher to measure the respondents' opinion regarding the variables. The data collected from the respondents were weighted on a scale of 1-4, with 1 being the lowest and 4 being the highest value, which will quantitatively gauge the level of company innovation, technology development, and service strategies of the respondents from Kunshan, Shanghai, Huzhou, Hangzhou, and Suzhou. The Likert Scale grading for this study was 3.5-4 for Strongly Agree, 2.5-3.49 for Agree, 1.5-2.49 for Disagree, and 1.00-1.49 for Strongly Disagree.

The questionnaire was validated after it had been reviewed by the research adviser to ensure that the contents of the questionnaire are clear, concise, accurate, reliable, and understandable for content validation. The

validation comments and suggestions will be considered when revising the instrument. The researcher presented the draft for content validation to ensure the item's content was clear and comprehensive, and subsequently produced a final copy after all validation procedures were accomplished. For the purpose of reliability, the questionnaire underwent a pilot study using Cronbach's Alpha Index of Reliability. The researcher distributed the questionnaire to 20 respondents from the research locale so as to examine the instruments and ensure that the questions are consistent and reliable.

Based on the result, the Company Innovation, Technology Development and Service Strategies Instrument has an Excellent consistency as exhibited by the Cronbach's Alpha value of (.976). This was validated by the Excellent remark from Company Innovation (.940); it was confirmed by the Acceptable result from Innovative Culture (.790), and Good results from Innovative Structure and Process (.841), and Innovative leadership and Management (.862); Also, it was validated by the Excellent remark from Technology Development (.936); it was confirmed by the Good results from Learning and teaching technology (.879), ICT Culture (.848) and ICT Resources and infrastructure (.869). It was further validated by the Excellent result from Service Strategies (.945); it was confirmed by the Good results from Accessibility (.893), Convenience (.847), and Professionalism (.841); which shows that the instrument at hand passed the reliability index test. Thus, the researcher can now proceed to the actual survey using the aforementioned instrument.

Data Gathering Procedure - The approved final questionnaire after incorporation of suggestions and recommendations, was used by the researcher as the tool in data gathering. After passing the reliability test and getting the necessary approvals from the university, the results were encoded and sent to the respondents online. During the questionnaire administration, the researcher attached an informed consent form and was given to each of the respondents from Kunshan, Shanghai, Huzhou, Hangzhou, and Suzho, and the requirements of the study were subsequently explained to them. After grasping the concepts of the study, if the respondent expresses willingness to participate, the questionnaire was forwarded to the respondent through email or WeChat and was returned the same way. Once the surveys are collected, the researcher tallied them using Excel software. For surveys that are not fully accomplished, the researcher will dispose them – only instruments that are fully answered were used to ensure equal assessment between the respondents and among all variables. Once the tally is complete, the excel files are sent to the researcher's statistician who will conduct the necessary tests needed to obtain the results from the research objectives. The tabulation, analyses, discussion, and conclusions were made by the researcher based on the findings of the study. An online marketing strategy will be developed.

Data Analysis - Weighted mean and rank were used to determine the company innovation as innovative culture, innovative structure and process and innovative leadership and management; describe the technology development in terms of use of learning and teaching technology, ICT culture and ICT resources and infrastructure; assess the service strategies as to accessibility, convenience and professionalism. The result of Shapiro-Wilk Test showed that p-values of all variables were less than 0.05 which means that the data set was not normally distributed. Therefore, Spearman rho was used as part of the non-parametric tests to determine the significant relationship. All analyses were performed using SPSS version 28.

Ethical Consideration - This study's confidentiality has been thoroughly checked. In terms of the respondents' participation in this study, the researcher ensured that the research policies and regulations of the university were followed. And the data gathering constraints of the school were fully understood by the respondents from Kunshan, Shanghai, Huzhou, Hangzhou, and Suzho. Initially, the researcher confirmed that the respondents agreed to participate in the study after explaining the study criteria, purpose, and location. The researcher guaranteed that all participants were not pressured because the study was based on the participants' free involvement. The respondents' identities and responses will be kept private since they will only be used for academic reasons in accordance with the Data Privacy Act of the Philippines and China. The safety of respondents was also considered, as the current study will do no damage to participants. Finally, by following all of the essential ethical procedures for this study, the researcher verified that all permission letters were delivered and approval was granted with signatures of the appropriate office before completing the study. Also,

