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Modern Business Model Based on Cloud Computing

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Abstract

Objectives: The rapid expansion of new information technologies in business, particularly those integrated with cloud computing, has transformed traditional information and communication technology methods, reshaping existing business models and creating a global market for cloud-based products and services. This study aims to develop an innovative business model based on cloud technology.

Methodology/Design/Approach: The research employs a mixed qualitative-quantitative approach. In the qualitative phase, the study systematically identified, evaluated and analyzed domestic and international research on cloud computing-based business in the financial sector using the seven-stage model of Sandelowski and Barso (2007). The analysis covered studies from 2010 to 2023 with 40 articles selected based on the CASP scale. The identified factors and criteria were then reviewed and validated by 12 experts. In the quantitative phase, the Shannon entropy method was applied to rank the factors influencing cloud computing-based businesses, as identified in the reviewed literature.

Findings: The meta-synthesis results indicate that the conceptual model of cloud computing-based businesses comprises five main factors: (1) dynamic capabilities, (2) sensing, (3) interviewees, (4) conversion, and (5) confiscation, along with 30 associated criteria. The identified factors were further ranked using the Shannon entropy technique, and a qualitative model was proposed.

Innovation: This study contributes to the understanding of the evolution of dynamic capabilities, cloud sourcing, and cloud-based business model innovation. The proposed model offers valuable insights for businesses seeking to leverage cloud computing to enhance competitiveness and adaptability in the financial sector.

Keywords: New Business Model, Cloud Computing, Stage-Based Model, Dynamic Capabilities Theory.

1. Introduction

In today's rapidly evolving competitive landscape, business success—regardless of industry, size, or scale—relies on strategic initiatives, persistent efforts, and sacrifices. However, without innovation, new ideas, and the adoption of emerging technologies, sustaining success and ensuring long-term survival remains a challenge. One of the fundamental drivers of business opportunity creation is leveraging innovative capabilities to develop and implement technologies such as cloud computing. This technology facilitates a new approach to IT system sourcing and drives transformational processes through an organization's dynamic capabilities (Bonken et al., 2019).

Cloud computing is a revolutionary method that operates on computer networks, including the Internet. It fosters innovation while simultaneously strengthening a company's competitive advantage. As highlighted by Schneider and Sunyaev (2016), cloud computing provides an alternative model for supplying, consuming, and delivering computing services—encompassing infrastructure, software, and platforms—through network-based systems. Within this framework, cloud computing and cloud sourcing streamline IT outsourcing and, more importantly, enhance strategic elements and innovation capabilities to reinforce businesses' competitive positions (Muhic & Johansson, 2014).

Research indicates that cloud computing, as one of the most widely adopted technologies in the modern era, has drawn significant attention from scholars and industry professionals, with adoption rates increasing rapidly (Sabetrasekh et al., 2023). Organizations are investigating how to utilize cloud computing to minimize fixed IT costs and capitalize on its flexibility. According to market research, cloud computing is a disruptive technological trend that is reshaping traditional procurement methods and revolutionizing IT service delivery (Forrester, 2012; Gartner, 2012). Industry perspectives suggest that cloud computing has the potential to fundamentally alter competitive dynamics by offering a novel platform for innovation and value creation in business and manufacturing (Lu et al., 2011). Moreover, cloud computing supports business innovation by enabling companies to conduct business activities in a low-risk, agile test environment (Gastermann, 2015). Consequently, the potential of cloud computing as a transformative and innovative business technology continues to receive increasing recognition (Krishnan, 2009; Holt et al., 2011).

As Giesen et al. (2010) noted, companies continually seek business model innovation to enhance flexibility and cost efficiency through strategic partnerships and outsourcing. Lindegaard et al. (2009) define business model innovation as a creative process that involves applying two or more business model components in novel ways to generate value. Steenkamp and Walt (2004), however, argue that business model innovation should not be limited to modifying a few elements but should encompass changes across all business model components. Chesbrough and Rosenbloom (2003) emphasize that technological innovation is crucial for economic value creation, asserting that business model innovation is instrumental in capturing, assimilating, and capitalizing on technological advancements (Gabriel, 2006).

Organizations that lack dynamic capabilities may struggle to harness the full potential of cloud computing, as well as other emerging technologies such as artificial intelligence and the Internet of Things. These limitations can hinder efforts to transform business models and improve competitive advantage. However, organizations that effectively recognize and exploit cloud computing opportunities may also need to reevaluate their structures, cultures, and business models to maintain their competitive edge (Bouncken et al., 2019).

Recent research on strategic competitive advantage extends beyond traditional innovation studies, focusing on business process differentiation through technological advancements and value creation via business model innovation (Chesbrough, 2006; Prahalad & Krishnan, 2008; Bloomberg et al., 2008; Johnson et al., 2008; Zoot et al., 2010; Na, 2012; Rader, 2012). Despite concerns about the challenges associated with cloud computing adoption in business environments (Al-Raqayan, 2017; Hu et al., 2017; Poti, 2013), many companies—including startups—actively seek ways to leverage cloud delivery models, ease of use, and standardized infrastructures to enhance business model productivity and competitiveness (Venteerz & Vidle, 2012).

Business innovation models examined in recent research predominantly center on technological advancements and reconfiguring key business model components (Foss & Saebi, 2017). However, outsourcing IT resources to the cloud—specifically the

transition from traditional IT outsourcing to cloud sourcing—poses challenges for businesses, particularly larger enterprises. This is due to the complexities of achieving cloud computing's core benefits, such as on-demand resource management and pay-per-use cost structures (Michelle et al., 2016).

Prior studies, which primarily focus on technical aspects (Schneider & Sunyaev, 2016) or cloud computing user demographics (Rotten, 2016), indicate that factors such as individual mindset, behavioral characteristics, and managerial support influence continued cloud sourcing adoption (Rotten, 2016). Findings also suggest that many companies with traditional IT frameworks lack the capabilities needed to create innovative business models and gain competitive advantages (Wilcox et al., 2013). While traditional companies typically engage in direct customer-vendor relationships (Vithayathil, 2018), cloud-sourcing firms operate within a complex ecosystem involving multiple stakeholders, including cloud brokers, providers, sub-providers, and IT consultants. Successfully managing these relationships requires specialized competencies (Willcocks et al., 2013).

Existing studies provide a limited understanding of how cloud computing adoption and sustained cloud sourcing contribute to business model innovation and competitive advantage (Soleymanian et al., 2022). Furthermore, despite extensive research on business models, the absence of a unified framework applicable across various organizations and economic conditions has hindered the development of a comprehensive definition (Samarghandi et al., 2023). Integrating technology-driven approaches into business models further complicates this issue (Pigneur et al., 2010). Consequently, the literature provides minimal insights into cloud computing's role in fostering innovative business models.

This study aims to explore cloud computing, the stages of business model innovation, and the theory of dynamic capabilities to understand their implications for knowledge-based business models. It also seeks to introduce an innovative business model based on cloud computing for the first time in Iran. Accordingly, this research envisions businesses as dynamic entities comprising semi-permanent managerial capabilities, aiming to bridge gaps in business model innovation by addressing organizational weaknesses in dynamic capabilities. Additionally, it examines the necessity and mechanisms of cloud computing adoption in business model innovation from a knowledge-based perspective. Using qualitative methods, the study identifies key components of an innovative cloud-based business model and proposes a conceptual framework to enhance organizational competitiveness.

2 - Literature Review

- **Cloud Computing Concepts and Its Evolution**

Over the past decade, cloud computing has emerged as a transformative technology for modern companies and businesses. Numerous researchers have attempted to define cloud computing, resulting in definitions that share common elements while also reflecting differing perspectives. It is argued that the concept of cloud computing originates from the term "Application Service Provision" (ASP), which first emerged in the 1980s. According to Williams (2012), cloud computing is neither a technology nor an architecture but rather a post-innovation and adoption of computing, networking, and storage technologies designed to reduce costs and time to market.

