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Cloud Computing: A Veritable Driver of Supply Chain Transparency

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Abstract: *The scarcity of transparency is one of the causes of the lack of trust in sharing knowledge among supply chain members. The paper seeks to critically examine cloud computing as a veritable driver of supply chain transparency. The study utilizes documentary analysis to buttress the impact of cloud computing on supply chain transparency, and the theoretical findings disclose that, cloud computing offers transparency to a supply chain and consequently enhances trust among partners, cloud computing facilitates supply chain transparency more efficiently than outmoded monitoring mechanisms, and cloud computing adoption helps in enhancing the reliability of transactions as well as transparency. The study therefore concludes that, cloud computing is a veritable driver of supply chain transparency.*

Keywords: *Cloud computing, Resource based view theory, Supply chain transparency, Veritable driver.*

INTRODUCTION

The supply chain has become longer, more extensive, dispersed, and complicated (Kashmanian, 2017). Consequently, there is a necessity for transparency in the supply chain, since transparency enables members of the supply chain to trace products to confirm accuracy. With low transparency within the supply chain, a firm is not capable of knowing the risks and achieving sustainability purposes (The Sustainability Consortium, 2016). The absence of transparency is a critical obstacle to promoting the supply chain's sustainability (Laurell, 2014). Moreover, Casey and Wong (2017) discussed that the scarcity of transparency is one of the causes of the lack of trust in sharing knowledge among supply chain members. Zhu *et al.* (2018) revealed that applying possible technologies can enhance the capability to do supply analytics, which provides improvements in transparency. Therefore, leveraging the cloud can significantly improve supply chain transparency.

Leveraging the cloud cannot be sufficiently understood as an unconnected phenomenon in the IT market, but rather as a core ingredient of a larger transformation of the IT industry that impacts the entire IT ecosystem. Voas and Zhang (2009) noted that, cloud computing has evolved from the previous computing paradigms like PCs, networked computing, the internet and grid computing. However, the concept of cloud computing and its configurations are still evolving. This is manifest from the much discussion in industry as to what cloud computing actually connotes (Sriram & Khajeh-Hosseini, 2010).

It is important to note that, in today's rapidly evolving business landscape, sustaining competitive advantage requires a bold technique to integrate cutting-edge technologies into organizational processes, and this drive

for innovation has led businesses to explore and adopt advanced technologies to enhance their operations and maintain their competitive edge (Olaniyi, Okunleye & Olabanji, 2023; Mackita, Soo-Young & Tae-Young, 2023). One prominent avenue of technological advancement that has gained significant traction is cloud computing, a paradigm shift incorporating virtualization and diverse computing models to deliver an array of services, ushering in transformative changes across the IT industry via the power of the Internet (Haris & Khan, 2018). Integrating emerging technologies into an organization's process redesign has proven to be an effective and beneficial strategy for securing a competitive advantage (Olaniyi, Olaoye & Okunleye, 2023).

Cloud computing was pioneered by several firms, including Amazon and Salesforce.com, which provided on-demand IT and business services over the Internet. The term "cloud computing" was first exposed to public media by Google in 2006 to refer to a business model in which data service and architecture reside in remote servers (Bogatin, 2006). Cloud computing has evolved and grown as a technology of enormous possibility, allowing organizations to streamline operations, optimize resource utilization, and foster innovation (Olaniyi & Omubo, 2023).

A widely-cited definition of cloud computing was proposed by the United States National Institute of Standards and Technology as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Mell & Grance, 2011:2). Cloud computing is arguably one of the most important technological shifts within the last decade (Wang, Rashid, & Chuang, 2011). Cloud computing represents a fundamental change in the way IT services are invented, developed, deployed, scaled, updated, maintained and paid for (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011). The promise of cloud computing expressed as cloud desires (Venters & Whitley, 2012) and cloud capabilities (Lyer & Henderson, 2010) seems to have attracted lofty expectations.

Due to these expectations, leveraging the cloud has attracted considerable interest in both commercial and academic spheres (Venters & Whitley, 2012). An international study on key information technology and management issues ranked cloud computing as 2nd and 3rd in terms of top application and technology developments in 2011 and 2012 respectively (Luftman & Zadeh, 2011; Luftman *et al.,* 2012). Worldwide revenue from public IT cloud services exceeded $21.5 billion in 2010 and will reach $72.9 billion in 2015, representing a compound annual growth rate (CAGR) of 27.6% ("IDC Cloud," 2013). This rapid growth rate is over four times the projected growth for the worldwide IT market as a whole which stands at 6.7% (IDC Cloud, 2013).