participants have the right to withdraw from the research if, after being informed of the requirements, they choose not to consent. The researcher protected the confidentiality of the individual participants for the purposes of this study. Respondents can also determine how much of their information is disclosed in different contexts. The researcher notified all consumer respondents about how their information and responses would be used for this work, and the research was carried out with their full consent. Informed consent is a central tenet of research ethics. Its purpose is for human subjects to enter the study freely (voluntarily), with full awareness of what it includes, and to provide authorization prior to actually participating in the research. The researcher ensured that all participants gave informed permission for the purposes of this study. By doing so, the researcher assured that all participants understand the research's concept, its application, and where it will be published.

3. Results and discussion

Table 1

Summary Table on Company Innovation

Key Result Areas	Composite Mean	VI	Rank
Innovative Culture	2.99	Agree	3
Innovative Structure and Process	3.15	Agree	1
Innovative Leadership and Management	3.08	Agree	2
Grand Composite Mean	3.07	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 1 summarizes the company innovation as to innovative culture, innovative structure and process and innovative leadership and management. It can be seen that the grand composite mean is 3.07 indicating agreement on all the dimensions. Out of the three dimensions, innovative structure and process (3.17) got the highest score. Employees might appreciate having well-defined structures and processes for innovation, as it provides a clear roadmap for how to contribute and navigate the innovation process. This might lead to increased efficiency, reduced confusion, and a sense of direction. A well-structured innovation process might enable the company to allocate resources more effectively, focusing on promising ideas and initiatives. This might also lead to greater perceived value and impact of the innovation efforts. Some employees might prefer a structured approach to innovation, as it offers clear opportunities for individual contributions and recognition. This might be motivating and empowering for employees who like to see their ideas translated into actionable outcomes.

A study from Gassmann and Enkel (2021) disclosed that clear structures and processes can facilitate communication and collaboration between different teams and departments involved in innovation, fostering a more inclusive and effective innovation environment. Defined structures and processes can enhance transparency by clarifying roles, responsibilities, and expectations. This can also promote accountability, ensuring that everyone is working towards shared goals. Ceccagnoli, et al., (2020) found out that processes may provide employees with access to necessary tools and support, such as training, funding, and mentorship, which can empower them to confidently participate in the innovation process. Effective structures and processes can help mitigate risks associated with innovation, such as project failures or wasted resources. This can provide employees with a sense of security and encourage them to participate more actively. Further, Song, et al., (2019) demonstrated that if the company culture already values orderliness and efficiency, a structured approach to innovation might align well with employee expectations and preferences, leading to higher satisfaction. In times of uncertainty, clear structures and processes can provide employees with a sense of control and stability, which may be particularly valuable in the context of innovative endeavors.

Table 2

Summary Table on Technology Development

Key Result Areas	Composite Mean	VI	Rank
Learning and Teaching Technology	2.85	Agree	1
ICT Culture	2.72	Agree	3
ICT Resources and Infrastructure	2.84	Agree	2
Grand Composite Mean	2.80	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 2 shows the summary on technology development as to learning and teaching technology, ICT culture and ICT resources and infrastructure. Overall, the grand composite mean of 2.80 implies that the respondents generally agreed on the dimensions for technology development. The highest in rank among technology development where respondents generally agreed is on learning and teaching technology (2.85). The **high ranking and general agreement regarding learning and teaching technology likely stems from its potential to address key needs in service companies, including continuous learning, collaboration, knowledge sharing, innovation, and employee engagement.** By investing in and effectively utilizing this technology, service companies might empower their employees, improve service delivery, and stay competitive in the dynamic market landscape.

