

Internet enterprise management, network structure and network capabilities: Basis for internet industry technology innovation framework

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Abstract

This article provides an in-depth exploration of the interdependence between Internet enterprise management, network structure, and network capabilities, and how they jointly influence the technological innovation framework of the Internet industry in Shandong Province, China. This study points out that efficient Internet enterprise management is characterized by precise business strategic planning, active participation of stakeholders, and firm and powerful leadership, which can optimize the allocation of resources and promote collaboration among teams. This management style creates a flexible and adaptable network structure, creating a conducive environment for innovation. At the same time, strong network capabilities ensure the effective flow and utilization of information and resources, which is crucial to implementing innovation strategies. Combining empirical data, this study analyzes the role of these factors within the framework of technological innovation and points out that the interaction between them lays a solid foundation for technological innovation. Key findings highlight the importance of redundancy, proactive monitoring, and effective conflict resolution in network relationships. Ultimately, the research shows that a network structure with orderly management, strong centrality, and effective network relationships has a significant positive contribution to the competitive advantage and innovation performance of Internet companies.

Keywords: internet enterprise management, network structure, network capabilities

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1. Introduction

The technological innovation of Internet companies mainly comes from within the company, that is, it relies on its own resources and capabilities to complete the entire innovation process. However, with the gradual acceleration of economic globalization and the continuous advancement of science and technology, Internet companies are facing more and more challenges such as increased environmental uncertainty, scarcity of technological innovation resources, and shortened product replacement cycles. The organizational form is gradually unable to adapt to today's fierce competition environment, and it is no longer possible to achieve the goal of rapid development of the Internet industry solely relying on the internal resources and capabilities of Internet companies. Thus, while improving their own internal capabilities, Internet companies have also begun to utilize external resources and capabilities, establish cooperative relationships with other companies in the industry, and obtain information, knowledge and other resources required for technological innovation activities. The innovation framework of the Internet industry has also been formed.

With the rapid development of the Internet industry, the Internet industry innovation framework has played an important supporting role in the innovation activities of Internet companies, and has gradually become an important source of the core competitiveness and innovation advantages of Internet companies. More and more Internet companies have begun to form or join Come to the Internet industry innovation framework. Innovation is a key factor for enterprises to create core competitiveness and maintain competitive advantage. Internet companies should serve as innovation entities, promote their own development and improve their innovation capabilities. As technological change accelerates and market competition intensifies, the importance of improving innovation capabilities for enterprises has become increasingly prominent Xu et al.,(2019). In the innovation framework of the Internet industry, Internet companies share knowledge, technology and other resources through the innovation framework, communicate and learn from each other, and continuously improve their competitiveness.

Yin (2023) believes that enterprises that are at the core of the innovation network are more likely to obtain the knowledge, resources and information needed for enterprise operations, improve the enterprise's management and governance of the innovation framework, improve the operational efficiency of the network, and then achieve collaboration between enterprises. innovation effect. Therefore, the outstanding core companies in the Internet industry innovation framework are operators of integrated alliance capabilities in the innovation framework. They can rely on their resource and status advantages to influence the behavior of other network members, optimize the network structure, plan the direction of network development, and promote mutual adaptation of network members. Coordinate with each other to achieve effective management of the entire network. First of all, Internet enterprise management has a profound impact on the innovation framework of the Internet industry.

Feng et al. (2023) believe that enterprises building an innovation network framework is a dynamic organizational process, so enterprises should accurately identify, Form and manage innovation networks. They believe that the business strategy of a network demonstrates the joint efforts, continuous collaboration and optimized cooperation of members within the network for a unified goal, allowing the business strategy formulated by the enterprise to maintain a healthy operating status in the ever-changing external environment. Secondly, for Internet companies, the stakeholder relationships of the Internet innovation framework to which they belong can rely on their industrial advantages to bring newer and faster heterogeneous resources to companies in the innovation framework compared to other industries, helping companies in a timely manner. Capture market development dynamics and consumer needs to improve the overall investment efficiency of

enterprises. Enterprises should make full use of the rich social capital and financial capital brought by the stakeholder relationships in their innovation frameworks, and "value-identify" and "fully utilize" them to "effectively transform" them into what is needed for company development.