In empirical studies, Dubey *et al.* (2019) disclosed that digital transformation offers transparency to a chain and consequently enhances trust among partners; Chod *et al.* (2020) demonstrated that digital transformation facilitates supply chain transparency more efficiently than outdated monitoring mechanisms. Additionally, Shin *et al.* (2020) revealed that digital transformation enhances transparency, and non-profit firms are applying digital transformation to increase donations and improve transparency. Sheel and Nath (2019) illustrated that managers agreed that digital transformation adoption aids in enhancing the reliability of transactions as well as transparency. Moreover, digital transformation provides a tamper-proof source of data retrieval and recording. Previous studies have found relative advantage as a key driver of technology adoption (Maroufkhani *et al.,* 2020; Maduku *et al.,* 2016). Wong *et al.* (2020) confirmed the significant influence of relative advantage on blockchain adoption among SMEs.

It is appreciated that cloud computing should provide a platform for more flexibility and a platform for more innovation (Venters & Whitley, 2012). Less clear is the extent to which enterprises have the skills and motivation to exploit such opportunities (Ciborra, 1996). This study fills this research gap by proposing the influence of leveraging the cloud on supply chain transparency.

Accordingly, this study proposed the benefit of adopting cloud computing as a driver of supply chain transparency. The question of supply chain transparency in business is imperative and the contribution of cloud computing in this track cannot be overstated as it goes a long way to reinforce supply chain transparency in firms. It is possible that, cloud computing can significantly improve transparency that will enhance trust among the supply chain partners. Cloud computing can potentially allow organizations to reduce cost and increase flexibility, efficiency, and quality (Armbrust *et al.*, 2010; Aral *et al.*, 2010). To this end, some observers affirm that, cloud computing represents a paradigm shift of IT toward a utility model that resembles the supply of electricity by power plants (Carr 2009). Leveraging the cloud may therefore, be adopted to address and lift supply chain transparency. The resource-based view (RBV) theory is used to ground the study as it conceptualizes an organization or a firm as a collection of assets and competencies.

REVIEW OF RELATED LITERATURE

Theoretical Underpinning

This paper is anchored on the resource-based view theory.

Resource Based View Theory

Using RBV theory in the IS literature emerged in the beginning of 1990s (Taher, 2012). The resource-based view theory holds that, an organization can be observed as an assemblage of human and physical resources combined in an administrative context, the boundaries which are single-minded by the area of administrative coordination and authoritative communication (Peppard & Wad, 2004). This theory contends that firms possess resources, a subcategory of which enables them to achieve a competitive advantage and a further subclass that leads to superior long-term performance (Wade & Hulland, 2004). In this paper we adopt the definition provided by (Wade & Hulland, 2004) - that resources constitute assets and capabilities that are accessible and valuable in sensing and responding to market opportunities or threats. This study relies on RBV as a theoretical lens to understand the relationship between a firm's resources (Cloud Computing) and supply chain transparency and the attainment of competitive advantage.

The Concept of Cloud Computing

A joint movement toward cloud computing, indicates that different actors, particularly IT service vendors, engage different approaches to leverage and outline the development and growth of the universal cloud computing market in an extremely business manner. This study attempts to intellectualize the concept of leveraging the cloud based on archival data. The term cloud computing has been defined in different ways by analyst firms, academics, the main reason for the existence of different discernment of cloud computing is that cloud computing, distinct other technical terms, is not a new technology, but rather a new operations model that assembles a set of prevailing technologies to route business in a different mode (Zhang, Cheng & Boutaba, 2010).

Cloud computing is a disruptive technology and displays all the physical appearance of a disruptive technology (Marston *et al.,* 2011). A disruptive technology is one that shocks the standing order of things

in a specific industry (Christensen, 1997). Leveraging the cloud consents to the recollection from IT from an affluent 'capital expenditure' to a pay-as-you-go 'operating expenditure' (Venters & Whitley, 2012). Thus, the emergence of cloud computing as a form of outsourcing to deliver corporate applications to businesses by means of the internet (Gannon, 2013). The resourcefulness of cloud computing trunks from its capacity to offer users all-in-one admittance to a wide range of computing resources via reliable service providers (Hamsrad & Chaudbury, 2021). Leveraging the cloud in this study implies pulling

The Cloud Computing Taxonomies

The role of taxonomies is to provide a structure and an organization to the knowledge of a field thus aiding researchers to study the associations among concepts and, therefore, to hypothesize about these associations (Nickerson, Varshney & Muntermann, 2013). Taxonomic information is also indispensable for cloud service providers, enterprise firms, and border authorities to sense, manage, and control invasive unfamiliar mechanisms (Rimal, Choi, & Lumb, 2010). In this study, three cloud computing taxonomies are considered; cloud service models, cloud deployment models, and cloud consumption models.