Grance and Mell (2011) define cloud computing as a model that enables ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources—such as networks, servers, storage, applications, and services—that can be rapidly provisioned and deployed with minimal management effort or service provider interaction. The National Institute of Standards and Technology (NIST) describes cloud computing as a service that facilitates the remote storage and access of required software applications via the Internet. In essence, cloud computing involves the storage and public accessibility of data (Sheikhzadeh et al., 2024), with applications being accessible online rather than confined to a single device. Within this framework, the term "cloud" serves as a metaphor for the Internet. Another widely accepted definition characterizes cloud computing as a model for utilizing ICT services—including networks, services, applications, and servers—wherein scalable services are provided online to both private consumers and enterprises (Al-Dabi & Avison, 2010).

From Justerman's (2015) perspective, as illustrated in Figure 1, cloud computing provides access to a set of manageable and scalable IT resources—such as infrastructure (IaaS), hardware, development platforms (PaaS), and application software (SaaS)—on demand.

A notable example is Amazon's development platforms, which offer customers virtual computing services, including servers, networks, and data storage. These platforms allow users to control, monitor, and implement any operating system and software without owning, managing, or operating the virtual IT infrastructure (Hu et al., 2017). Google, Amazon, and Microsoft are recognized as the pioneering players in the "cloud computing" era (Venteerz & Vidle, 2012).

Industry surveys indicate that marketing, sales, and human resources departments are leading in the adoption of cloud service delivery models, favoring SaaS and IaaS. In contrast, research and development, as well as production sectors, tend to be more cautious due to concerns about the potential unintentional disclosure of intellectual property or production-related information (Al-Raqayan, 2017). Additionally, findings suggest that customers utilize IaaS to support supply chain management activities, which require the processing of vast amounts of complex data.

Software as a Service (SaaS) is extensively used to facilitate customer relationship management and human resource management activities. This lightweight software solution enables the provision of applications that run on cloud infrastructure and can be accessed remotely by client companies through web browsers. SaaS solutions encompass a broad range of applications, from standard tools such as email and office productivity software to sophisticated enterprise resource planning (ERP) systems (Storm et al., 2023).

Grance and Mell (2011) describe the key features of cloud computing as including self-service, on-demand access to shared and managed virtual IT resources over an existing network, priced on a pay-as-you-go basis. Typically, cloud computing consumers do not own the physical cloud infrastructure but instead rent it from third-party providers to avoid capital costs, consuming resources as a service and paying only for what they use. Many cloud computing services operate on a public computing model, allowing users to access them similarly to utilities such as electricity. In other cases, providers offer services through subscription-based models. Sharing "consumable and intangible" computing power among multiple tenants enhances productivity, as it prevents servers from remaining idle, significantly reducing costs while simultaneously accelerating the production and development of applications (Wang et al., 2023).

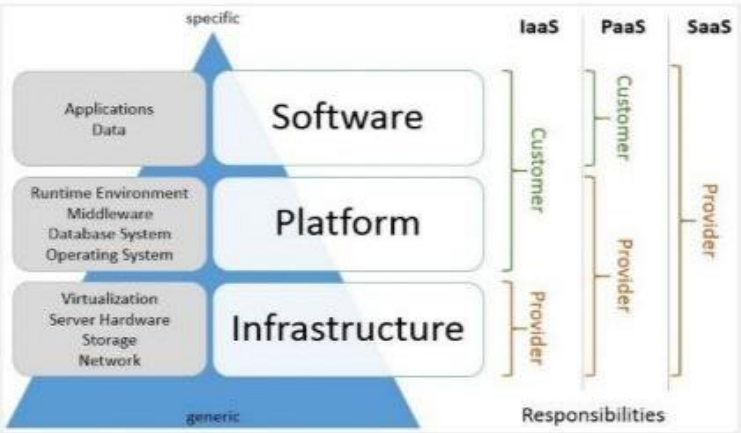

Figure (1). Cloud service (Justerman, 2015)

- **Cloud Technology Maturity and the Gartner Cycle**

The concept of technology maturity positions a technology along the continuum of technological development and aids organizations in formulating their technology strategies. Several frameworks analyze technology maturity, illustrating the evolution of technologies from the embryonic stage to growth, maturity, and eventual decline (Foster, 2012; Russell et al., 1991; Vittorio, 2001). One such framework is

the Gartner Hype Cycle, a graphical representation of the maturity, adoption, and social application of specific technologies over time. Developed and branded by the IT research and consulting firm Gartner, this model outlines five distinct stages in the evolution of emerging technologies. Essentially, the Hype Cycle serves as a strategic planning tool, supporting the evaluation of a technology's development until it reaches full implementation (Moorman & Tushman, 1997; Moorman & Franken, 2006; Srinivasan et al., 2004). As illustrated in Figure 2, during the initial stage, while the technology may exhibit potential applications, the nature of its solutions and its trajectory toward industrial production remains uncertain.

Technological advancements continue to progress during the growth stage, driven by accumulated knowledge, while many initial barriers and uncertainties are eliminated. The maturity stage represents a phase in which the technology is well-established and widely diffused. At this point, incremental improvements and competing designs emerge as various industry players refine and enhance the technology (Yalpanyan et al., 2024).

A practical example of assessing the perceived maturity of technologies in the industry is the annual Gartner Hype Cycle. This model visually represents the life cycle stages of emerging technologies, such as blockchain and Bitcoin, tracing their development from inception to maturity and eventual widespread adoption. According to Gartner Inns (2012), cloud computing has surpassed the peak of inflated expectations and has now entered a more realistic phase characterized by capability assessment, increased testing, and broader implementation of cloud solutions. The next phase in the hype cycle, known as the Slope of Enlightenment, aligns with the growth stage of cloud computing, signifying that cloud technologies have reached a level of proven maturity. This stage facilitates further adoption and expansion of cloud-based solutions (Adero, 2009; Adestrom, 2010).

Key technologies essential for competitive success provide opportunities for meaningful differentiation in processes or products. Their widespread acceptance across industries indicates their potential to become industry standards (Russell et al., 1991; Floyd, 1997). Studies suggest that marketing, sales, and human resources departments are at the forefront of adopting cloud service delivery models, particularly SaaS and IaaS. In contrast, the R&D and manufacturing sectors exhibit a more cautious approach to cloud adoption due to concerns about the unintentional disclosure of intellectual property or production-sensitive information. Despite this hesitancy, cloud adoption trends indicate that marketing, sales, and human resources are leading the transition toward cloud-based business operations (Al-Raqayan, 2017).

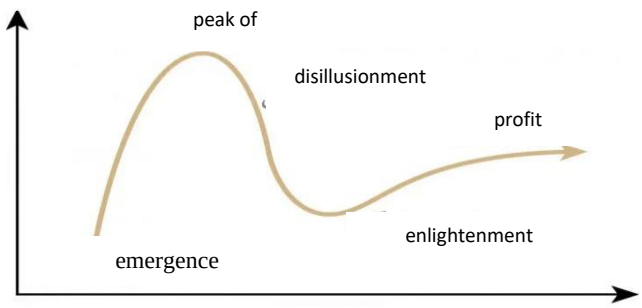

Figure (2) Gartner Hype Cycle (1995)

- **Key Features of Cloud Computing in the Business Path**

Cloud computing has significantly transformed the competitive landscape of modern businesses by utilizing key business enablers, which activate and strengthen business model innovation. As shown in **Figure 3**, some of the core features of cloud computing include cost flexibility, business scalability, market adaptability, hidden complexity, context-based

diversity, and ecosystem connectivity (Wang et al., 2023).

One of the primary reasons many companies are considering the adoption of cloud services is the **cost flexibility** they offer. A scientific study found that over 31% of managers cited the potential of cloud services to reduce fixed IT costs and modify the structure of variable costs as a major advantage. Cloud services allow organizations to shift from capital expenditures to operating expenses, reducing fixed IT costs. Furthermore, cloud applications eliminate the need for organizations to build hardware, install software, or pay for proprietary software licenses. Instead, companies can access these services on demand and pay only for what they use. Additionally, cloud technology enables organizations to scale their business operations easily without requiring simultaneous infrastructure upgrades.