Liu et al. (2024) believe that a stable innovation framework can improve the feasibility of complementary resources for enterprises, promote the transfer of explicit and tacit knowledge, share R&D costs, reduce R&D risks, and at the same time, enterprises can share information with stakeholders, business synchronization, thereby creating a more efficient supply chain. Finally, as a component of network characteristics, the leadership and control relationship of network members is closely related to the innovative activities of the subjects within the network. As long as there are communication activities between each other, there will be leadership and control relationships. Existing research points out that the closeness of member connections between networks will be affected by factors such as inter-organizational trust and member satisfaction, and will affect members' learning abilities and network innovation performance. Wang (2018) believes that corporate leadership will affect the tightness of the connections between network members and control the internal members of the innovation framework, thus affecting the realization of the innovation network. It can be seen that business strategy, stakeholder relationships, leadership and control play an important role in Internet enterprise management.

Also with the rapid development of information technology, all walks of life need information technology to improve production efficiency, enhance competitiveness and meet user needs. The profound changes in the market environment and technological environment have fully demonstrated that innovation using the network as a platform will become the new normal of enterprise innovation and development. Competition and cooperation relationships are deeply embedded in enterprise innovation networks, and there are complex connections. Enterprises need to effectively manage the internal network. The competition and cooperation relationship between organizations can solve the innovation dilemma that enterprises fall into due to competition and cooperation tension, weaken the negative impact of competition and cooperation relationship, and promote the success of enterprise innovation. For enterprises, it can guide enterprises to pay attention to their own network structure, help enterprises reduce independent research and development risks by building efficient innovation networks, improve knowledge acquisition efficiency and innovation transformation efficiency, and better promote enterprise innovation performance (Fang, 2022). Moreover, with the reconstruction and dynamic evolution of network structure, the form, content, intensity, structure of network relationships between enterprises are constantly changing, and the connotation of network relationships is becoming increasingly rich. Therefore, the continuous evolution of the enterprise innovation framework will be affected by the resource endowments of enterprises inside and outside the framework, the influence of different factors such as network-building ability and willingness, network-building opportunities, etc. (Ge, 2022). In the network structure of the innovation framework, the higher the enterprise network centrality and the more central the position, it means that the central enterprise of the innovation framework can have influence and control over the entire innovation framework products in a wider range and have more partners. Relationships can play a better connecting role between innovation framework enterprise entities, thereby realizing the optimal allocation of product trade resources among innovation framework entity enterprises, and promoting the improvement of the quality of enterprise export products (Yin, 2023). In addition, effective network structural relationships also have a special impact on innovation frameworks. Wang (2023) believes that effective network relationships and structures can help form a good knowledge sharing atmosphere within the innovation framework and enable timely sharing of information and experience.

Network capabilities are the source of power for value creation in the Internet industry. They are also the main channel for the Internet industry to obtain value growth. They are also the value-added point for enterprises to improve their innovation capabilities. Whether they can effectively utilize resources in the enterprise's internal and external networks is a concentrated expression of the enterprise's framework, using the ability of the framework to help enhance the ability and status of Internet companies to create value has become a new effective means of competition in the mobile Internet industry. Wang (2018) believes that in the innovation

framework, Internet companies coordinate network resources and the behaviors and relationships of member companies, which is conducive to the formation of a harmonious and stable network innovation environment, thereby increasing communication and exchanges among members, establishing trust among members, and effectively Reduce opportunistic behavior within network frameworks. In addition, enterprise network capabilities and resource patchwork can become an important link between the enterprise's innovation framework and innovation performance. In the process of participating in the innovation framework, enterprises can use network capabilities to protect enterprise security and effectively participate in the innovation framework activities (Jiang, 2022). Internet companies obtain resources and create value more effectively through relationships in various dimensions of the external structure, thereby improving the company's rapid acquisition of customer needs, boosting business growth, and expanding market share. It is also a key capability and element for companies to gain competitive advantage. Li (2020) believes that enterprises can use the basic model of cooperation and symbiosis to expand entrepreneurial value, and then expand their business scope and fields. The reason is that cooperation and collaboration are inherently highly scalable and can help enterprises form a highly complex collaborative innovation framework.