Cloud Service Models

In the course of cloud computing development, different taxonomies have been developed to accommodate service layers. These layers have been variously referred to as cloud service models (Sriram & Khajeh-Hosseini, 2010), cloud business models (Yang & Hsu, 2011; Zhang *et al.,* 2010) and cloud architectural layer (Stanoevska-Slabeva & Wozniak, 2010). The earliest classification known as the SPI model (Ahson & Ilyas, 2011) graded cloud services into software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) (Yang & Hsu, 2011; Zhang *et al.,* 2010). The UCSB-IBM cloud ontology classified the cloud into five layers (Ahson & Ilyas, 2011:5). The first three layers are parallel to the SPI model and the rest of the two layers are software kernel layer and the hardware/firmware layer. The more technical ontologies embrace Jackson's UCSBIBM and Hoff's ontology (Ahson & Ilyas, 2011). Figure 1 shows the three service models:

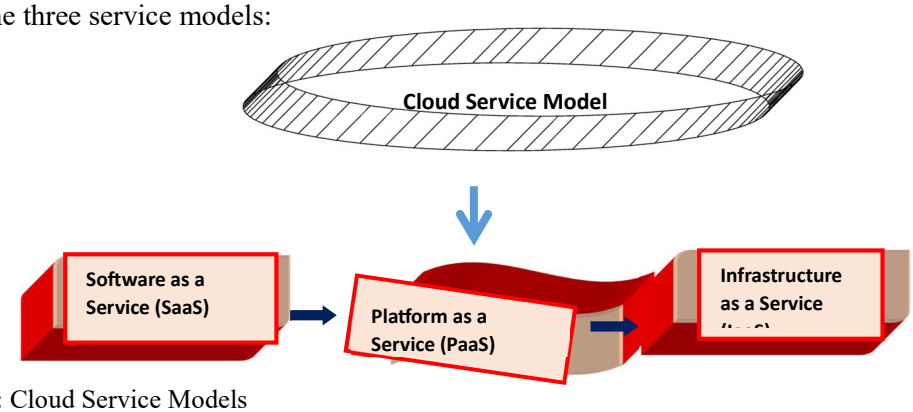

Figure 2: Cloud Service Models

Source: Yang, S., & Hsu, C. (2011). The Organizing Vision for Cloud Computing in Taiwan. *Journal of Electronic Commerce Research, 12*(4), 257-271.

The SaaS layer provides applications that run on the cloud abolishing the need to install and run the applications on the client computer (Marston *et al.,* 2011). SaaS is a software that is owned, delivered and managed remotely by one or more providers and offered on a pay-per-use mode (Stanoevska-Slabeva & Wozniak, 2010). PaaS facilitates the development and deployment of applications by providing operating system support and software development frameworks. This removes the cost and difficulty of managing the fundamental hardware and software layers. PaaS is a cloud service targeting developers. IaaS encompass computing resources like computational power (processors) and data servers that can be virtualized and

instances provided as a service. Table 1 gives a summary of service models and some of the service providers and their products.

Table 1 Cloud service Providers and their Products

Service Model	Providers	Services
SaaS	SalesForce.Com	SalesForce.com
	Google	Google Apple
PaaS	Google	GoogleAppEngine
	Microsoft	Microsoft Azure
IaaS	Amazon	Amazon EC2/S3
	Zenith	Proud

Source: Oredo, J.O. & Njihia, J. (2014). Challenges of Cloud Computing in Business: Towards New Organizational Competencies. *International Journal of Business and Social Science, 5*(3), 150-160.

Cloud Deployment Models

The cloud computing deployment models can be classified based on three features. These are physical location and distribution (Buyya, Goscinski, & Broberg, 2011); and the owner of the cloud data centre (Ristol, 2010). In this sense, a cloud can be classified as private, public or hybrid (Buyya *et al.,* 2011). Figure 3 summarizes the various cloud deployment models.