A study by Deloitte (2019) highlights the importance of "lifelong learning" in the digital age and how organizations need to invest in providing employees with access to learning resources and technology to support continuous skill development. Service industries are dynamic, requiring employees to adapt to changing customer needs, technologies, and market trends. Learning and teaching technology facilitates continuous learning and upskilling, empowering employees to stay relevant and competitive. As revealed in the study of Lee et al. (2019), positive user experience with technology platforms used for knowledge sharing can encourage employees to actively contribute and engage in knowledge exchange, leading to organizational benefits. Learning and teaching technology platforms can foster collaboration and knowledge sharing between colleagues and teams. This allows employees to learn from each other, share expertise, and improve problem-solving capabilities, ultimately enhancing service quality and customer satisfaction. Further, Burnard et al. (2020) highlights the importance of cultural factors like innovation and learning in successful technology adoption. Organizations need to create an environment that encourages exploration and learning to maximize the benefits of technology. Investing in learning and teaching technology can signal a commitment to innovation and continuous improvement within the organization. This can motivate employees to explore new ideas, experiment with different technologies, and contribute to organizational progress.

Consistent with the study of Robinson et al. (2019) there was a link between digital literacy skills and employee engagement. When employees feel equipped to use technology effectively for learning and development, they are more likely to be engaged and productive. Providing access to learning and teaching technology can empower employees to take control of their learning and development and personalize their learning journeys. This can lead to increased engagement, motivation, and overall satisfaction with their work.

Table 3
Summary Table on Service Strategies

Key Result Areas	Composite Mean	VI	Rank
Accessibility	2.52	Agree	3
Convenience	2.81	Agree	1
Professionalism	2.59	Agree	2
Grand Composite Mean	2.64	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 3 presents the summary on service strategies as to accessibility, convenience and professionalism. The grand composite mean of 2.64 indicates agreement on all the dimensions cited. Among the three dimensions, convenience ranked the first with a mean score of 2.81 and was agreed by the respondents. Agreement on convenience, professionalism, and accessibility means that service companies prioritize customer needs and strive to make their services easy to use, reliable, and inclusive. This focus on customer-centricity can lead to high customer satisfaction and loyalty. Likewise, when customers perceive services as convenient, professional, and accessible, they might develop positive associations with the company. This can strengthen the brand image and attract new customers, leading to competitive advantage.

In today's fast-paced world, individuals prioritize saving time and effort. A study by Bargh, et. al., (2018) found that convenience directly influences consumer satisfaction and loyalty, suggesting higher value placed on services that save time and streamline processes. This is a valuable insight that supports the idea that

individuals in today's fast-paced world prioritize saving time and effort, and therefore place higher value on services that are convenient and streamline processes. The findings of Grewal, et. al., (2018) found that consumers are accustomed to readily available options and effortless access to information and services. The authors point out that the rise of technology and digital platforms has conditioned consumers to expect seamless and convenient service experiences. Their research emphasized the profound shift in customer behavior and expectations driven by digital technologies. They provide a valuable framework for organizations to navigate this transformative era and design digital customer experiences that drive engagement, loyalty, and brand success. The overall trend demonstrates that across various sectors, simplifying access, reducing time and effort, and offering flexible and personalized options are key to attracting and retaining customers in today's fast-paced world.

Table 4
Relationship Between Company Innovation and Technology Development

Variables	rho	p-value	Interpretation
Innovative Culture			
Learning and Teaching Technology	0.602**	<.001	Highly Significant
ICT Culture	0.519**	<.001	Highly Significant
ICT Resources and Infrastructure	0.647**	<.001	Highly Significant
Innovative Structure and Process			
Learning and Teaching Technology	0.520**	<.001	Highly Significant
ICT Culture	0.607**	<.001	Highly Significant
ICT Resources and Infrastructure	0.556**	<.001	Highly Significant
Innovative Leadership and Management			
Learning and Teaching Technology	0.482**	<.001	Highly Significant
ICT Culture	0.580**	<.001	Highly Significant
ICT Resources and Infrastructure	0.476**	<.001	Highly Significant

***. Correlation is significant at the 0.01 level*

As seen in the table 4, the computed rho-values ranging from 0.476 to 0.647 indicate a moderate to strong relationship among the sub variables of company innovation and technology development. There was a statistically significant relationship between company innovation and technology development because the obtained p-values were less than 0.01.