This article starts with variables such as Internet enterprise management, network structure and network capabilities in the Internet industry, and explores the innovative role of the innovation framework in enterprises and how it affects the mechanism of innovation in the Internet industry. By reading and sorting out relevant literature, this paper incorporates Internet enterprise management, network structure and network capabilities in the innovation framework into the research framework as variables, analyzes their role in the innovation framework, and then puts forward relevant theoretical hypotheses.

Objectives of the Study - This study aims to determine the internet enterprise management, Network capabilities and Network structure of internet industries in Shandong province of China that will provide the basis in developing the internet industry technology innovation framework. Specifically, it determined the internet enterprise management in terms of business strategy, stakeholders' relationship, leadership and control; evaluated the network structure in terms Network relationship Strength, network centrality and effectiveness of network relationships; assessed the network capability in terms of network reliability, security, and scalability. Tested the significant relationship among internet enterprise management, Network capabilities and Network structure; developed a framework for internet industry technology innovation.

2. Methods

Research Design - The research design to be used in this study is the mixed method, it includes qualitative method and a survey research design method. It used the Internet enterprises in Shandong Province of China as an example, the survey research design distributes questionnaires from the perspective of enterprise senior manager. For research purposes, a structured questionnaire was used as a survey instrument. The premise of using the above methods is to help researchers collect information. In addition, in order to better explain aims to investigate the internet enterprise management, Network capabilities and Network structure of internet industries on internet industry performance, the research will also use collected data to make quantitative analysis.

Participants of the Study - Mainly select the Senior staff and management level personnel of the enterprise in Shanxi province of China. These personnel have a deeper understanding of the development and operation of the enterprise, so that they can better complete the questions in the survey questionnaire and enhance the accuracy and reliability of the data. Mainly select the middle and high-level management personnel of the enterprise. These personnel have a deeper understanding of the development and operation of the enterprise, so that they can better complete the questions in the survey questionnaire and enhance the accuracy and reliability of the data. They can expect to use the Questionnaire Star software to conduct the questionnaire survey. To fully describe the objective situation, the questionnaire was distributed in the form of extensive participation of multi-dimensional personnel. This research is conducted in the new generation of Internet enterprises in Shandong Province and selects the enterprises in the high-tech industrial parks and industry alliances that are

mainly analyzed in the investigation as the research objects. The selected enterprises are mainly 5 enterprises in the IT and electronic information industries. There are about 1,000 staff and management level personnel in these industries, Specifically, the demographic profile of the respondents will be investigated in terms of gender, age, position, and tenure. 500 questionnaires will be the respondents. This study will use the method of sampling survey to carry out stratified sampling on managers and staff of 500 Internet companies, covering positions from management to sales.

Date Gathering Instruments - 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 internet Enterprise Management, Network structure and Network capabilities. The instrument used in the study consists of four parts. Part 1 mainly includes the basic information of the manager participating in the questionnaire, including gender, age, position, working years, etc., for the analysis of the results. Part 2 the instrument is the Internet Enterprise Management which are measure in term of Business Strategy; Stakeholders' Relationship, Leadership and Control, each of them will have 5 indicates to measure. Part 3 the instrument is the Network Structure, it includes Network Relationship Strength, Network Centrality and Effectiveness of Network Relationships. each of them will have 5 indicates to measure. Part 4 the instrument is the Network Capability, it includes Network Relationship and Network centrality. each of them will have 5 indicates to measure.