The investment and rapid expansion of computing capabilities have enhanced the appeal of cloud computing to customers. For instance, Netflix, an internet subscription service that streams movies and TV shows on demand, experiences significant spikes in demand during peak consumption times. To manage this, Netflix transitioned its website and streaming services from a traditional data center to a cloud environment. This shift allowed the company to scale its operations and expand its customer base without the need to build and maintain an additional data center (Netflix, 2010).

In today's dynamic economic environment, businesses are increasingly focused on improving their agility to quickly adapt to changing market demands. The cloud model supports this by enabling rapid prototyping, facilitating innovation, and enhancing responsiveness to shifting market needs (Al-Raqayan, 2017).

Figure (3). Cloud-based business innovation(Wang et al., 2023).

Beyond these advantages, cloud services allow organizations to "hide" operational complexities from end users, which broadens their consumer base. For example, system upgrades and maintenance can be carried out "in the background," without requiring direct involvement from users (Kraus et al., 2019). Additionally, cloud technology enables system diversification, making it more user-centric. It also

facilitates collaboration with external partners and customers through ecosystem connectivity, leading to improved productivity and enhanced innovation (Bonken et al., 2019).

- **Cloud Enablement Framework in the Business Path**

The Indicator Under Assessment (IBM) developed the Cloud Enablement Framework, which categorizes organizations into three archetypes: optimizers, innovators, and disruptors. These archetypes are determined by the extent to which an organization utilizes cloud computing and the impact this has on its value propositions and value chains. As shown in Figure 4, the framework highlights how an organization's cloud-based business strategy influences its ability to create customer value and transform or develop new value chains (Netflix, 2010). **Optimizers** use cloud computing to gradually enhance their customer value propositions while improving organizational efficiency. This approach allows them to strengthen customer relationships without taking on the risk of disruptive, untested business models. **Innovators**, on the other hand, leverage cloud services to significantly expand their offerings and create new revenue streams. Through this process, they alter their roles within their industries or venture into adjacent markets (Al-Raqayan, 2017). As they evolve, innovators have the opportunity to integrate previously disconnected elements of the value chain and value proposition, thus gaining a competitive edge.

Disruptors go further by creating entirely new value propositions in response to emerging customer needs, giving them a unique competitive advantage that can disrupt existing industries or markets, or even create new ones. By embracing higher levels of risk, disruptors have the potential to outperform innovators or optimizers in the future, compensating for their risks with higher anticipated rewards (Ties, 2018).

- **Theory of Dynamic Capabilities and Innovation in Business Models**

Dynamic capabilities have emerged as a complement to strategic management theories within the resource-based view (RBV) over the past decade. The growing need for organizations to learn and adapt in complex environments, combined with the demand for effective strategic development since 2000, has driven the rise of dynamic capabilities. According to Bonken et al. (2019), dynamic capabilities are sustainable organizational behaviors that enable the integration, reformulation, renewal, and rebuilding of resources and capabilities. Most importantly, they focus on improving and modernizing core capabilities in response to environmental changes to maintain a sustainable competitive advantage.

One key dynamic capability is integration, which involves the ability to combine new knowledge with operational capabilities within the organization. Another critical capability is assessment, which includes the ability to identify, interpret, and pursue opportunities in the external environment. Studies suggest that dynamic capabilities cannot be directly acquired from the market but are developed internally, relying on the organization's strategic direction. Kraus et al. (2019) argue that dynamic capabilities are sustainable and that an organization that merely adapts to a series of crises creatively but in a disjointed manner does not demonstrate true dynamic capabilities. Furthermore, while dynamic capabilities are associated with strategic change, they are not synonymous with it. The core assumption of the Dynamic Capabilities Framework is that core competencies should be leveraged to address short-term competitive situations, and to create long-term competitive advantage (Barney, 1991; Wernerfelt, 1984).

From this perspective, learning is seen as essential. Employees must be capable of using common communication codes and coordinated search methods to build strategic assets with new technologies. Eventually, these new technological products should be embedded into the organization's procedures and logic. Procedures, in this context, refer to interaction patterns within groups that represent successful solutions to specific problems.

The creation of new strategic assets is another vital dynamic capability, achieved through specific organizational practices, such as linking customer experiences to engineering design choices and coordinating effectively with factories and suppliers. This enables organizations to acquire new strategic assets from external sources (Mohammadnejad-Chari et al., 2023). The third dynamic capability involves altering the company's asset structure and undergoing internal and external transformations in response to rapid market changes. This capability depends on scanning the environment, assessing markets, accelerating change, and responding faster than competitors. Such processes can be supported by

decentralization or the establishment of strategic coordination and alliances (Ties, 2018). As illustrated in Figure 5, the theoretical and practical significance of developing and applying dynamic capabilities in organizations operating in complex and highly variable external environments has made this a focal point in the research agenda of many scholars (Al-Raqayan, 2017).

In this theory, dynamic capabilities include the measurement, recording, and transformation capabilities required for business model design, implementation, and innovation (Ties, 2018) and depend on managerial capabilities to identify opportunities, allocate resources to develop and modify parts of the business model and create structural and cultural alignments that lead to changes in the company and its business model (Foss and Saebi, 2017).

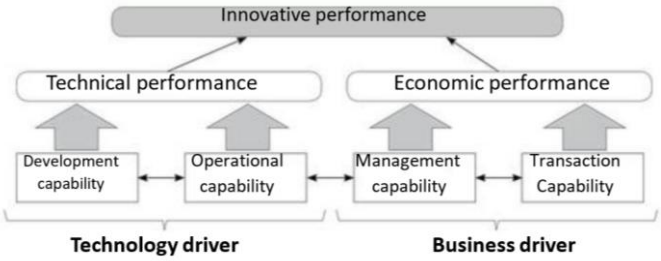

Figure (5). Innovative organizational model

- **The process of business advancement with the help of cloud computing from a knowledge perspective**

In the path of innovation of the stage-based business model (BMI) of cloud sourcing, according to Figure 6, the management of companies should use three types of dynamic capabilities, including measurement, discovery, and transformation capabilities, to move from one stage to another; dynamic links should be overcome at each dynamic stage. Also, the design and adjustment of the modular structure of cloud sourcing, that is, systems and data storage capacity, by the cost structure is a way to reconstruct the value proposition for customers, including dynamic stages in the new cloud-based business model. According to the presented model, the design of the basic package with specific digital tools and other organizational procedures on safety and maintenance principles, to create and provide value to the customer, adding modules with more advanced digital tools based on augmented sensor capabilities, as well as online monitoring and big data analysis, are other functions of cloud computing in the new business model, which can increase device reliability and uptime through predictive maintenance. Therefore, dynamic complexity is characterized by significant changes in business model capabilities and relationships with cloud-sourcing partners (Ties, 2018). In this path, cloud providers do not need to go through discrete development stages but rather through nonlinear stages divided by dynamic stages. Surveys show that most of the research conducted in this area is around the issue of business model generation and development as well as the creation of lean startups, while the evaluated index (IBM) in the field of entrepreneurship includes revising the business model based on customer needs and realigning processes, resources and profit generation in light of the new value proposition (Kim et al., 2005), as well as distinctive business operations, processes, choices and other rationales for creating value and earning sustainable income (Magretta, 2002).

3. Background of the Research

According to Eurich et al. (2014), IBM is a tool that seeks to achieve competitive advantage by creating and recreating business models and changing at least one of the components of the current.

