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How strategic knowledge management and the Internet of Things (iot) affect the performance and innovation of Chinese manufacturing businesses

LIU HUIYAN[1], ABHIJIT GHOSH[2]

[1]PhD Research Scholar in Lincoln University College, Malaysia
[2] Dean in Lincoln University College, Malaysia

Abstract

In the context of the Internet of Things, new disruptive technologies are changing how organizations manage their knowledge (IoT). This necessitates reconsidering the traditional knowledge management system and putting in place a more transparent system to enable the free flow of ideas. The development of the organization's core internal knowledge management competencies will probably benefit from this tendency. Four interrelated concepts—knowledge management, open innovation, knowledge management aptitude, and creative brilliance—will be the focus of this environment's investigation. By applying the structural equation modeling method to the data collected from 685 Chinese businesses, this goal is achieved. The results show that implementing a knowledge management system strengthens an organization's internal knowledge-management capabilities, increasing its potential for innovation. Consequently, this opens up more opportunities for collaboration and provides access to previously untapped information sources. The study's findings are utilized to make significant inferences about academia and management, as well as to suggest potential directions for future research.

Key words: Internet of things**,** Strategic knowledge management, Manufacturing firm**,** Chinese innovation**,** Firm performance.

INTRODUCTION

A new paradigm in the current context of modern information and communication technologies (ICTs) is the Internet of Things (IoT) paradigm. A collection of innovative digital technologies known as the "Internet of Things" has an impact on both people and companies. Businesses are progressively integrating disruptive technologies into their operations to boost productivity by exchanging knowledge and gathering information. In order to preserve their competitive advantage in this global economy, businesses must establish suitable and pertinent knowledge management processes and capabilities. Information management and how to maximize its benefits at work have been the subject of an increasing amount of scholarly and applied research. Knowledge management is the process of recognizing and making use of a group's collective knowledge. in order to improve responsiveness to changes in the environment, creativity, and competitiveness. When it comes to their creation, application, and general success rates (IT), information technology-based knowledge management systems have gotten comparatively little research attention (Kim and Kim, 2016; Scuotto et al., 2016). Since many organizations are putting knowledge management systems in place to make it easier to create, share, and store knowledge,

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this represents a significant gap in scientific business knowledge. Using ICT tools, experimental technology platforms, e-service applications, and other information society infrastructures to create digital ecosystems can give businesses a competitive edge by facilitating the exchange and collection of data and information, especially in light of the movement's recent and growing momentum. This phenomenon is changing how innovation is initially carried out.

The outcomes of initiatives to enhance knowledge management have been patchy and ambiguous, despite notable advancements in a number of knowledge management domains. So why aren't there more research studies on the circumstances and means by which knowledge management initiatives can enhance output and productivity? As a result, the relationship between knowledge management and corporate performance is receiving more attention. It's also typical for knowledge management (KM) research to ignore the significance of combining internal and external knowledge into a comprehensive approach and to concentrate only on internal knowledge. In today's dynamic environment, internal knowledge management capacity, or KMC, is becoming more and more important to businesses as a way to manage knowledge flows both to and from the outside world and within the organization. As the name implies, KMC is all about The capacity of an organization to search for and hold onto information both inside the organization where it works and outside of it. Because of this, businesses frequently build alliances with other ecosystem participants, which promotes a lively exchange of knowledge. Firms can and should use KMS that leverage state-of-the-art ICTs and external knowledge sources as a direct result of the IoT phenomenon. This will lead to improved innovative performance, which is defined as the capacity to introduce new products/services and processes or open up new markets (Santoro, 2017).

REVIEW OF LITERATURE

The scholarly discourse surrounding the efficient handling of innovation in an era where the Internet of Things will be the prevailing technology is still in its early stages. Talks about the Internet of Things (IoT) are currently occurring in three major categories. The governmental, corporate, and academic communities are some examples of these communities. Governments worldwide have initiated various initiatives, including those concerning the standardization of procedures. The Industrial Internet Consortium (IIC) is the name of this initiative in the United States. Many academic departments have conducted research on the Internet of Things (IoT) against the backdrop of the digital age, yielding a wide range of perspectives and findings. There is a significant difference in the degrees of success demonstrated by the various sectors when it comes to the idea and application of the Internet of Things. technology. Just as an illustration, the consumer goods industry outperforms the financial services industry by a wide margin. Furthermore, the degree of disagreement that currently exists is difficult to accurately depict due to the ambiguity surrounding the definitions, layers, strategies, and implications of the internet of things. They will start by conducting a literature review that draws from a range of academic

