DEVELOPING A CONCEPTUAL FRAMEWORK FOR CRISIS MANAGEMENT IN THE OMANI TELECOMMUNICATION SECTOR

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Abstract: This paper aims to develop a conceptual framework for crisis management capability in the Omani telecommunication sector to overcome the negative impacts of crises such as the worldwide COVID-19 pandemic that occurred between 2019 to 2022. A literature review is conducted to reveal the elements and factors that are involved in assessing the crisis management capability in the Omani telecommunication sector and different existing relationships between the variables are discovered. The proposed framework that will be used to assess the crisis management capability of the Omani telecommunication sector comprises strategic planning, knowledge management, and information and communications technology (ICT). According to the framework, strategic planning and knowledge management and ICT have direct impact with crisis management capabilities. At the same time, elements and role of human resource management are presented to indicate the possibility of its functions to be incorporated in the framework in the future study. The paper provides the Omani sector with a well-organised framework to face the challenges imposed by different crises such as the recent tragedy of the COVID-19 pandemic.

Keyword: Crisis management, COVID-19 pandemic, strategic planning, knowledge management, human resource management, information and communications technology.

1. Introduction

Globally, the telecommunication industry is a critical indicator of economic development and this industry has witnessed tremendous improvements in recent years. In this regard, most countries worldwide seek to strengthen their telecommunication sectors because of the increasing competition (Diskaya et al., 2011). Oman's telecommunication sector greatly contributes to Omani society, businesses, and overall economic growth. The telecommunication sector has achieved its strategic plans by improving access to services, providing many choices to consumers, adopting developed technology for performance improvement, creating new job opportunities, and improving the quality of life of citizens and residents. At the same time, the telecommunication sector has experienced various crises during its history, in particular the global financial crisis which took place from 2007 to 2010 when the sector's performance has been affected especially in the G8 countries consisting of Canada, Russia, United Kingdom, USA, Italy, Japan, France, and Germany (Diskaya et al., 2011).

Recently, the telecommunication sector is not far from short and medium-term disruptions due to the COVID-19 pandemic, and consequently, macroeconomic impacts and demand shortfalls affect this sector (International Finance Corporation [IFC], 2020). In 2020, the revenues of the telecommunication sector shrank by 2% across the biggest economies in Europe (Greling & Langlet, 2021). The outbreak of the COVID-19 pandemic crisis worldwide and the resulting unprecedented measures taken by governments had a massive impact on society as a whole, where organisations were forced to rapidly adopt new ways of working remotely, use new means of communication systems, and modify practices, and work patterns to meet social distancing requirements (Groenendaal & Helsloot, 2021). The telecommunication sector has been encountering many deficiencies, especially at the strategic planning level such as the inability to compete globally, and weak infrastructure.

However, studies that are devoted to investigating the current state of strategic planning in the telecommunication sector in the Sultanate of Oman are not abundant (Stalinska et al., 2018), and limited research is dedicated to discussing the feasibility of strategic planning in the telecommunications industry (Alharbi & Dowling, 2015). Al Kurdi (2021) stated that issues related to emergency and crisis management (CM), and proper planning for dealing with them are not sufficiently investigated in the Sultanate of Oman. Therefore, there is a real need for more research to determine the role of strategic plans and operational decisions in helping managers in the telecommunication sector to gain a competitive advantage (Alharbi et al., 2019). According to Wood (2020), a strategic approach is required to solve the long-term crises in the Omani telecommunication sector. In a related context, to improve the telecommunication sector performance in Oman, it is pertinent to improve the strategies and plans that are adopted in this sector, especially during the COVID-19 outbreak (Muthuraman et al., 2021).

Moreover, crisis preparedness should be essential to organisational strategy as proposed by CM logic (Ouedraogo, 2007). Almufarji and Husin (2022) reiterate that the effectiveness of management is also significantly influenced by people, organisations, infrastructure, logistics, capability, and preparedness elements. All telecommunication companies must elevate and implement action plans regularly because CM requires continuous administrative processes concerning predicting potential crises that may occur through sensing and monitoring changes in the internal and external environment. They work to mobilise available resources and capabilities to prevent the occurrence of the crisis or prepare to deal with crises with the most significant possible efficiencies, and effectiveness. In this way, possible damage to organisations, businesses, the environment, and workers can be hindered, and the need to return to normal conditions as soon as possible with negligible losses can be achieved. In the context of the Omani telecommunication sector, the literature that focuses on CM capability is scarce, hence this paper focuses on the development of a conceptual framework to explain CM capability in the telecommunication sector in Oman.