Each of part will use a 4 point as scale to measure different participant's perceptions of the question. Such as 4 verbally interpreted as strongly agree, 3 as agree, 2 is disagree, and 1 is strongly disagree. Overall, all parts of the research questionnaire consist 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 Jinan city, Jining city, Qingdao city. 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 results obtained from the Cronbach test, the following values and interpretations are tabulated. In the indicators of internet Enterprise management of Cronbach Alpha result. It was confirmed by the Good result from business strategy (0.829), and acceptable results from stakeholders' relationship (0.733), and the leadership and control is good results (0.856). In the indicators of Network Structure of Cronbach Alpha result. It was confirmed by the acceptable result from network relationship strength (0.708), and acceptable results from network centrality (0.890), and the effectiveness of network relationships is good results (0.795). In the indicators of Network Capabilities of Cronbach Alpha result. It was confirmed by the acceptable result from Network reliability (0.714), and acceptable results from Security (0.728), and the effectiveness of Scalability is acceptable results (0.795).

Data Gathering Procedure - The researchers will submit the proposal for comments and compile the questionnaire after reviewed and approved by the paper committee and will translate the questionnaire into paper and electronic versions. The researcher sends the official letter of the survey to the Technology innovation network department of the surveyed company. After approval, the questionnaire will be distributed and collected among different employees in the whole company and will be collected uniformly by the researcher. Before the investigation, the researchers will make a written commitment to ensure the research purpose and information

security.

Data Analysis - Weighted mean and rank were used to determine the internet enterprise management in terms of business strategy; stakeholders' relationship, leadership, and control; to describe the network structure in terms Network relationship Strength Network centrality and Effectiveness of Network Relationships; and to determine the network capability in terms of network reliability, security, and scalability. 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 Considerations - All content of this research is conducted ethical, and all information collected and processed is used for academic research only to maintain the quality and integrity of the research. The researchers will contact the human resources department of the research institution, send a formal letter to solicit the consent of the interviewed companies, and then conduct inquiries to the interviewees through email or small questionnaire procedures. The researchers will respect the voluntary filling of the respondents, will not harm the interests of the respondents, and ensure their information privacy.

Expected Output - From a theoretical point of view: First, this article studies the management mechanism of business strategy for Internet enterprise innovation under the influence of Internet enterprise management, the establishment and operation of the innovation framework, and how to change the framework cooperation through stakeholders' relationship, leadership and control Improving the innovation framework through the tightness of member relationships provides a theoretical reference for the innovation of Internet companies. Second, research results show that network structure plays an irreplaceable role in the innovation framework. In this study, this paper defines the Network relationship Strength, Network centrality and Effectiveness of Network Relationships of network structure, enriches the theoretical research on the leadership of core enterprises in technological innovation networks, and provides guidance for the effective role of network structure in the innovation framework. Theoretical basis. Finally, it studies the impact of network capability on the stability and development of Internet enterprise innovation framework through network reliability, which not only supplements the empirical research in the security field related to innovation framework, but also enriches the research results on the scalability of enterprise innovation framework. From a practical sense, the research in this article helps members of the Internet enterprise innovation framework to clearly understand and position their own partnerships, and then contribute to the research activities of the innovation framework. Moreover, as the Internet industry is a forerunner in the formation and development of innovation frameworks and research on the mechanism of its innovation framework can help members within the framework to achieve targeted improvement and impact on technological innovation goals, thereby effectively improving innovation capabilities and establishing a basis for other industries. The innovation framework provides guidance.

Intended Research Utilization - Through this thesis research, in addition to hoping that this paper can be published publicly. We also hope to achieve the following results. First, the theme of our research is Internet Enterprise Management, Network Structure and Network Capabilities: Basis for Internet Industry Innovation Framework in Shandong province. It is hoped that analysis and evaluation methods such as paper surveys can be used from all levels to explore the innovation framework of the Internet industry. In addition, this article will share knowledge with the companies participating in the paper survey in the form of knowledge payment, to further improve its research theoretical system and achieve a win-win situation for the company and the author.