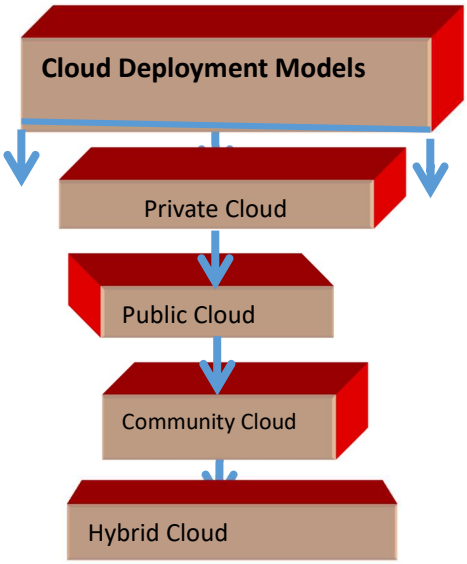

Figure 3: Cloud Computing Deployment Models

Source: Adopted from Mell and Grance (2011) and designed by the Researcher, (2024).

The cloud deployment models are service-agnostic, implying that each service model can be deployed as private and public, community or hybrid cloud.

Cloud Consumption Models

Cloud computing offers a unique way to consume computation, network, storage and software resources. At the most fundamental level, cloud computing provides flexible real time access to a shared pool of computing resources like networks, servers, storage, applications and services (Oltsik, 2010). The provision of ITaaS made available by cloud computing is possible due to some characteristics of cloud computing. Table 3 provides a summary of the characteristics of cloud computing which is conceptualized as its consumption model (Oltsik, 2010).

Table 2: Cloud Consumption Models

Characteristics	Explanations
On – demand self service	A consumer can unilaterally provision computing capabilities such as server time and network storage as needed. This provisioning is automated.
Broad Network access	Capabilities are available over the network and are accessed through the internet by use of different devices.
Resource pooling	The provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand.
Rapid elasticity	Capabilities can be rapidly and elastically provisioned, in some cases automatically, to quickly scale out and then rapidly released to quickly scale in.
Measured service	Resource usage can be monitored, controlled, and reported providing transparency for both the provider and consumer of the utilized service

Source: Adapted from Mell, P., & Grance, T. (2011). The NIST Definition of Cloud Computing (Draft). NIST

The Concept of Supply Chain Transparency

Supply chain transparency is the degree to which all stakeholders contained by the supply chain have access to and a common understanding of product-related information (Trienekens *et al.*, 2012). Supply chain transparency is the degree to which supply chain members can track existing and past activities of products in the whole chain (Dubey, Gunasekaran, *et al,* (2020). Transparency increases the visibility of downstream and upstream procedures and reduces the complexity of the supply chain processes (Brandon-Jones *et al.,* 2014). Business procedures, as well as purchasing, production, retailing, and logistics, must be aligned externally and internally throughout the supply chain to achieve a competitive advantage (Whitten *et al.,* 2012). By growing supply chain transparency, firms can generate trust and gain greater supply chain visibility (Duckworth, 2018). Transparency has been established as an energizer of trust, information integration, and visibility (Dubey *et al.*, 2020).

Transparency expectations for firms have stretched to supply chains, which have led to a supply chain transparency concept (Egels-Zanden & Hansson, 2016). This in turn divulges information concerning supplier names and sustainability circumstances linked to purchasing and preparation of products. An outline for supply chain transparency according to (Gardner *et al.*, 2019) embraces six categories of information: effectiveness, impact, policy and commitment, activity, transaction, and traceability, indicating that traceability is perceived as a significant utensil in realizing transparency in the supply chain (Fraser *et al.,* 2020). The act of growing supply chain efficiency, supply chain visibility is capable of advancing internal stakeholders' performance with respect to operational, social, and environmental system of measurement (Dubey *et al.,* 2020; Tang & Sodhi, 2019). External stakeholders benefit from supply chain visibility, since the shaping of trust and compliance with regulations is supported by revealing the supply chain information publicly (Biktimirov & Afego, 2021; Smit *et al.,* 2020). The supply chain grows based on the resources and competencies that the firm embraces to create commercial worth (Barney, 1991). To attain the ideal resources in sustainability, organizations should handle the supply chain magnitudes such as environmental, social, and economic sustainability with the support of Industry 4.0 enabled-technologies, automation, and data exchange structures (Sarkis, 2021). It is thus crystal clear that, the appropriateness of espousal of the resource-based view (RBV) enables cloud computing adoption power a transparent and maintainable supply chain to achieve competitive advantage of a firm.