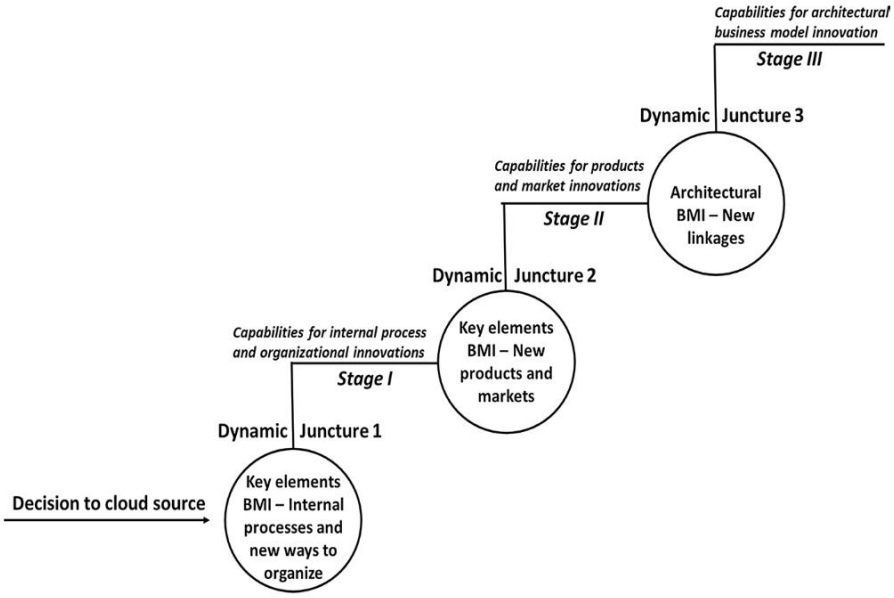

Figure (6). Stage-based Business Model Innovation Path Model (BMI) related to cloud sourcing

Business model. However, reaching the minimum threshold for IBM when limited to one component may not be sufficient for most organizations unless they offer very strong value propositions to end users (Chesbroo, 2010). Therefore, a distinction can be made between innovations in key elements and architectural or configuration innovations, as used by Claub et al. (2019). For example, in business model innovation in companies operating in the electronics industry (2019), examples of innovations in key elements related to cloud sourcing could be the introduction of new software as a service (SaaS) or the introduction of a new internal process based on SaaS or new platforms (PaaS). One of the key elements in strategy formulation is the attention to the formulation of value propositions in business model design, which may lead to confusion and interpretation problems regarding the formulation of value propositions in the business model canvas (Anderson et al., 2006). From a traditional perspective, the competitive impact of technologies is related to product and service differentiation and not to differences in business models. Such a view is based on an old school of thought about innovation and competitive advantage, according to which technological innovation leads only to product or process innovation. However, in recent years, more attention has been paid in the research community to the concept of business model innovation as a complementary element in the process of value creation from technological innovation (Chesbroo et al., 2003-2008).

4- Methodology

Since this research seeks to identify the factors affecting the new business model based on cloud computing, it is fundamental in terms of purpose and mixed in terms of method, exploratory with an emphasis on qualitative data. In the qualitative method, using the meta-synthesis tool that includes the seven-step model of Sandelowski and Barso (2007), first, through a review of reputable scientific articles and interviews with experts, the factors affecting the new business model based on cloud computing were identified, evaluated, and systematically analyzed. Then, in the quantitative method, the identified factors were ranked using the Shannon entropy tool. The statistical population of the research was purposefully selected from among experts who were 1- university professors in accounting, finance, or technology and IT management and 2- senior managers of two institutions that have implemented and implemented cloud computing technology as pioneers for 3 years in

Iran. The obtained sample also includes 15 experts, which according to the researchers' theory, to achieve the interviewees' perspective and to realize the theoretical saturation principle, the number of 12 interviewees is acceptable and results in the realization of the research objectives (Hariri, 2006). Sandelowski and Barso's seven-step model (2007) to achieve the desired model includes the following steps:

Table 1: Selected terms for searching databases

Term
Business models
New business model
Business model innovation
Cloud sourcing
Stage-based model
Dynamic Capability Theory

Step one: Setting the research question, which includes the following questions: 1) What factors affect cloud computing-based business according to dynamic capability theory? 2) How does the prioritization of factors affect cloud computing-based business according to dynamic capability theory? 3) According to dynamic capability theory, what is the cloud computing business model in Iran?

Step two: Systematic literature search. In this step, the researcher systematically searches for articles published in reputable and relevant domestic and foreign scientific journals using keywords. The selection of keywords for the search is initially general and then more specific. For this purpose, the words in Table 1 were examined individually or in combination in Persian and English.

Given the aim of developing thematic content in this article, the search was not limited to specific journals or specific years of publication (Hatzenschneider and Hrosteck, 2013). The databases examined also included sites like Scopus and Web of Science, the Persian sites of the Jahad Daneshgahi Scientific Information Center[1], the Noor Specialized Journals Database[2], the Iranian Scientific Information Databases[3], and Elm-net[4], as well as the Business and New Technologies Journals website. In total, 3520 articles were identified in the period 2012-2014 and 2013-2023, based on the initial conditions. After reviewing the titles, abstracts, and keywords for topical relevance and removing duplicates, all articles classified as definitive or probable were read in full. Then, articles that were not related to business or cloud computing dimensions or that focused on other areas instead of the financial field were also removed. Finally, 20 English and 20 Persian articles were selected and subjected to a final review based on Table 2. A summary of the methodology can be seen in Figure 4.

Step Three: Searching and Selecting Appropriate Texts: In this step, after several readings and filtering of the articles, various parameters such as title, abstract, content, article details (author's name, year, etc.) were considered, and articles that did not fit the research question and purpose were eliminated.

Step Four: Extracting Text Information: In this step, after careful examination of the title, abstract, and content of the article, several sources were found and eliminated, and 52 selected articles were entered into the CASP (Critical Assessment Skills Program) to determine validity so that each article would be evaluated and scored according to 10 qualitative conditions, and based on each of these conditions, a score between 1 and 5 would be assigned to each article. Based on this program, articles with a total score of 25 or higher would be approved in terms of quality, and the remaining articles would be eliminated. The criteria considered for the CASP method in this study are 1) the suitability of the article's objectives with the research objectives, 2) the topicality of the topic, 3) the article's design, 4) the sampling method, 5) the method and quality of data collection, 6) the degree of reflectivity and the possibility of expanding the results of the article, 7) the extent and manner of observing common ethical points in the field of article writing, 8) the degree of accuracy in data analysis, 9) the clarity of expression in presenting the findings, and 10) the overall value of the article.

The maximum score that each article receives based on the CASP scale is 50 points, given the existence of 10 criteria, the maximum score of which is 5 for each. Based on the rubric classification, there are 5 classification groups, including poor (0 to 10), average (11 to 20), good (21 to 30), very good (31 to 40), and finally excellent (40 to 50), and any article

[1] https://www.sid.ir/fa/journal/
[2] https://www.noormags.ir/
[3] https://ganj.irandoc.ac.ir
[4] https://elmnet.ir

that scores less than 25 points is eliminated. After scoring, 12 articles with scores less than 25 were eliminated, and finally, 40 final articles were selected as the study sample for evaluation. Table 2 summarizes the components of the new business model based on cloud computing after eliminating articles that scored less than 25.

Based on the research findings, the CASP score of 12 Persian and 16 English articles is 35 and above, indicating the research tool's validity. Also, the score of Persian articles varies between 31 and 44; in other words, the lowest score of Persian articles is 31, and the highest score is 44.