The continuous technology advancement and its strategic application are crucial for service companies to thrive in today's dynamic and competitive landscape. Service industries are characterized by high competition and numerous players offer similar services making differentiation crucial. Also, there is a rapidly changing customer needs and expectations. Customer preferences and technological advancements can quickly render existing service models obsolete. In this dynamic environment, technology acts as a powerful catalyst for innovation by enabling service companies to develop new service offerings by creating novel service experiences leveraging cutting-edge technologies like artificial intelligence, big data and automation. Through technology, existing services are also improved for greater efficiency and customer satisfaction. Companies embracing technology-driven innovation enjoy several advantages like differentiation. Service companies stand out from competitors by offering unique and innovative services powered by new technologies. It can also enhance efficiency, reduce costs, and improve service quality, leading to a stronger market position. Likewise, it delivers personalized, convenient, and valuable service experiences that resonate with customers and through technology, the brand image is improved. The company is perceived as a forward-thinking and innovative company, attracting talent and investors.

Barczak et al. (2018) research emphasizes the critical role of innovation in service industries, and how technology is a powerful driver for this innovation. By continuously experimenting and leveraging new technologies, service companies can differentiate themselves, improve their offerings, and stay ahead of the curve in this dynamic and competitive landscape. Their study highlights how continuous innovation driven by technology allows service companies to differentiate themselves and stay ahead of the curve. Based on the findings of Bharadwaj et al. (2018), service industries are undergoing a significant shift due to the rise of digital technologies. Companies embracing digital transformation are experiencing greater efficiency, improved service

quality, and enhanced customer satisfaction. Traditional service models are challenged by digital platforms and new service ecosystems, pushing companies to adapt and innovate to remain competitive.

Table 5
Relationship Between Company Innovation and Service Strategies

Variables	rho	p-value	Interpretation
Innovative Culture			
Accessibility	0.608**	<.001	Highly Significant
Convenience	0.621**	<.001	Highly Significant
Professionalism	0.448**	<.001	Highly Significant
Innovative Structure and Process			
Accessibility	0.719**	<.001	Highly Significant
Convenience	0.699**	<.001	Highly Significant
Professionalism	0.517**	<.001	Highly Significant
Innovative Leadership and Management			
Accessibility	0.825**	<.001	Highly Significant
Convenience	0.627**	<.001	Highly Significant
Professionalism	0.661**	<.001	Highly Significant

** . Correlation is significant at the 0.01 level

As seen in table 5, the computed rho-values ranging from 0.448 to 0.825 indicate a moderate to very strong relationship among the sub variables of company innovation and service strategies. There was a statistically significant relationship between company innovation and service strategies as the obtained p-values were less than 0.01. The high significant relationship between company innovation and service strategies in service companies arises from the need to adapt to dynamic customer needs and differentiate in a competitive landscape. By effectively employing innovation to shape and implement service strategies, companies can deliver unique value, enhance customer experiences, and achieve sustainable success.

Service industries are characterized by rapidly evolving customer needs and expectations. Trends shift quickly, driven by technology, social changes, and individual preferences. Intense competition with numerous players offering similar services further intensifies the need to stand out and cater to evolving customer demands. In this dynamic environment, innovation becomes a powerful tool for differentiation. Service companies that embrace innovative strategies can develop new service offerings. It can also create novel experiences and solutions that address emerging customer needs or disrupt existing market dynamics. Likewise, it enhances existing services. It also improves service quality, personalize experiences, and streamline processes to stand out from competitors. It also build a reputation for being forward-thinking and customer-centric, attracting and retaining loyal customers.

Chen et al. (2018) emphasized the importance of maintaining quality standards and avoiding deceptive practices during service development and delivery. Their research finds that tourists with a positive destination image and perception of local products are more likely to be loyal, but this connection weakens if they encounter unethical practices or negative service experiences. This implies that innovation should not come at the expense of ethical considerations. While new service ideas might be enticing, ensuring responsible practices, transparency, and fair treatment of customers and employees is crucial for long-term success. They also highlighted the importance of understanding and catering to customer needs, preferences, and values. Their research shows that positive destination image and perceived value directly influence tourist satisfaction and loyalty. This underlines the need for customer-centric innovation. When developing new services, companies should prioritize addressing real customer needs and offering meaningful value, rather than solely focusing on novelty or technological advancements.