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disciplines and covers topics like digitalization, the Internet of Things (IoT), and industrial IoT in order to set the stage for the current conversation. To show that they have taken these steps, they present the findings of studies that were produced by the government and the corporate sector. considering their perspectives. This paper demonstrates how, in the last ten years, the corpus of literature has grown in terms of both the diversity of topics it covers and the classification schemes used to group those topics. The study incorporates ideas from the fields of systems thinking and philosophy of science to organize and standardize the review procedure as well as the results. To sum up, the outcomes of the discussion and assessment will now be categorized into four groups: digitalization, the internet of things (IoT), the industrial internet of things (IIoT), and electronic collaboration. The term "Internet of Things" describes a system of interconnected physical devices that can share information and communicate with one another over a range of network connections, such as coaxial, optical, and wireless. A wide range of possible outcomes are made possible by the application of real-time analytic hubs and information and communications technology (ICT) to currently in use digital technologies. Integrating and evaluating the information from multiple sensors

In order to reach more accurate conclusions than could be reached by using a single sensor, data fusion techniques combine the results from several different sensors into a single set of findings. Broadly speaking, the various methods of sensor fusion can be divided into three categories, which are as follows:

(1) Raw data level fusion: This technique creates a new signal with a better signal-to-noise ratio by combining data from sensors with similar characteristics.

(2) The process of combining data from several sensors that measure the same object to measure a single variable is known as multi-sensor fusion.

(3) Fusion at the sensor level, which is the process of combining related sensor-derived features for decision-making; feature level fusion is the process of extracting unique features from several sensor signals in the time and frequency domains; and sensor level fusion is the process of combining related sensor-derived features for decision-making.

AN INVESTIATION AT THE ORGANIZATION LEVEL

Organizational innovation (OI) is linked to the potential, actions, and results of entrepreneurial endeavors. The effects of OI on business ventures have significant implications for both recently launched and well-established corporations that are already in operation. OI, in particular, can provide business owners with a more comprehensive view of the possible opportunity landscape by enabling them to see prospects that are situated far from their current knowledge base. is crucial to take part in early-stage innovation processes that involve more than just information sharing between organizations. Organizations that want to innovate successfully frequently need to create or actively participate in innovation ecosystems, which bring together a wide range of creative

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people at different stages of the process. They are able to come up with creative and practical answers to innovation-related issues even in the lack of a central organization. Organizational innovation is thought to produce a wide range of outcomes, including the development and marketing of a product. It also requires a diverse range of interactions and information flows (Chesbrough and Bogers 2014).

Prior to the establishment of a predetermined architecture for value creation within the ecosystem. The kind and level of complexity of the technology being developed will determine how valuable an innovation ecosystem is. Using the perspective of a network theorist, OI describes how innovative dynamic network structures develop through the dynamic interactions of several people over the course of the innovation lifecycle. Consequently, the issue of governance in these dynamic relationships is crucial to OI's success. Indeed, a central concern is the degree to which this kind of leadership ought to be "transparent." Because there are no hierarchical control structures, new "dynamic" theories must be developed in order to describe how "open" governance affects how many stakeholders co-evolve over time. the inventive process. Important aspects of "openness" in governance, including ownership of intellectual property, technology access, and social variables like transparent information policy, have been revealed by research on platform-based ecosystems (Benlian, Hilkert, and Hess 2015).higher level analysis conducted outside of the organization An important factor in determining the success of open innovation (OI) is the degree to which external stakeholders, be they individuals or communities, are involved in the innovation process as either recipients of information used to produce innovations or contributors to the development of new knowledge and innovations. Numerous different types of literature have been produced to discuss the role that these "external stakeholders."

The scope of knowledge generation and According to West (2014), innovation involves working with a larger network or ecosystem, collaborating with extra-organizational groups (like communities, consortia, and crowdsourcing), and individual contributors like user innovation. Even though all of these could be regarded as instances of OI involving third parties, it is important to remember that a variety of stakeholders may each contribute unique elements that, as a result of their distinctions, may reduce the efficacy of OI. There is a wide range of input that could be influential; some examples include objectives, aspirations, ideas, and solutions to problems, in addition to externally provided designs and patents. It seems beneficial to talk about the significance of outside stakeholders' contributions in addition to Working with a larger network or ecosystem, collaborating with extra-organizational groups (like communities, consortia, and crowdsourcing), and individual contributors (like user innovation) are all examples of innovation (West, 2014). Notwithstanding the fact that each of these scenarios could be regarded as an instance of open innovation involving a third party, it is crucial to remember that numerous stakeholders may each contribute unique elements that, due to their variances, may reduce the efficacy of open innovation. Many different types of input can have an impact,