2. Crisis Management

A crisis is defined as a sudden emergency event, which may make the organisation endure a serious loss or face the threat of serious losses (Zhao, 2012). Others define it as an organisation that experiences a low-probability, high-impact event that threatens the viability of the organisation and is characterised by ambiguity of cause, effect, and means of resolution, followed by a belief that decisions must be made swiftly (Pearson & Clair, 1998). Preble (1997) defined CM *as* the process that strives to identify and anticipate areas of crises, the development of actions or measures designed to hinder crises from occurring, or from an incident emerging into a crisis, and reducing the effects of disruption from a crisis that could not be countered. It is a means of proactively preparing the business for a worst-case scenario, including careful planning of approaches that will minimise the impacts on its performance in the short and long term.

The theory of CM first appeared in the 1960s among Western universities, government, non-governmental organisations (NGOs), and other types of organisations, and they attached great importance to it after its emergence and established specialised research institutes. Since the mid-1990s, the acceleration of globalisation process has diversified the forms of crises. In general, various studies emerge focusing on the scope such as in the perspective of the military field and natural disaster, economic, political, social, and other fields. The trend of the research also takes place such as from qualitative to quantitative research, research methods ranging from single-topic research to interdisciplinary research. Using effective strategies for CM allows organisations to reduce the expected losses, improve organisational adaptability, reduce the possibility of such crises in the future, help to face crises more efficiently, and strengthen the competitive positions of the organisations in the market (Balanovska et al., 2019, Grebe, 2013, David & Carignan, 2017). Organisational managers can use a strategic approach to managing their organisations during crises (Al-Khrabsheh, 2018). Managers who adopt the strategic planning approach are usually less escapable and more able to avoid crises using confrontation, cooperation, or containment (Ghazi, 2017).

3. Strategic Planning and Knowledge Management

Strategic planning is a philosophy that both public and private sectors use to help sustain and survive in the current competitive markets. It is a comprehensive tool that sets priorities to ensure that employees are working towards the achievement of the organisational goals and assesses the capacity of the organisation to adjust its directions in response to changing circumstances. It helps the organisational management in the allocation of resources to overcome challenges that might affect its performance (Kabeyi, 2019). Among these challenges are crises that might arise due to internal or external circumstances. Policy-makers in the Sultanate of Oman have realised the role of strategic planning in providing a practical approach for integrating technology into the planning process to obtain more informed decisions and achieve better resilient development (Al Ruheili, 2017). According to Muthuraman et al. (2021), there is a real need to improve decision-making and planning processes in the telecommunication sector in Oman to improve its financial performance. The implementation of strategic planning in Oman

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varies across different enterprises and it is influenced by many factors, such as the nature of the sector, the internal and external environment, and strategies, techniques, and priorities of the sector (Al-Ghrairee, 2021).

Knowledge management *is* a process that assists organisations to find, select, organise, circulate, and transmit important information and expertise necessary for activities (Cania & Korsita, 2015). In addition, knowledge management can be defined as a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that aim to enhance organisational performance (O'Dell et al., 1998). Plato defined the first concept of knowledge as *justified true belief* while Aristotle debated this concept through continental rationalism (Kakabadse et al., 2003). The terms "knowledge" and "information" are often used interchangeably in literature and practice, however, the distinction is helpful as the chain of the flow of knowledge involves the flow of information, achievement, action/reflection, and wisdom (Kakabadse et al., 2003). In general, two types of knowledge structures predominate in the domain of CM: (1) Metamodels presenting concepts, (2) Vocabulary necessary for coherent modeling of a set of situations for a given point of view (Benaben et al., 2020).

4. The Role of Human Resource Management

Human Resources is a company division responsible for finding, selecting, hiring, and training employment candidates and administering employee benefits programmes. It plays a significant role in helping companies adapt to the rapidly changing business environment and the increasing demand for exceptional employees. Drafted by John R. Commons,the American institutional economist, coined the term "*Human Resource*" in his book "*The Distribution of Wealth*," published in 1893. However, it was not until the 20th century that human resource departments were developed and were responsible for dealing with misunderstandings between employees and employers (Kenton, 2020). Since the 1980s, there has been a push for strategic initiatives within human resource departments. This move was based on research concerning the impact of employee-related issues on the company's long-term business success.