3. Results and discussion

Table 1 shows the performance of Internet companies in key areas of management. Overall, the comprehensive evaluation of each key result area of Internet enterprise management is very high. The overall composite mean of 3.57 reflects that the respondents' overall satisfaction with the company in these aspects has reached a level of strongly agree indicating that the company's management in all aspects is relatively successful.

Leadership and Control and Business Strategy received the highest recognition, showing companies are highly successful in these areas. Although stakeholder relations are ranked lower, the evaluation is still very high, indicating that the company has a good foundation in communicating and managing stakeholder relations.

Table 1

Summary Table on Internet Enterprise Management

Key Result Areas	Composite Mean	VI	Rank
Business Strategy	3.61	Strongly Agree	2
Stakeholders' Relationship	3.48	Agree	3
Leadership and Control	3.62	Strongly Agree	1
Grand Composite Mean	3.57	Strongly Agree	

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

Leadership and control (composite mean 3.62, ranking 1): This area received the highest evaluation among respondents, indicating that respondents generally believe that companies perform very well in leadership and control. A rating of Strong Agree indicates a high degree of recognition that the company's leadership is able to formulate and execute strategies and control the company's operations. According to research by Kouzes et al. (2018), Excellent leadership can significantly enhance organizational performance, boost employee cohesion, and increase loyalty. Business strategy (composite average 3.61, ranking 2): Business strategy followed closely, and also received a strongly agreed evaluation. Respondents believe that the company performs very well in formulating and implementing business strategies and can effectively guide the company's development direction. Porter (2019) pointed out that Effective business strategies can not only enhance a company's market competitiveness but also bring long-term sustainable development to the company. Overall, the three indicators of Leadership and Control, Stakeholders' Relationship and Business Strategy are the keys to Internet company management. The company's management performance in various key areas has been highly recognized by respondents.

Table 2

Summary Table on Network Structure

Key Result Areas	Composite Mean	VI	Rank
Network Relationship Strength	3.58	Strongly Agree	3
Network Centrality	3.62	Strongly Agree	2
Effectiveness of Network Relationships	3.66	Strongly Agree	1
Grand Composite Mean	3.62	Strongly Agree	

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

This present that the overall composite mean (3.62, strongly agree), the comprehensive evaluation of each key result area of the network structure is very high. The overall composite mean of 3.62 reflects that the respondents' overall satisfaction with the company in these aspects has reached a level of strong agreement, showing that the companies surveyed are relatively successful in managing network relationship strength, network centrality and Effectiveness of Network Relationships.

Effectiveness of Network Relationships (comprehensive average 3.66, ranking 1), the effectiveness of network relationships has the highest score, indicating that respondents have a very high recognition of the company's performance in this aspect. Enterprises perform well in value consensus, collaboration, communication and conflict resolution, ensuring the efficiency and stability of network relationships. Research points out that Clear common goals and efficient communication mechanisms can significantly enhance the overall performance of the network and its problem-solving capabilities (Johnson et al., 2018)

Network centrality (composite mean 3.62, ranking 2), network centrality also received a strongly agreed evaluation. Respondents believed that the company performed very well in network centrality and could effectively serve as a central node for information and resources, promoting the network Internal information flow and coordination. Research points out that High-centrality nodes play a crucial bridging role in the network,

connecting different communities and groups, thereby enhancing the overall collaboration efficiency of the network (Freeman et al., 2018).

Network relationship strength (comprehensive mean 3.58, ranking 3), network relationship strength is highly rated among respondents, indicating that respondents generally believe that companies perform well in network relationship strength. A Strong Agree rating indicates a high level of recognition that the company promotes trust, collaboration, and resource sharing. Research shows that good network relationship strength can significantly enhance trust and collaboration between partners, increasing the overall stability and efficiency of the network (Smith et al., 2021).