Empirical Review

Saratchandra and Shrestha (2022) examined the impact of cloud-based KM systems (C-KMS) on the five KM processes: knowledge acquisition, creation, storage, sharing and usage in small and medium sized enterprise (SMEs) by means of a systematic literature review. The study explored 133 journal articles and 24 conference papers with in the period 2010 to 2021 to ascertain the role of cloud computing in KM for SMEs, and found that, many empirical investigations on KM processes and tools in SMEs exist; yet, only few studies reveal how the entire scope of KM processes can espouse cloud computing in SMEs. The study concluded that, SMEs are unproductive at KM with restricted IS intervention.

Koltyukov (2020) investigated the probable influence of future cloud computing inclinations on business, with respect to specialists in the area, by means of a qualitative approach that consist of literature review and nine semi-structured interviews. The study found that, 5G networks will empower the advent of the Edge-CoT architecture that will subsequently energize the improved application of Artificial Intelligence/Machine Learning (AI/ML) and Robotics. The mixture of Edge-CoT, Robotics and AI/ML activates the growth of Smart Cities and Industry 4.0. Instantaneously, Cloud alone will profit of improved connectivity and will be the favorite business architecture likening to Edge CoT.

Ikegwuru and Esi-Ubani (2019) studied the effects of interorganizational trust on the influence of cloud computing on supply chain performance of retail petroleum marketing firms in Rivers State using a survey questionnaire administered on 202 management staff of 55 retail petroleum marketing firms in Rivers State. The stepwise regression was engaged for data analysis and the results confirmed that, interorganizational trust significantly moderates the relationship between cloud computing and supply chain performance.

Ikegwuru and Harcourt (2018) examined the impact of cloud computing service adoption on supply chain performance of retail petroleum marketing firms in Rivers State. Data were gathered by means of a questionnaire survey, and the multiple regression statistics was employed for analysis. It was found that,

cloud computing service adoption has a very strong, significant and positive influence on supply chain performance.

Chen, Chuang and Nakatani (2016) studied the benefits of cloud computing supposed by adopters and examine the role of moderating factors such as size and value-chain activities on the relationship between the type of cloud computing and the perceived benefit (cost reduction, improved capability and enhanced scalability). The study used a questionnaire anchored on a 5-point Likert scale which was administered on businesses of different sizes in Taiwan. The results demonstrate that the perceived benefit of cloud computing differs contingent on the type of cloud computing, the value chain activity where cloud computing is positioned, and the business size. It was also found that, businesses benefit more in enhanced scalability than in cost reduction and increased business capability. After adopting cloud computing, businesses gain more capability in support activities than in primary activities. Nevertheless, there is no significant difference in composite benefit among Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). Besides, there is marginally significant interaction effect between the types of cloud computing and the business size.

Trevor (2016) examined the impact of cloud computing on information technology service providers' business models by means of interpretive multi-method case study research approach containing numerous phases. Phase one combined fifteen field study interviews. Phase two covered a focus group session embracing a total of twenty research participants. Mutually, these exploratory research phases helped with the development of some research questions which were afterward investigated all through phase three. This concluding explanatory research phase merged twenty interviews' crossways two business model mature large information technology service provider organizations. The study illustrated that, cloud computing has given rise to a significant transformation of information technology service providers' existing business models, and specific inhibitors were pointers which negatively influence information technology service providers' abilities to leverage cloud-enabled business model benefits.

Yazan (2013) investigated the factors affecting cloud computing adoption among SMEs in the North East of England using qualitative and quantitative research methodology. The regression analysis and content analysis were used for data analysis, and the study found that among the factors studied, relative advantage, uncertainty, innovativeness, and external computing support were discovered to have significant influence on whether SMEs should adopt cloud computing.

Chen and Wu (2011) examined factors affecting the adoption of cloud computing in the high-tech industry in Taiwan. The study examined eight factors (relative advantage, complexity, compatibility, top management support, firm size, technology readiness, competitive pressure, and trading partner pressure), and a questionnaire-based survey was engaged to assemble data from 111 firms in the high-tech industry in Taiwan. The logistic regression analysis was used to test the stated hypotheses, and the findings disclosed that, relative advantage, top management support, firm size, competitive pressure, and trading partner pressure features have a significant influence on the adoption of cloud computing.