These strategies are commonly mentioned as HRM strategies. According to Kenton (2020), HRM is an all-inclusive approach to managing employees and an organisation's culture and environment. It focuses on the recruitment, management, and general direction of the people who work in an organisation. Since a crisis that takes place in an organisation affects its personnel management, it is imperative to investigate the personnel management work during the crisis to clarify the significance of the human resource department in the company. Human resource management is an essential partner in CM planning because it understands employee needs and their role in the survival of the organisation. The role of HRM is to ensure that employees are well aware of potential crises that may affect the organisation and that they are aware of their role in managing the crisis. Its function in CM is broad and varied and typically includes crisis communication, policy management, employee skills, and training of employees (Gibbons, 2020).

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Human Resource (HR) managers have a strategic role and responsibility to ensure that their organisations are aware of the internal weaknesses in dealing with different crises to ensure that their CM plan covers all potential risks and concerns. Crisis management is one of the areas that human resource management (HRM) is supposed to be involved to ensure that staffing needs are taken care of during and after a crisis while developing CM plans. Moreover, HRM plays an influential role in CM through planning and training to safeguard employees in navigating turbulent times. The role of HR in CM is to improve employee preparedness and thus ensure effective disaster planning. By including the human side of CM, organisations are better placed to deal with crises when they arise (Athamneh, 2018). In today's information and knowledge economy, organisations increasingly rely on humancapital (knowledge workers) to create competitive advantages and generate profits rather than equipment, technology, and systems. Therefore, regardless of their size, strength, and success, organisations are vulnerable to various challenges and problems concerning employees and other matters.

5. The Function of Information and Communications Technology (ICT)

The role of CM is essential in the organization, especially during periods of crisis, and CM makes it possible to cope with the crisis and serves as a source of competitive advantage (Cania & Korsita, 2015). For example, combating the COVID-19 crisis requires knowing, finding a lasting solution, mitigating impacts, reducing misinformation, returning to normal, and predicting similar crises in the future (Nyoni & Kaushal, 2022). Fundamental change in today's business environment has made Information and Communication Technology (ICT) a vital component that helps companies stay on track to achievetheir ultimate vision (Kruger & Snyman, 2002). Information and communication technology covers a wide range of communication devices, and applications, and facilitates the flow of information. In the context of CM, these facilities can be used explicitly for risk or crisis detection, management of information, awareness of the situation, communication, search and saving efforts, and decision support systems (Bennett, 2019). Some of the main issues associated with CM are related to ICT, hence the information must be available promptly when making a decision, and its value is determined by the specificity of time, knowledge, and working conditions. Qualitative and accurate information can mitigate the impact of a crisis and guide and facilitate change management decision-making for CM (Simeunović et al., 2019).

Information Technology (IT) adoption is a critical area to be investigated in the organisational environment (Ghobakloo, et al., 2012) while Information and Communication Technology (ICT) refers to storing, retrieving, processing, transmitting, or receiving information electronically or digitally. This term includes communication devices, hardware, or applications, including computers, software, network infrastructure, video conferencing, telephone,and cell phones (Department of Local Government, Sport and Cultural Industries [DLGSC], 2021). Information and Communication Technology (ICT) application in organisations depends on the commitment to employ the best solutions to enhance organisational capabilities. For the successful implementation of ICT, there must be an alignment between the organisation's strategic planning and the ICT strategy to ensure the stability and sustainability of the organisation (Khawan, 2019). Hernández et al. (2019) argue that there must be an alignment between ICT adoption and strategic planning

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in organisations. In other words, the effective use of ICT capacities cannot be completed without using strategic planning activities to guide practice (Kelly & Dare, 2019).

ICT has managed to affect all aspects of human life and it plays significant roles in different market environments, business sectors, and workplaces. In addition, ICT is critical for processing and exchanging information (Ratheeswari, 2018) and It is a mechanism through which knowledge collection is enhanced. Globally, ICT adoption is affected by many internal and external factors (Chairoel et al., 2015). Oman is concerned with enhancing its ICT infrastructure in the telecommunication sector (Al-Busaidi, 2020). The Ministry of Transport, Communications, and Information Technology in the Sultanate of Oman has a sector specialised in designing strategic planning, providing project-related initiatives, and managing the IT master plan. Thus, the Omani ministry has realised thesignificance of the strategic planning department on ICT adoption behaviors.