The study of of Parvatiyar, et. al., (2019) sheds light on the crucial role of technology-enabled service innovation in driving service quality, customer engagement, and ultimately, firm performance. By understanding the distinct contributions of different types of innovation and their mediating mechanisms, service companies can make informed decisions about their innovation strategies and maximize the positive impact on their performance. In addition, Frow et al., (2021) research emphasizes the shift towards **collaborative and open innovation** in the service industry. By actively engaging customers and stakeholders in service co-creation,

companies can develop meaningful and relevant offerings, enhance customer satisfaction, and achieve sustainable success in a competitive landscape.

Table 6
Relationship Between Technology Development and Service Strategies

Variables	rho	p-value	Interpretation
Learning and Teaching Technology			
Accessibility	0.654**	<.001	Highly Significant
Convenience	0.593**	<.001	Highly Significant
Professionalism	0.717**	<.001	Highly Significant
ICT Culture			
Accessibility	0.831**	<.001	Highly Significant
Convenience	0.664**	<.001	Highly Significant
Professionalism	0.679**	<.001	Highly Significant
ICT Resources and Infrastructure			
Accessibility	0.616**	<.001	Highly Significant
Convenience	0.629**	<.001	Highly Significant
Professionalism	0.654**	<.001	Highly Significant

** . Correlation is significant at the 0.01 level

As seen in table 6, the computed rho-values ranging from 0.593 to 0.831 indicate a moderate to very strong relationship among the sub variables of technology development and service strategies. There was a statistically significant relationship between technology development and service strategies because the obtained p-values were less than 0.01. The key to a successful relationship between technology development and service strategies is not just adopting the latest technology, but strategically selecting and integrating it in a way that enhances customer experiences, improves service delivery, and creates value for both the company and its customers.

Technology advancements offer numerous tools and platforms to streamline and improve service delivery processes. Automation, data analytics, AI-powered solutions, and mobile technologies can reduce manual tasks and errors, personalize and customize service experiences, increase service speed an accessibility and optimize resource allocation an improve operational efficiency. Technology enables the development of entirely new service categories and features that were previously impossible. This allows service companies to differentiate themselves from competitors, expand their target audience and market reach, offers innovative and differentiated value propositions and address evolving customer needs and preferences.

The findings of Frow et al. (2021) explore the concept of service co-creation, where customers actively participate in designing and developing service offerings. Technology platforms facilitate this collaborative approach, enabling interactive features, personalized recommendations, and real-time feedback mechanisms, ultimately leading to deeper customer engagement and service innovation. This emphasizes the role of technology as a bridge between service strategies and customer engagement. Bharadwaj et al. (2023) investigate the economic impacts of digital service innovation in the banking industry. Their research shows that banks implementing innovative digital services experience significant improvements in operational efficiency, cost reduction, and revenue growth. This demonstrates how technology development can be leveraged within service strategies to optimize service delivery and achieve financial benefits. Further, et. al., (2020) suggest that service companies need to develop "dynamic capabilities" for continuous innovation and adaptation in the digital age. These capabilities include utilizing technology to streamline internal processes, personalize service offerings, and respond to changing customer needs, showcasing how technology is integrated into service strategies for operational agility and customer-centricity.

Enhanced Customer Service Framework

The customer service framework implications arising from the relationship between company innovation, technology development, and service strategies in service companies are multifaceted and wide-ranging. The customer service framework may enhance customer experience. Innovative approaches and technology-driven service strategies can lead to more personalized, efficient, and engaging customer experiences. It will also

improve customer satisfaction and loyalty as the positive customer experiences fostered by innovative and technology-driven service strategies lead to higher customer satisfaction, loyalty, and advocacy. Likewise it will increase operational efficiency and cost reduction. Technology-driven service strategies can streamline internal processes, automate tasks, and improve resource allocation, leading to reduced operational costs. In addition, the customer service framework may lead to differentiation and competitive advantage. Companies that embrace innovation, leverage technology effectively, and develop strong service strategies can gain a competitive edge. By understanding the implications of this framework, service companies can develop and implement innovative service strategies that leverage technology to deliver exceptional customer experiences, improve operational efficiency, and gain a competitive edge in the market.