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including objectives, aspirations, ideas, and solutions to problems, as well as externally provided designs and patents. Talking about the significance of external stakeholders' contributions as well as the stages of the process of innovation that they participate in. There may be significant variations in participation rates because individuals and community members may have very different ideas about what inspires them to participate in OI processes. The factors that determine the extent to which external stakeholders participate in the innovation process are the nature of the process used to generate new information, the consequences of that process, and the degree of absorption. When the situation demands that experts play a key role in identifying issues and/or contributing their knowledge to solutions, as well as when the necessary information aligns with the preferences and user and customer expectations. When an organization's development is perceived as being closely tied to its cultural, historical, and traditional context, or when the knowledge in question is considered to be implicit, the participation of external stakeholders in the innovation process is reduced. The way that the diversity of internal and external contributors, in addition to cognitive distance, affect the dynamics of knowledge generation and the output of innovation, is another crucial element that needs further investigation.

CONCLUSION

Research has demonstrated that knowledge management, or KM, is a successful tactic that may increase productivity and creativity. Additionally, the combination of customization and codification may result in better financial outcomes. The positive impact that knowledge management (KM) and KM strategy have on corporate performance and creativity is becoming increasingly apparent. Businesses now understand that having a clearly defined knowledge management strategy can increase output, productivity, innovation, and talent. These benefits enhance the link's ability to foster innovative performance patterns.

Researchers have devoted a great deal of time and energy to investigating and testing a range of organizational strategies aimed at fostering creative thinking.
These kinds of academic papers emphasize the theoretical as well as the practical importance of these strategies for businesses. For a business to benefit from the invention, dissemination, and application of knowledge as well as to provide the service that could enable the organization to realize its full potential for competitive advantage, knowledge creation is crucial. The approach to knowledge management is seen as a flexible capacity focused on the ongoing improvement of a knowledge opportunity. This is achieved by utilizing the innovations created to develop, manipulate, encode, and employ the implicit and explicit information that is present within the organization. Should the user's personal information, privacy, or even physical safety be jeopardized, subsequently a smart device's or smart home's security is in jeopardy. This is particularly true for a smart home that uses the Internet of Things (IoT), as they are highly susceptible to different security risks that can arise from both inside and outside the house.

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Strategic information can help close the gap between strategic management practises and entrepreneurial initiative. Effective management and strategic planning are two useful tactics for business owners who operate their own enterprises. A successful entrepreneur's toolkit must include both strategic management and intelligence, as many business objectives cannot be achieved without them. Furthermore, it is impossible to fully understand the results of the associated study without first taking into account the role that strategic management plays in inspiring entrepreneurial endeavors. The age group The ultimate objective of Chinese business strategy, management, and manufacturing firms is valuable to the company.

The management of knowledge is divided into four distinct but related phases. These processes involve the creation of knowledge, information storage and retrieval, knowledge transfer, and knowledge application. It is quite possible for an organization and its employees to be involved in multiple knowledge management process chains simultaneously. Because of this, knowledge management inside a company is not something that stays the same over time; rather, it is something that is always changing to account for new circumstances.

Businesses that embrace innovation and keep an open mind are open to trying new things have a higher chance of developing this skill. Consequently, there has been an increase in the volume of internal KMC that promotes open innovation practices. This is because it is generally agreed upon that one of the most crucial elements in the process of fostering innovation is greater transparency and collaboration among individuals. Therefore, it is highly advised that you keep an open mind as this may increase your chances of improving your skills. More specifically, an open approach promotes information generation, integration, and connectivity—all of which help an open innovation process function more effectively. This emphasizes the the significance of broadening a business's horizons and suggests the opportunities it could present for breaking into uncharted territory and gaining exclusive knowledge. This also shows how important it is for a business to broaden its scope. The organization may benefit from working with a diverse range of partners (partners' diversity) in terms of accessing new areas of expertise and generating new ideas, as this may lead to a constant supply of fresh ideas. However, given that the modern economy is built on information, the extensive use of modern information and communications technologies (ICTs) should at the very least test the openness of the businesses. The most senior level of an organization needs to be the one that innovates must first assess the worth of open and digital ecosystems.
It is anticipated that increasing the size of KMS would facilitate greater access to the system for more people, which would boost the investigation and exploitation of uncharted territory. Actually, in today's fast-paced world, the capacity to share, integrate, and create new knowledge is what drives the innovation processes that take place both within and between organizations. Establishing a knowledge management system (KMS) is the first step in constructing virtual

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communities with outside partners to facilitate information exchange and foster departmental collaboration. Even though technological advancement is crucial, it is insufficient on its own

to inspire artistic endeavors. To maximize the likelihood that they will collaborate, businesses should be cautious when choosing their partners for joint projects and adjust the intensity of their interactions accordingly.

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