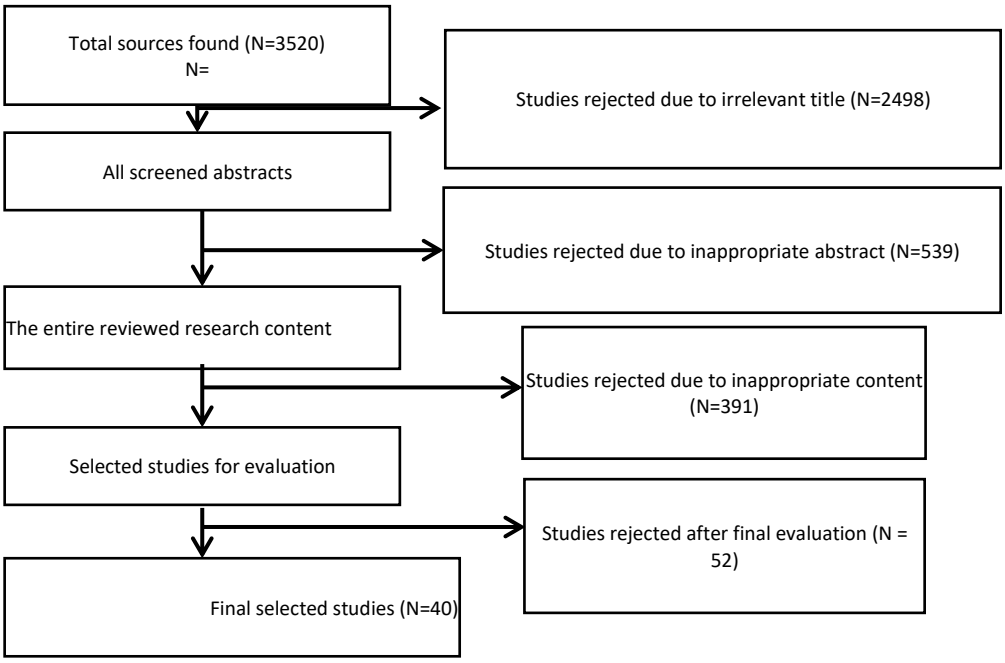

Figure (7). Process and number of sources reviewed in meta-synthesis (Source: Researcher's findings)

Table 2- List of final selected articles studied

CASP score	Identified factors	Researchers	Title of the article	row
31	Organizational, human, project management, and technical factors	Zare Ravasan, et al. (2013)	Identifying and categorizing critical success factors for business intelligence systems implementation projects in Iran.	1
34	Agility, alignment, Strategy Information Technology, and Strategy acquisition work with organizational Agility, two next Communication and skills: dimension level merit/value, level applied discretion, Participation, and area action.	Shahsavari Pour,et al. ٢٠١٦)).	The relationship between IT and business strategy alignment with organizational agility in software companies.	2
33	Development systems Information in global class, increase efficiency and effectiveness, organizational productivity, stable competitive advantage	Sabet Rasekh, et al. (2023)	A model for evaluating world-class information systems with a balanced scorecard approach in sports organizations	3
39	Facilitating conditions: technical infrastructure, website information quality and transparency, site security,	Sheikh Zadeh, etal. (2024)	A model for online donation intention for crowdfunding charities in Iran.	4

CASP score	Identified factors	Researchers	Title of the article	row
	application and privacy, perceived risk, enjoyment of helping others, performance expectations, and social impact.			
42	Organizational readiness and planning for implementing change, recognition, design and evaluation, culture, and changing factors affecting information technology	Salehi Sedqiani, et al. (2012)	Explaining the relationship between factors affecting perishable food supply chain processes based on cloud-based Internet of Things	5
39	Environmental factors, technological factors, organizational factors	Thaghafi, et al. (2022)	Explaining the relationship between factors affecting perishable food supply chain processes based on cloud-based Internet of Things	6
38	Components of online sales, digital marketing, suppliers, leadership, human resources, organizational culture, customer, market, and organizational structure, organizing e-commerce-based businesses, including technical, organizational, environmental, economic, and financial dimensions	Gaffari Ashtiani, et al. (2024)	Identifying factors affecting the management and organization of e-commerce-based businesses through a meta-synthesis approach.	7
37	Obtaining up-to-date information, having multiple skills and ethics of consultants), causal conditions (online business including five categories of efforts to acquire specialized knowledge, mastery of information and communication technology, online business experience, having order and discipline at work and flexible management), contextual conditions (government management performance, government structural performance, growth of consulting culture in society), intervening conditions (instability and lack of structure of the economy in Iran, inefficient bureaucracy, lack of laws supporting business owners and weaknesses within the profession), strategies (systematic and planned strategies by the government, acquiring up-to-date knowledge and information in the field of online business, practical and applied training in online business, having the power of discernment, using the experience of others and reference groups in one's field of work) and consequences (strategic thinking, self-empowerment, civic ethics in performing job duties, performance management)	Rafii, et al. (2023)	Designing a paradigmatic model of job competencies for online business consultants and its implications	8
38	Value proposition, value creation, value delivery, and value capture of the products offered; how market data is owned and transactions are directed; pricing models and revenue streams; mechanisms for protecting the privacy and securing transactions; methods for ensuring mutual trust; and other characteristics of market data.	Mohammad Nejadchari, et al. (2023)	Prototype development for market data platforms business model.	9
41	Virtual organization and network theories, environmental, organizational, and technological requirements	Muhammadian, et al. (2014)	Systematic review and future directions of research in the field of virtual business growth centers.	10
39	Cloud service providers, customers, service type, system type	Mazaheri, et al. (2023)	A comprehensive framework for selecting cloud service providers (CSPs) using a meta-synthesis approach.	11
44	Financial development, technological development, strategic development	Sasan, et al. (2022)	The role of intelligent business systems in improving organizational performance: A meta-analytic approach.	12

CASP score	Identified factors	Researchers	Title of the article	row
33	Organizational Adaptation, Business Intelligence	Puti et al. (2017)	A Model for Adapting Educational Organizations to Business Intelligence Requirements	13
35	Financial analysis parameters include current, quick, debt-to-equity ratios, net profit margin, cash flow ratio, and rate of return.	Mohammadi Raz, et al. (2023)	Intelligent management of social and environmental factors of businesses to achieve profitability.	14
33	Internal coordination, external coordination, and synergy of necessary data, factors of integration of organizational processes and strategies	Muhammadian, et al. (2014)	Factors Affecting the Selection of Small and medium-sized e-business Models in Iran	15
34	Structure of financial institutions, financial technology developers and business environment system models, customer segmentation, improving the business environment, improving organizational performance	Asadullah, et al. (2021)	Designing an open banking business model in the light of open innovation	16
36	Internet connection quality, awareness of electronic banking services, perception of usefulness and ease of use on electronic banking acceptance, trust	Bakhshi, et al. (2016)	A model for Electronic Banking adoption considering customer Trust Factor	17
34	Predictive, corrective, comprehensive productive maintenance and outsourcing strategies	Shafiei Nikabadi, et al. (2013)	Maintenance strategies and business performance. Quarterly Journal of Strategic Management Studies, 3(9), 115-132.	18
32	Knowledge management strategies with a multi-criteria decision-making approach, implementing a knowledge management system in the organization	Nezafati, et al. (2013)	Business knowledge management strategy	19
39	Knowledge management capabilities, business models and organizational innovation, knowledge management strategies, maturity level of Industry 4.0 technologies	Entezarian, et al. (2024)	The impact of knowledge management and Industry 4.0 technologies in organizations: A meta-synthesis approach	20
42	Three types of dynamic capabilities, sensing, capturing, and transforming capabilities,	Muhic & Bengtsson. (2021).	Dynamic capabilities triggered by cloud sourcing: a stage-based model of business model innovation	21
36	Creating innovation, competitive advantage	Willcocks L, et al. (2013b)	Moving to the cloud corporation: How to face the challenges and harness the potential of cloud computing.	22
35	Cloud providers, continuous use of cloud resources	Teece DJ (2018)	Business models and dynamic capabilities.	23
36	Models based on the innovation stage, business model, and dynamic capability of the company	Sturm, M., Weking, J., Böhm, M. et al(2023)	How two leading partners learn to tango: The case of IoT-based business model co-innovation between a retailer and an electronics supplier	24
37	Cloud sourcing, related technologies as drivers, and enablers of business model innovation	Muhic M, Johansson B (2014)	Cloud sourcing—next-generation outsourcing?	25
41	The evolution of dynamic capabilities, the evolution of the cloud-sourcing company	Legner C, et al. (2017)	Digitization: opportunity and challenge for the business and information systems engineering community.	26
45	The evolution of cloud sourcing companies, cloud-based business model innovation	Kraus S, et al. (2019)	Digital entrepreneurship: a research agenda on new business models for the twenty-first century.	27
40	Product and market innovations, acquisition, and merger candidates for new markets and new products	Spieth P, et al. (2014)	Business model innovation - state of the art and future challenges for the field.	28
44	New sales process, integrated teams, customer focus, IT department reorganization, new capabilities	Clauß T, Bouncken RB, Laudien S, Kraus S (2019)	Business model reconfiguration and innovation in SMEs: a mixed-method analysis from the electronics industry.	29