6. A Conceptual Framework of Crisis Management Capability

Many strategies can be used to enhance the process of CM including strategic planning (John-Eke & Eke, 2020) which has been utilised during the coronavirus (COVID-19) pandemic. Crises situations need to be planned, organised, managed, and monitored constantly, hence knowledge management plays a vital role in successfully coping with crises (Cania & Korsita, 2015). Crisis management is supported by the CM model proposed by Herrero and Pratt (1996) which outlines three stages comprising diagnosis of crisis, planning, and adjusting to changes. Strategic planning is supported by the alignment model that focuses on ensuring the alignment between a company's vision and its resources (Avison et al., 2004, Young, 2003). Knowledge management is based on knowledge management organisational theory, which focuses on organisational structures and how an organisation is culturally and hierarchically designed to manage knowledge and knowledge processes (Ransom, 2021). ICT is based on the diffusion of innovation theory (Rogers et al., 2014) which supports sharing information during crises. The Ability-Motivation-Opportunity (AMO) theory (Bos-Nehles et al., 2013) which supports HRM can be described as the three-independent work-system elements that form employee characteristics and eventually lead to organisational success. Through these three components, organisational interests are best served since AMO theory paves the way for line managers to use effective approaches that result in employee motivation using HR policies and practices.

Rahman et al. (2020) investigate the efficiency of HRM performance with the application of ICT in its functions in maintaining social distance during the COVID-19 pandemic in the banking industry, and they found a significant positive correlation between the ICT tools utilised and the efficiency of HRM performance during the pandemic. Ali et al. (2017) concluded that ICT usage is positively significant to performance measurement in terms of HRM's efficiency or effect in Pakistan's telecommunication industries. Ali and Al Shanfari (2019) found that ICT positively affects organisations and their HRM practices. It starts with paperless offices, time management, databases, work practices automation, remote transaction processing, reporting and application tracking, and the use of the Internet to recruit and develop employees.

Many researchers have tried to shed light on the relationship between CM and other factors or elements surrounding management areas such as strategic planning, knowledge management, ICT, and HRM. John-Eke and Eke (2020) found that strategic planning enhances CM and the destruction resulting from the crisis depends on the CM style. In addition, organisations that rely on strategic planning will be proactive in managing crises. Almudallal et al. (2016) stated that organisational leaders should think strategically to prevent crises and inspire people using strategic directions. Elbasir and Shenshen (2020) indicated a significant effect of strategic planning on crisis management in Jordanian food industries, while Mudalal (2021) found a significant positive relationship between the CM concept and the SP dimensions, except for SP comprehensiveness.

Different studies show that knowledge management has a role in CM, which contributes to designing policies that lead to better CM, achieving goals, and becoming competitive. Furthermore, considering the learning and experience, learning initiatives and sharing facilitate knowledge acquisition and institutionalisation (Hazaa et al., 2021). Cania et al. (2015) found that knowledge management in the organisation enables the identification of critical information about a crisis and managing a crisis to achieve the organisation's goals to become competitive. Susnea (2013) indicated that each person must be encouraged and trained to make creative decisions as a tool of knowledge management. Most organisations react to the economic crisis by focusing on operational efficiency and using intellectual capital and innovation. The anticipation is that intellectual capital gives a company a distinct competitive advantage through knowledge management, knowledge ramifications, and enhanced innovation capacity (Tsakalerou & Lee, 2015).

Information plays a crucial role in humanitarian assistance and CM. The use of ICT can improve the efficacy of the work of the international community in several areas, such as decision-making, institutional memory, knowledge management, coordination, and awareness of the situations (Rinkineva, 2004). Furthermore, the coordinated use of ICT in CM can improve the safety and security of all CM personnel in crisis-related areas. Taking into account the significance of ICT in different organisations from the viewpoint that they ease the process of achieving the organisation's strategic objectives, it has become of utmost importance to develop a well-established strategic plan for ICT adoption. The importance of the ICT strategic plan stems from the fact that it helps different organisations to achieve competitive advantage by determining the information systems required for realising the organisational objectives and sustaining business strategies (Falsarella & Jannuzzi, 2017).

Knowledge management is the process by which a company collects, organises, shares, and analyses its' knowledge in a way accessible to employees. This knowledge includes technical resources, frequently asked questions, training materials, and interpersonal skills. The main objective of knowledge management is to improve organisational efficiency and protect knowledge in an accessible form (Amsler, 2021). For instance, managing the COVID-19 crisis requires knowledge to find a lasting solution, mitigate the impacts, limit misinformation, revert to normalcy, and plan for similar crises in the future (Nyoni & Kaushal, 2022). Sharing helpful information between organisations improves situational awareness and creates opportunities for early warning of threats and

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conflict prevention. Digitisation and the trend toward more short-term, project-oriented social engagementhas directly impacted traditional CM (Max, 2021). The availability of ICT (e.g., the World Wide Web) has paved the way for the knowledge management movement in whichthe knowledge base can be accessed quickly and adds more excellent value to the user (Subashini et al., 2011). Knowledge management aims to put the correct information in front of someone at the right time (Amsler, 2021).