This table shows how companies perform in key areas of their network structure. The effectiveness of network relationships received the highest recognition, showing that companies are very successful in promoting value consensus, collaboration and communication. Network centrality and network relationship strength also received high ratings, indicating that companies have strong capabilities and influence in these two aspects. Overall, the company's network structure management performance in various key areas has been highly recognized by the respondents.

Table 3

Summary Table on Network Capability

Key Result Areas	Composite Mean	VI	Rank
Network Reliability	3.65	Strongly Agree	2
Security	3.59	Strongly Agree	3
Scalability	3.70	Strongly Agree	1
Grand Composite Mean	3.65	Strongly 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 shows the performance of enterprises in key areas of network capabilities. Scalability received the strongly agree, showing how successful businesses are at handling traffic fluctuations, resource management, and future planning. Network reliability and security also received high ratings, indicating that enterprises have strong capabilities in ensuring network stability and protecting data security.

Overall, the network capability management performance of enterprises in various key areas has been highly recognized by respondents. The highest score for scalability indicates that respondents have a Strongly Agree level of recognition of the company's performance in this area. Businesses excel at handling traffic fluctuations, adding new devices and users, dynamic resource allocation, modern technology adoption, and expansion planning. Research points out that Good scalability can support continuous growth and technological innovation, ensuring long-term network stability (Johnson et al., 2018).

Network Reliability has a Strongly Agree rating among respondents, indicating that respondents generally believe that enterprises perform well in network reliability. A Strong Agree rating indicates a high level of recognition for maintaining high uptime, resolving issues quickly, and ensuring data transfer reliability. Research shows that Network reliability is a key factor in ensuring business continuity and user satisfaction (Smith et al., 2021). Safety gets a strong agree thumbs up. Respondents believe organizations perform well on cybersecurity, effectively implementing access controls, monitoring threats, encrypting data and conducting security training. Research points out that Strong security measures can prevent unauthorized access and data breaches, protecting a company's sensitive information (Freeman et al., 2018).

Overall, the comprehensive evaluation of each key result area of network capabilities is very high. The overall composite mean of 3.65 reflects that the respondents' overall satisfaction with the enterprise in these aspects has reached a level of strongly agree, showing that the enterprise is relatively successful in managing network reliability, security and scalability.

Table 4

Relationship Between Internet Enterprise Management and Network Structure

Variables	rho	p-value	Interpretation
Business Strategy			
Network Relationship Strength	0.146**	0.003	Significant
Network Centrality	0.130**	0.009	Significant
Effectiveness of Network Relationships	0.154**	0.002	Significant
Stakeholders' Relationship			
Network Relationship Strength	0.299**	<.001	Highly Significant
Network Centrality	0.104*	0.038	Significant
Effectiveness of Network Relationships	0.184**	<.001	Highly Significant
Leadership and Control			
Network Relationship Strength	0.228**	<.001	Highly Significant
Network Centrality	0.139**	0.005	Significant
Effectiveness of Network Relationships	0.144**	0.004	Significant

***. Correlation is significant at the 0.01 level /**. *Correlation is significant at the 0.05 level*

As seen in the table, the computed rho-values ranging from 0.104 to 0.299 indicate a very weak to weak direct relationship among the sub variables of internet enterprise management and network structure. There was a statistically significant relationship between internet enterprise management and network structure because the obtained p-values were less than 0.01/0.05.