CASP score	Identified factors	Researchers	Title of the article	row
38	Developing digital and smart tools based on cloud technology, introducing new services on Internet of Things platforms	Bouncken RB, Kraus S (2013).	Innovation in knowledge-intensive industries: the double-edged sword of cooperation.	30
36	New internal processes, new ways of organizing new markets, sensors, digital platforms, increased predictive maintenance capabilities	Schneider S, Sunyaev A (2016)	Determinant factors of cloud-sourcing decisions: reflecting on the IT outsourcing literature in the era of cloud computing.	31
39	Need to have high technical skills and knowledge, be at the forefront of new technological advancements in the use of specific clouds	Bouncken RB, et al. (2016)	Entrepreneurial orientation in vertical alliances: joint product innovation and learning from allies.	32
40	Staff training, external operation consultant, training, and appointment of an ERP specialist	Bharadwaj A, et al. (2013)	Digital business strategy: Towards the next generation of insights.	33
34	Testing sensors at industry manager sites, developing digital tools, paying attention to the cloud technology approach	Wang, M., Yao, J. (2023)	Replenishment and delivery optimization for unmanned vending machine service systems based on fuzzy clustering	34
38	Understanding existing structures, identifying and integrating business model innovation drivers, new internal processes, and new ways of organizing	Weking, J., et al. (2020)	Practices for open business model innovation - An infomediaries perspective.	35
33	Business model innovation, product innovation, market innovation	Bouncken, RB, Roig-Tierno N, Kraus S (2019	) Knowledge- and innovation-based business models for future growth: digitalized business models and portfolio considerations.	36
28	Internal processes, organizational innovations, the need to have high technical skills and knowledge, being at the forefront of new technology advancements in the use of cloud computing	Foss NJ, Saebi T (2017)	Fifteen years of research on business model innovation: How far have we come, and where should we go?	37
29	New links between key elements. Existing routines and structures	Salvato C, Vassolo R (2018)	The sources of dynamism in dynamic capabilities.	38
40	Entering new markets with a centralized system	Foss NJ, Saebi T (2018)	Business models and business model innovation: between wicked and paradigmatic problems.	39
36	Cloud Sourcing, Related Technologies, Drivers, Business Model Innovation Enablers, Model Architecture	Ratten V (2016)	Continuance use intention of cloud computing: innovativeness and creativity perspectives.	40

The scores of English articles also varied between 28 and 45; in other words, the lowest score was 29, and the highest score was 46.

Step Five: Analyzing the qualitative findings of the research. First, according to Table 4, all extracted factors are considered codes, and based on the meaning of each code, they are categorized into similar concepts.

Step Six: Quality Control and Content Analysis: In this step, the validity of the questionnaire was carried out through the Shannon entropy method. The findings were provided to 15 experts in the three specialized fields of accounting, finance, and technology for review and comment, and their corrective comments were applied to the questionnaire. Table 5 shows the demographic information of the experts.

To determine the level of reliability, the components identified in the proposed model were coded and measured through Cohen's Kappa coefficient (Kappa index). Given that the Kappa coefficient is greater than 0.6, the components of the proposed model have the necessary reliability. Table 6 presents the coding of the two evaluators for the components of the modern business model based on cloud computing.

Table 4: Coding of factors affecting cloud computing-based business

Open coding	Sub-factors	Axial coding	Factors affecting cloud computing-based businesses
C01	Dynamic section and key elements	C1	Dynamic capabilities
C02	Business model innovation	C1	
C03	Empowering key elements	C1	
C04	Element Capability Stage	C1	
C05	Dynamic section and innovation in the model	C1	
C06	Architecture	C1	
C07	Problems communicating with customers	C2	To feel
C08	Cloud Sourcing Features and Technology	C2	
C09	Sales staff training	C2	
C10	Internal staff and external consultants	C2	
C11	Super users	C3	Interviewees
C12	Foreign consultants	C3	
C13	Internal ERP Specialist	C3	
C14	Information Technology Manager	C3	
C15	External cloud partners	C3	
C16	Website	C3	
C17	Industrial sites	C3	
C18	Cloud brokerage	C3	
C19	Introducing and implementing users	C4	Becoming
C20	Reducing nightly demand for cloud	C4	
C21	ERP implementation	C4	
C22	Implementing a cloud specialist in the organization	C4	
C23	Appointment and implementation of SVP	C4	
C24	Digital Development Manager	C4	
C25	Employee training	C5	confiscation doer
C26	Foreign consultant reviews night operations	C5	
C27	Cloud specialist training and appointment	C5	
C28	Cloud specialist training and appointment	C5	
C29	Entering new markets	C5	
C30	Testing sensors on site	C5	

Table 5: Characteristics of Expert Respondents

work history	age	job	education	gender
18	43	Faculty member of Financial Management	Ph.D	Male
11	38	Financial manager	Master's degree	Male
17	44	Technology Manager	Master's degree	Female
21	45	Technology Faculty Member	Ph.D	Male
19	46	Financial manager	Master's degree	Male
24	54	Member of the Accounting Faculty	Ph.D	Female
26	53	Member of the Accounting Faculty	Ph.D	Male
23	49	Technology Manager	Master's degree	Male

work history	age	job	education	gender
20	47	Official accountant	Master's degree	Female
19	46	Member of the Accounting Faculty	Ph.D	Male
20	43	Financial manager	Master's degree	Male
17	48	Faculty member of Financial Management	Ph.D	Female
15	42	Official accountant	Ph.D	Male
20	45	Member of the Accounting Faculty	Ph.D	Male
18	46	Technology Manager	Master's degree	Female

Table 6: Coding of the two evaluators

Encoder ۲	Encoder ۱	Agents sub	Codes
1	1	Dynamic section and key elements	C01
1	1	Business model innovation	C02
1	1	Empowering key elements	C03
1	1	Element Capability Stage	C04
1	1	Dynamic section and innovation in the model	C05
2	2	Architecture	C06
2	2	Problems communicating with customers	C07
2	2	Cloud Sourcing Features and Technology	C08
2	2	Sales staff training	C09
2	2	Internal staff and external consultants	C10
3	3	superusers	C11
3	3	Foreign consultants	C12
3	3	Internal ERP Specialist	C13
3	3	Information Technology Manager	C14
3	3	External cloud partners	C15
3	3	Website	C16
3	3	Industrial sites	C17
3	3	Cloud brokerage	C18
4	4	Introducing and implementing users	C19
4	4	Reducing nightly demand for cloud	C20
4	4	ERP implementation	C21
4	4	Implementing a cloud specialist in the organization	C22
4	4	Appointment and implementation of SVP	C23
4	4	Digital Development Manager	C24
5	5	Employee training	C25
5	5	Foreign consultant reviews night operations	C26
5	5	Training and appointment of layer specialist	C27
5	5	Cloud specialist training and appointment	C28
5	5	Entering new markets	C29
5	5	Testing sensors on site	C30

Step seven: Presentation of findings. The findings from the previous steps show that 5 main factors and 30 sub-factors were identified for the proposed modern business model based on cloud computing, presented in Figure 2. These factors include: 1) Dynamic capabilities including dynamic section and key elements, business model innovation, enabling key elements, element capability stage, dynamic section and innovation in the model 2) Sensing including architecture, customer relationship issues, cloud sourcing features, and technology, training internal staff and external consultants 3) Interviewees including super users, external consultants, internal ERP specialists, IT manager, external cloud partners,

websites, industry, and cloud brokers 4) Transformation including user introduction and implementation, reducing demand for cloud, ERP implementation, implementing cloud specialist in the organization, appointing and implementing SVP and digital development manager and finally 5) Confiscating including vendor training, external consultant reviewing night operations, training and appointing layer specialist, training and appointing cloud specialist, entering new markets and testing sensors on site.