In the context of CM, most organisations tend to focus on protecting their processes, systems, infrastructure, and public relations and exclude the human aspect of CM, which can be disastrous for the organisation. Therefore, the organisation should focus on developing a human resource crisis plan (Athamneh, 2018). The human resource function plays a significant role in change management projects, particularly turbulent change, and CM. They manage the employee lifecycle and deliver critical messages as part of the communication plan. They also have some element of cost control in the plan in that they are likely to be the people responsible for implementing alternative scenarios for compensation plan changes. Mirzapour et al. (2019) found a positive and significant impact on the strategic management of human resources with a value of 0.21, organisational culture with a value of 0.43, and intellectual capital with a value of 0.55 on crisis management. People share knowledge, not just through technology, HRM can play a significant role in KM (Nstec.com, 2022). According to Al-Khrabsheh et al. (2022), there is a strategic impact of HRM on crisis handling performance, considering human capital and prevailingorganizational culture. The HRM yields skills and knowledge to the employees to ensure their contribution to the organisation's sustainability by participating in the CM process (Athamneh, 2018).

Based on the above discussions, the following hypotheses are developed;

Hypothesis 1: Strategic planning directly affects crisis management capability in the Omani telecommunication sector.
Hypothesis 2: Knowledge management directly affects crisis management in the Omani telecommunication sector.
Hypothesis 3: ICT has a direct effect on crisis management capability in the Omani telecommunication sector.
Hypothesis 4: Strategic planning has a direct effect on ICT adoption in the Omani telecommunication sector.
Hypothesis 5: Knowledge management has a direct effect on ICT adoption in the Omani telecommunication sector.

Figure 1 demonstrates the conceptual framework of the present research that aims to investigate the relationship between strategic planning, knowledge management, ICT adoption, and CM capability. The role of strategic planning and knowledge management in affecting the different processes within this sector comprises the independent variables (IV), which concern the strategic planning (mission, vision, and values) and knowledge management, and the dependent variable (DV) which is represented by CM capabilities (control, threat size, and response options).
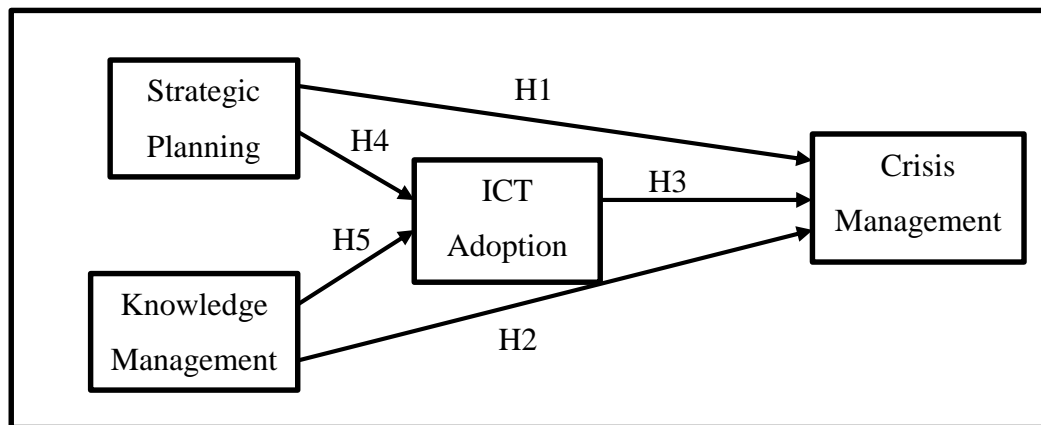
Figure 1. Conceptual Framework of Crisis Managment Capability in the Omani Telecommunication Sector

7. Conclusion

COVID-19 pandemic that occurred between 2019 to 2022 unravel a situation of a great crisis worldwide including Oman and the Omani telecommunication sector among other industries has been affected negatively. This paper proposes a conceptual framework for CM capability in the Omani telecommunication sector which foresee that strategic management, knowledge management, and ICT can play their important roles to realise the capability of CM. The independent variables comprise SP which involves specific dimensions such as mission, vision, and values (safety, community, workforce development, transparency, inclusivity, and innovation), knowledge management which involves four dimensions: Personal, team, organisational and inter-organisational knowledge management, and ICT which includes organisational, business, and technological dimensions. The dependent variable is CM capability, which includes varying dimensions such as control, threat size, and response options. This proposed framework will be used to statistically to evaluate the CM capability in the Omani telecommunication sector.

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