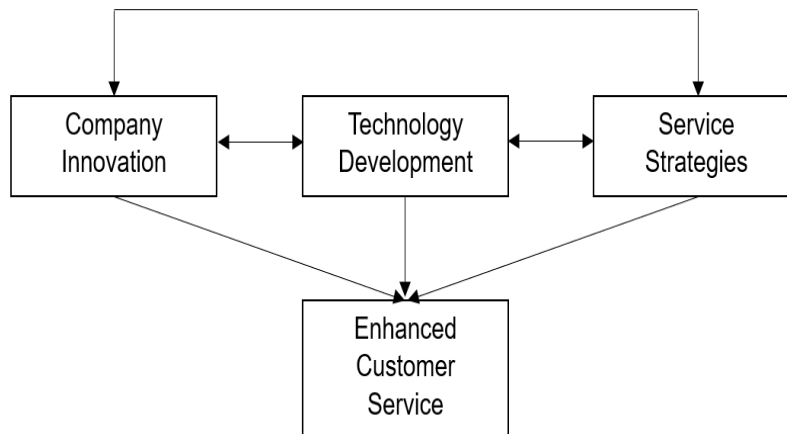


Figure 1: Enhanced Customer Service Framework

The relationship between company innovation, technology development and service strategy is complex and dynamic. The specific ways in which company innovation, technology development, and service strategies interact vary depending on the unique context and goals of each service company. However, understanding the significance of their interconnection is crucial for developing effective service strategies in today's technology-driven landscape.

Company innovation drives technology development. Innovative ideas and service concepts often require new technologies or adaptations of existing ones to be realized. For instance, the concept of personalized recommendations in online shopping led to the development of complex data analysis algorithms and recommendation engines. Investing in research and development fosters a culture of innovation, attracting tech talent and creating an environment where technology development thrives to support innovative service ideas.

Technology development enables new service strategies. Advancements in technology like artificial intelligence, automation, and the internet of things (IoT) open up possibilities for novel service offerings, enhanced customer experiences, and improved operational efficiency. For example, chatbots enable 24/7 customer support, while IoT sensors in connected devices allow for predictive maintenance and proactive service solutions. New technologies present opportunities for disrupting existing service models and creating disruptive innovations, leading to competitive advantage and market leadership.

Service strategies guide technology development. Clearly defined service strategies outlining customer needs, service goals, and target markets provide direction for technology development efforts. This ensures that technology investments are aligned with strategic objectives and deliver tangible benefits for service delivery. Feedback from customer experiences and service performance data informs technological improvements and future development priorities, ensuring continuous alignment between technological capabilities and service requirements.

The combined force of company innovation, technology development, and strong service strategies creates a powerful synergy. This enables service companies to develop a unique and differentiated service offerings. Technology facilitates the implementation of innovative concepts and personalized experiences. It also responds quickly to changing market dynamics and customer needs. Agile adaptation through technology-driven service innovation ensures ongoing relevance and competitiveness. Technology automates tasks, streamlines processes, and improves resource allocation, leading to increased profitability and through technology, it may enhance customer experiences through innovative services foster trust and engagement.

4. Conclusions and recommendations

The respondents agreed that the service industries innovation adopted innovative culture, innovative structure and process and innovative leadership and management. The research reveals agreement among respondents that the company's technology development efforts, encompassing learning & teaching technology, ICT culture, and resource & infrastructure, are having a positive impact. The research reveals a consensus among respondents that the company's service strategies excel in accessibility, convenience, and professionalism, demonstrating its commitment to delivering a customer-centric experience. The study demonstrates a powerful and positive synergy between company innovation, technology development, and service strategies in service industries. These elements are intricately intertwined, with each influencing and reinforcing the others. An enhanced customer service framework was developed for the service industries.

The Human Resource head may hire individuals with diverse skillsets and a passion for innovation and provide training and development programs to upskill employees on new technologies and trends. The chief technology officer may align technology development with overall business goals and service strategies. Focus on technologies that can address customer needs, improve efficiency, and create competitive advantage. The marketing manager may utilize data and analytics to personalize service experiences and tailor offerings to individual customer preferences. The customer service framework may be recommended for reference to the service industries. Future researchers may foster partnerships with industry leaders and policymakers to translate research findings into actionable strategies and policies that support service innovation.

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