The Shannon entropy method, which performs very strong data processing in content analysis, has also been used to rank the main components of the model. For this purpose, first, the experts' opinions were asked in the form of numbers 1 to 20 to examine the importance and rank of each factor. The answers were then entered into an Excel spreadsheet and normalized. The ranking of each factor is presented in Table 7.

Table 7: Ranking of the main factors of modern business based on cloud computing using the Shannon entropy method

Confiscating	Becoming	Interviewees	To feel	Dynamic capabilities	
8.7482	8.9143	8.9348	8.9241	8.9144	Ej
0.2337	0.2348	0.2425	0.2421	0.2419	Wi
5	4	1	2	3	

5 - Findings

As the results of Table 7 show, among the five factors affecting the components of a new cloud-based business, the interviewees, including super users, external consultants, internal ERP experts, IT managers of external cloud partners, websites, industrial sites, and cloud brokers, have the greatest impact on a new cloud-based business and are ranked first. Based on this, it can be concluded that every company in the process of launching its new business seeks to understand how, when, and why data transfer occurs in the strategic innovation of cloud sourcing. To understand this, the dynamic capability perspective conceives the firm as a heterogeneous set of dynamic capabilities that are semi-permanently related to management, and if there are deficiencies and weaknesses in the firm's dynamic business capabilities, it may limit the use of cloud sourcing and business model innovation in the firm (Bharajeh et al., 2013); therefore, the value of the firm's strategic resources decreases over time as competition becomes more widespread, and the only competitive advantage that will remain over time is the ability to develop, reconfigure, and delegate the firm's business capabilities in a more effective way than its competitors (T.C., 2018).

Based on the research findings, in the second place, the sensing component, including factors such as architecture, difficulties in communicating with customers, cloud sourcing features and technology, and training of internal employees and external consultants, impacts the new business based on cloud computing. Meanwhile, since the dynamic capabilities required for the design, implementation, and innovation of the business model include measurement, capture, and transformation, to achieve the goals of implementing this type of strategy, it is essential that factors such as management competencies in identifying opportunities, modifying parts of the business model, and allocating the necessary resources to develop and overcome existing challenges in communicating with customers, as well as structural and cultural alignment to change the company and its business model, along with training sales staff and internal employees, be considered (TC, 2018). According to experts, by using internal processes and organizational innovations and using key elements of business model innovation, most of the problems related to the implementation of cloud computing can be solved by introducing new procedures/processes and making minor changes in organizational structures, such as appointing specialists and a new type of technological structures and enabling employees and systems to work well from a technical and operational point of view. In addition, experts, in cooperation with cloud providers and external consultants, regularly identify internal process improvements and changes and use the benefits of cloud-sourcing flexibility. Based on the findings of this research, the proposed new business model based on cloud computing is presented in Figure 8. Based on the research findings, in terms of

prioritization, dynamic capabilities, including dynamic stage and key elements, business model innovation, enabling key elements, element capability stage, dynamic stage, and innovation in the model are ranked third. However, in the path of product and market innovations, cloud sourcing and related technologies are considered drivers of product innovation and geographical expansion of the business model, which can take an effective step towards the transformation of the modern business process by creating new opportunities in technology and product development, marketing and sales.

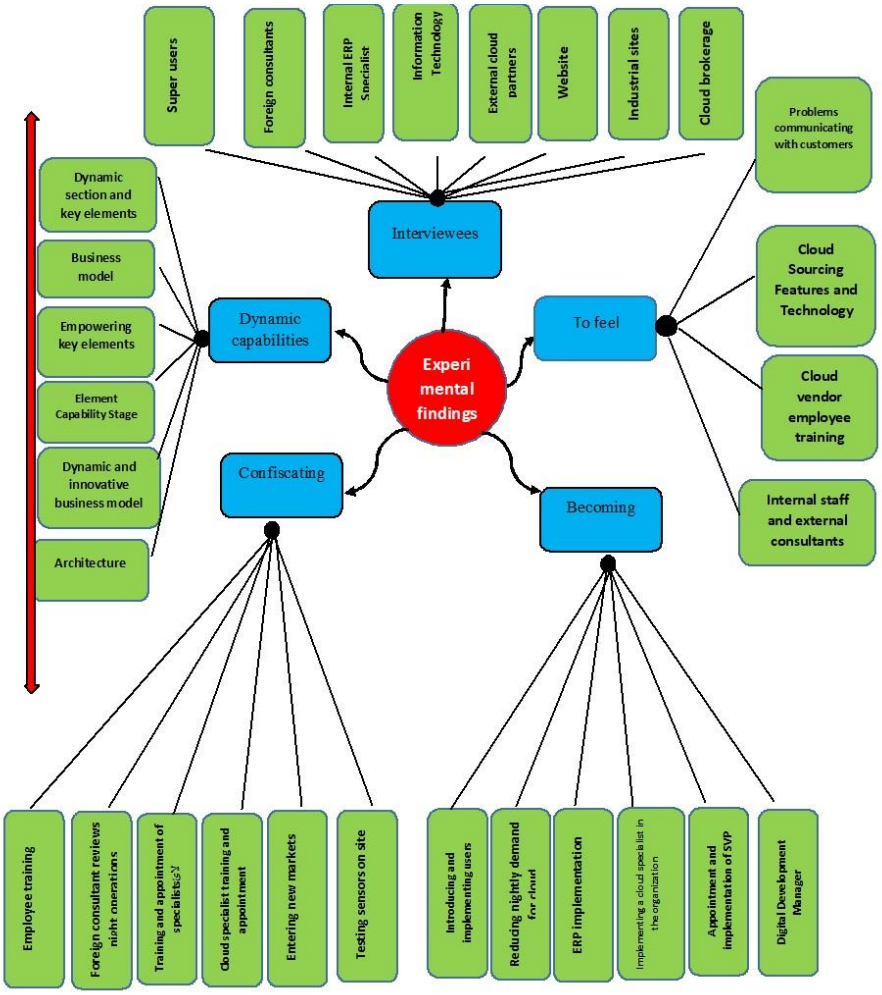

Figure (8). Modern business model based on cloud computing

According to these findings, the transformation component, including factors such as reducing nightly demand for cloud, implementing ERP, implementing a cloud specialist in the organization, appointing and implementing an SVP and a digital development manager, ranked fourth in terms of prioritization of

new cloud-based business factors, and finally, in terms of prioritization, the confiscation factor, including training vendors, an external consultant reviewing night operations, training and appointing a cloud specialist, entering new markets, and testing sensors on site, ranked last in the new cloud-based business model. In this path, cloud sourcing and related digital technologies are considered drivers and enablers of strategic architectural and digital innovation in the new cloud-based business model. Therefore, the transformation of the organizational structure with closer communication between business and IT managers, as well as development meetings and interactions with cloud partner companies, together with virtual customer-centric integrated sales teams and the modular structure of cloud sourcing and finally digital technologies, ensure that the procedures and structures for understanding, attracting and integrating candidates are essential and instrumental not only for key elements in the business model but also for new links between key elements in the business model architecture. In addition to paying attention to dynamic capabilities on how the company competes, it is necessary to pay special attention to technological possibilities, namely the development of new technology as one of the common drivers for creating business opportunities; because the adoption of a new technology, such as cloud computing, which, while enabling the sourcing of IT systems in a new way, may initiate a transformation process that is driven by the company's dynamic capabilities. Based on the strength of dynamic capabilities, it is possible to determine the speed and degree of renewal and reconfiguration of conventional resources and capabilities in response to market changes.

6- Discussion and Conclusion

Since today the development of information technology and its innovation capabilities in the field of business is considered as one of the main competitive advantages of institutions, focusing on the dynamic capabilities of the institution through the performance of information technology has become one of the main management topics. Therefore, this research aimed to answer the following questions: (1) What factors affect the new business based on cloud computing? (2) How are prioritizing factors affecting the new business based on cloud computing? And (3) What is the new business model based on cloud computing?