Table 5

Relationship Between Internet Enterprise Management and Network Capability

Variables	rho	p-value	Interpretation
Business Strategy			
Network Reliability	0.159**	0.001	Significant
Security	0.117*	0.019	Significant
Scalability	0.069	0.171	Not Significant
Stakeholders' Relationship			
Network Reliability	0.190**	<.001	Highly Significant
Security	0.092	0.065	Not Significant
Scalability	0.161**	0.001	Significant
Leadership and Control			
Network Reliability	0.149**	0.003	Significant
Security	0.081	0.108	Not Significant
Scalability	0.070	0.161	Not Significant

***. Correlation is significant at the 0.01 level /**. *Correlation is significant at the 0.05 level*

As seen in the table, the computed rho-values ranging from 0.069 to 0.190 indicate a very weak direct relationship among the internet enterprise management and network capability. There was a statistically significant relationship between business strategy and the sub variables of network management namely network reliability and security because the obtained p-values were less than 0.01/0.05. There was a statistically significant relationship between stakeholders' relationship and the sub variables of network management namely network reliability and scalability because the obtained p-values were less than 0.01. There was a significant relationship between leadership and control and network reliability because the obtained p-value was less than 0.01.

Table 6

Relationship Between Network Structure and Network Capability

Variables	rho	p-value	Interpretation
Network Relationship Strength			
Network Reliability	0.218**	<.001	Highly Significant
Security	0.121*	0.016	Significant
Scalability	0.124*	0.013	Significant

Network Centrality			
Network Reliability	0.105*	0.036	Significant
Security	0.079	0.116	Not Significant
Scalability	0.044	0.381	Not Significant
Effectiveness of Network Relationships			
Network Reliability	0.125*	0.012	Significant
Security	0.098	0.051	Not Significant
Scalability	0.121*	0.016	Significant

** Correlation is significant at the 0.01 level /* Correlation is significant at the 0.05 level

As seen in table 6, the computed rho-values ranging from 0.044 to 0.281 indicate a very weak to weak direct relationship among the sub variables of network structure and network capability. There was a statistically significant relationship between network relationship strength and the sub variables of network capability because the obtained p-values were less than 0.01/0.05. There was a statistically significant relationship between network centrality and network reliability because the obtained p-value was less than 0.05. There was a statistically significant relationship between effectiveness of network relationships and the sub variables of network capability namely network reliability and scalability because the obtained p-values were less than 0.05.

Proposed Internet Industry Technology Innovation Framework

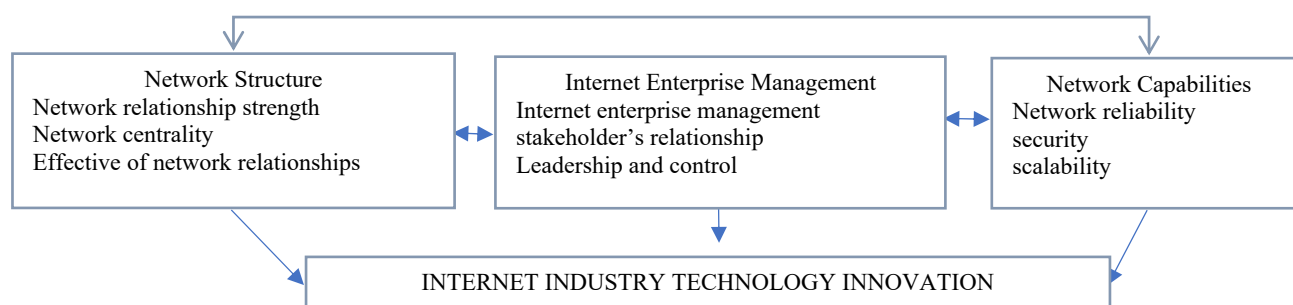


Fig. 1 Internet Industry Technology Innovation Framework

The Internet industry technological innovation framework originates from the mutual influence and mutual promotion relationship between Internet enterprise management, network structure and network capabilities. The technology innovation framework may increase internet company and industry innovation development. Internet enterprise management can help enterprises develop more innovative technologies more effectively. Network structure can help enterprises obtain more information and support, which is also the basis for enterprise innovative technologies. Network capabilities are the strength support for enterprise network creative technologies.

New technology innovation approaches can develop more better decision Making, efficiency and productivity, company and industry sustainability development. Innovative technologies can help Internet companies differentiate their products and services, making them more attractive to customers. In addition, and it also can be first to market with a new technology can build a strong market position and set industry standards. By gaining insight into the implementation of this innovative framework, Internet companies can develop and implement technological innovations, and utilize technology to launch excellent customer experiences.