To achieve these goals, in the qualitative part, using the seven-stage model of Sandelowski and Barso (2007), the identification, evaluation, and systematic analysis of domestic and foreign research on cloud computing-based business in the financial field during the years (from 2010 to 2023 English and 1390 to 1403 Islamic) were carried out, and finally 40 articles were selected based on the CASP scale. Then, the factors and criteria identified in this stage were reviewed and approved from the perspective of 12 experts. The open-coding method was used to analyze and synthesize the qualitative findings. Also, the research findings were ranked using the Shannon entropy technique, and finally, after performing the meta-synthesis steps, the new business model based on cloud computing was presented, including 5 main factors and 30 criteria. The identified factors are: 1) Dynamic capabilities including dynamic section and key elements, business model innovation, enabling key elements, element capability stage and dynamic section and innovation in the model 2) Sensing including architecture, problems in establishing relationships with customers, cloud sourcing features and technology, training internal employees and external consultants 3) Interviewees including superusers, external consultants, internal ERP specialist, IT manager of external cloud partners, website, industrial sites and cloud brokerage 4) Transformation including introducing and implementing users, reducing overnight demand for cloud, implementing ERP, implementing a cloud specialist in the organization, appointing and implementing an SVP and a digital development manager and finally 5) Confiscating including training vendors, external consultant reviewing operations, training and appointing a cloud specialist, entering new markets and testing sensors on site. Also, based on the research findings, the factors had appropriate validity and reliability.

In response to the second question, based on the results of Shannon entropy, among the five factors affecting the components of a new business based on cloud computing, the interviewees, including superusers, external consultants, internal ERP specialists, IT managers, external cloud partners, internet sites, industry and cloud brokerage, have the greatest impact on the new business based on cloud computing and are ranked first. In second place, sensing, including architecture, problems in establishing relationships with customers, cloud

sourcing features and technology, and training of internal employees and external consultants, have an impact on the new business based on cloud computing. Based on the research findings, dynamic capabilities, including dynamic section and key elements, business model innovation, enabling key elements, capability stage of elements, and dynamic section and innovation in the model, are ranked third in terms of priority. Also, according to the research findings, transformation including user introduction and implementation, reducing overnight demand for cloud, ERP implementation, implementing a cloud specialist in the organization, and appointing and implementing an SVP and a digital development manager are ranked fourth in terms of prioritization of new cloud-based business factors, and finally, the expropriation factor including employee training, an external consultant reviewing operations, training and appointing a cloud specialist, entering new markets, and testing sensors on site are ranked last in terms of prioritization in the new cloud-based business model.

Based on these findings, it can be concluded that the development of new technologies, such as cloud computing, is one of the common drivers for creating business opportunities, including new strategies on how to compete in the company's business model, which enables the sourcing of IT systems in a new way. It also leads to a novel and specialized design in the key elements of a company's business model or the architecture connecting the elements and mechanisms of value creation. Accordingly, it may initiate a transformation process that reflects new forms of organizational flexibility driven by the company's dynamic capabilities and can be used to innovate its business model. In addition, adopting cloud service delivery models leads to the creation of new revenue sources and a reduction in the company's IT assets' capital cost. The findings of this section are consistent with the results of research by Wang et al. (2023), Woking (2020), and Clubb et al. (2019). On the other hand, based on the research findings, although the role of technical innovation, such as cloud computing, is well known as a driver for business model transformation, there is still no coherent view of the transformation process in companies or between partner companies based on the theory of dynamic capabilities. While the theory of dynamic capabilities emphasizes the need for companies and their management to change and innovate continuously and intensively, it also takes into account the organizational structures and cultures related to the path and their role in applying new technologies in organizational business models and considers the process of changes or their resistance to change in this path. In addition, by dividing the time, the theory of dynamic capabilities manages the process of implementation activities to implement cloud computing-based innovation business models in a dynamic environment. In addition, a non-business environment, such as traditional IT operations and outsourcing solutions, may exacerbate development constraints. According to the dynamic capability perspective, to progress through the stages of business model innovation, cloud-sourcing companies need to develop and deploy relevant dynamic capabilities (Ties, 2018). The findings in this section are consistent with the results of research by Strom et al. (2023), Cross et al. (2019), and Langer et al. (2017). Moreover, since business model innovation is crucial for companies to stay competitive, respond to market changes, and generate sustainable growth, it enables companies to deliver increased value to customers, optimize operations, seize new opportunities, and ultimately drive long-term success in a rapidly evolving business landscape. However, the model presented in this study, which describes the stages and stages of business development associated with the adoption and continued use of cloud sourcing, shows a linear development path in which the absence or weakness of dynamic capabilities makes it difficult or impossible to move to the next stage of the model and prevents further business model innovation. To address this challenge, sensing capabilities alone are not enough, and capture and transformation capabilities must also be available. Since IT performance is considered part of this study's cloud computing process environment, its entire IT performance has not been systematically studied. However, it is clear from the research findings that IT function and its capabilities are key in measuring, discovering, and changing the business model related to cloud computing.

The proposed research model shows that the IT function, to lead and manage the collaboration with cloud providers, first organizes technical issues and key internal elements in the business model, namely internal processes and organizational innovations, and then designs and depicts a more commercial path with innovation in key elements in new products/services and markets. In this path, the most difficult and

complex type of business model innovation is architectural innovation, which requires changes in the linkage of key elements of the business model and is based on dynamic capabilities that integrate the business IT function with the technical top management function. Overall, our model is consistent with the research conducted by Willcocks et al. (2013) and accepts cloud computing on business model innovation and the future of IT function. Certainly, firms with more developed and robust dynamic capabilities associated with cloud sourcing may be able to implement a faster and more complete process, but according to our model, there will still be a temporal pattern (Halfat & Pitraf, 2003). Although cloud computing is still an evolving technology and the available research on its impact in practice is limited, it must be acknowledged that given the technology's focus on performance and its traditional role in providing internal services and separating IT and business departments (Legner et al., 2017; Vithayathil, 2018), the potential for cloud sourcing to become a driver of strategic innovation remains problematic and challenging (Vithayathil, 2018). Although Willcocks et al. (2013), in their empirical research on cloud computing and innovation, concluded that the pace of progress through cloud computing that drives innovation in companies seems surprisingly slow, and in this direction, technological challenges are among the most important obstacles. However, the findings of this study confirm that although technological issues are challenging and an obstacle to further business development in the early stage, in the later stages of business development, the lack of dynamic capabilities that combine business IT competencies with realignment of internal structures and culture, as well as establishing a good continuous innovation dialogue with cloud provider partners, are more important challenges in the path to creating innovative business models.

Adopting cloud delivery models leads to redesigning the value chain that includes business units, the ICT department, and cloud solution providers. It is suggested that a shared vision be developed among stakeholders on how to redesign value and create a governance model to enable the successful deployment of cloud service delivery models through collaborative collaboration. Without such a prerequisite, there is a risk of cloud solutions being overexpanded, which could erode the cost advantage over time. It is also suggested that, given the need for more senior staff capable of tackling complex business problems, new roles, competencies, and skills must be defined for staff to guide the selection and use of cloud solutions. In addition, since many innovations are created through partnerships with cloud providers, it is recommended that institutions increase the quota for inter-organizational innovation collaboration. It is also recommended that institutions integrate IT functions and business functions and review their architecture to realize the innovation of a new business model based on cloud computing. On the other hand, it is recommended that managers, when starting to implement cloud computing and gradually transferring business systems to the cloud, encounter new problems such as frequent updates, programs, and systems, which leads to confusion among system users; therefore, the need to provide special training to help users is felt. It is also recommended that institutions accelerate and facilitate the procedures and structures for developing business models by holding regular meetings with cloud technology providers. In addition, through interaction with cloud vendors, while understanding, identifying, and integrating new product or service innovations, they provide a basis for cooperation in developing new software-based services on the cloud platform.

This study also has some limitations, including the fact that in the interviews with experts, in addition to university professors, the opinions of senior technology managers of two institutions in Iran that implement cloud resources were taken. To confirm and expand on the findings of this study, more case studies are needed, as well as on a larger scale. Also, cloud computing technology and cloud sourcing solutions are developing rapidly, making our findings vulnerable to obsolescence. Therefore, new studies are needed to examine the developments of this phenomenon over time.

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