The relationship between internet enterprise management, network structure, network capabilities is a dynamic and flexible. The specific ways in which an internet company's internet enterprise management, network structure and network capabilities interact with each other will vary depending on the unique background and goals of each service company. However, in today's technology driven environment, understanding the importance of their interconnections is crucial for developing effective innovation framework.

Internet enterprise management has effectively promoted the development of network structure. Internet enterprise management plays a crucial role in developing a robust network structure by strategically aligning resources, fostering collaboration, adopting advanced technologies. For example, In the Internet industry, Internet companies at the core of the network can ensure the quantity allocation of upstream and downstream cooperative supply and sales companies through effective enterprise management, monitoring and continuous improvement of the network structure, so that the performance ratio is more reasonable, thereby improving the entire network structure. Be resilient and adaptable to support core Internet company long-term goals.

The network structure sets the framework for the operation of Internet enterprise network functions. It affects the communication between enterprises in the network, the scalability of new enterprises joining, the collaboration between enterprises, the distribution of benefit resources. For example, the designed network structure can give full play to the potential synergy effects of all cooperative enterprises in the network, while an improperly designed network structure may cause serious conflicts of interest between enterprises and cooperation crises caused by conflicting goals.

Network capabilities form a fundamental element of internet enterprise management, and they play a vital role at multiple levels. Network capabilities affect the efficiency of information circulation between enterprises, the integration and management of resources, the optimization of enterprise operations, and the effective implementation of innovation strategies in network.

In the Internet industry, there is a close interdependence between enterprise management, network structure and network capabilities, which has a significant impact on the innovation architecture of the industry. Efficient enterprise management can optimize resource allocation and encourage team collaboration, thereby enhancing the flexibility of the network structure and its ability to adapt to changes. A reasonable network structure provides a framework that is conducive to efficient operations and collaborative work, thereby supporting the development of innovation. At the same time, strong network capabilities ensure the efficient flow of information and resources, which is crucial for executing innovative strategies. The interaction of these three has built a solid foundation for technological innovation in the Internet industry.

In the Internet industry, there is a close interdependence between internet enterprise management, network structure and network capabilities, which has a significant impact on the innovation framework of the industry. Efficient internet enterprise management can optimize resource allocation and encourage team collaboration, thereby enhancing the flexibility of the network structure and its ability to adapt to changes. A reasonable network structure provides a framework that is conducive to efficient operations and collaborative work, thereby supporting the development of innovation. At the same time, strong network capabilities ensure the efficient flow of information and resources, which is crucial for executing innovative strategies. The interaction of these three has built a solid foundation for technological innovation in the Internet industry.

4. Conclusions and recommendations

The respondents highly agreed that internet enterprise management practice business strategy, stakeholders' relationship, leadership and control. There is high agreement among respondents on the company's network structure such as network relationship strength, network centrality and effectiveness of network relationships. There is high agreement among respondents on the network capability of the company in terms of network reliability, security, and scalability. The study demonstrates a powerful and positive synergy between internet enterprise management, Network capabilities and Network structure. There is a significant relationship between internet enterprise management, Network capabilities and Network structure. A framework improving the technological innovation process of the Internet industry was developed.

Internet companies may engage with stakeholders through various online platforms to promote trust, dialogue and collaborative problem solving. Sharing resources and expertise among network partners can promote innovation and collective growth, thus improving the stability and sustainability of the network, and a

high degree of trust and commitment among network partners can build strong and lasting relationships. Top management of internet may foster a culture of continuous learning and innovation, encourage digital skills development, adapt to new technologies and trends. The technology Innovation Framework may for use in internet industry. Future researchers may conduct further studies using other domains like corporate innovation network, collaborative innovation, management relationships to validate the results of the current study.

5. Reference

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