Based on the empirical literature review, the study designed the following conceptual framework:

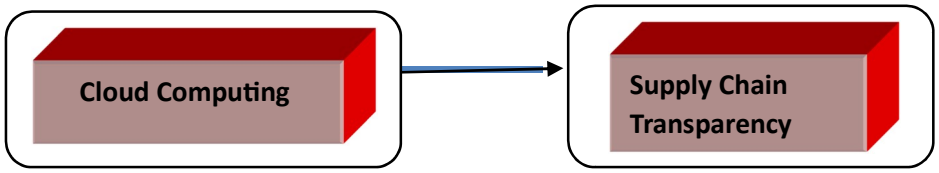

Figure 4: Conceptual framework of the relationship between Cloud Computing and Supply Chain Transparency.

Sources: Designed by the Researchers, 2024.

THEORETICAL FINDINGS

This study analyzed the volume research literature on cloud computing and supply chain transparency published in academic journals. Through the analysis of the empirical literature, the study revealed the research status, problems and main results of cloud computing and supply chain transparency in the past decade, which can be used as a reference for researchers and businesses to promote the research on cloud computing and supply chain transparency. The following findings were made noticeable:

1. Cloud alone will benefit improved connectivity and will be the favorite business architecture.

2. Interorganizational trust significantly moderates the relationship between cloud computing and supply chain performance.

3. Cloud computing service adoption has a very strong, significant and positive influence on supply chain performance.

4. The perceived benefit of cloud computing differs contingent on the type of cloud computing, the value chain activity where cloud computing is positioned, and the business size.

5. After adopting cloud computing, businesses gain more capability in support activities than in primary activities.

6. There is marginally significant interaction effect between the types of cloud computing and the business size.

8. Cloud computing has given rise to a significant transformation of information technology service providers' existing business models.

9. Specific inhibitors were identified which negatively impact information technology service providers' abilities to leverage cloud- $H0_2$ 1 business model benefits

10. Relative advantage, uncertainty, innovativeness, and external computing support were revealed to have significant influence on whether SMEs should adopt cloud computing.

11. Relative advantage, top management support, firm size, competitive pressure, and trading partner pressure characteristics have a significant influence on the adoption of cloud computing.

CONCLUSION

This study examined cloud computing as a veritable driver of supply chain transparency. Drawing on RBV theory and the literature on cloud computing and supply chain transparency, the study found that, cloud computing offers transparency to a supply chain and consequently enhances trust among partners, cloud computing facilitates supply chain transparency more efficiently than outmoded monitoring mechanisms, cloud computing enhances transparency, and non-profit firms are applying cloud computing to increase donations and improve transparency, cloud computing adoption helps in enhancing the reliability of transactions as well as transparency, cloud computing delivers a tamper-proof source of data retrieval and recording.

Cloud computing when considered as a driver of supply chain transparency, can help companies develop their businesses well, improve the level of products services in the entire level of supply chains, achieve competitive values in the market, and always stay ahead of the changing industries, cutting down unnecessary expenses, and assessing supply chain transparency. The paper can bring to a close that most businesses now realize the positive potential of cloud computing in their supply chains. The study therefore concludes that, cloud computing is a veritable driver of supply chain transparency.

References

Ahson, S., & Ilyas, M. (2011). *Cloud computing and software services: theory and techniques.* Boca Raton, FL: CRC Press.

Aral, A., Sundararajan, A., & Xin, M. (2010). Developing Competitive Advantage in the Cloud: Qualitative Findings. Harvard Business Review Blogs, http://blogs.hbr.org/research/2010/12/developingcompetitive-advanta.html, 2010.

Armbrust, M., Fox, A., Griffith, R., Joseph, A.D. Katz, R., Konwinski, A., Lee, G., Patterson, D., Rabkin, A., Stoica, I. & Zaharia, M. (2010). A view of cloud computing. *Communications of the ACM, 53*(4), 50-58.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99- 120.

Biktimirov, E. N., & Afego, P. N. (2021). Do Investors Value Environmental Sustainability? Evidence from the FTSE Environmental Opportunities 100 Index", Finance Research Letters, 102112. doi:https://doi.org/10.1016/j.frl.2021.102112

Bogatin, D. (2006). Google CEO's New Paradigm: Cloud Computing and Advertising Go Hand-in-hand', ZDNet, http://www.zdnet.com/blog/micro-markets/google- ceos-new-paradigm-cloud-computing-andadvertising-go-hand-in-hand/369, 2006

Buyya, R., Goscinski, A., & Broberg, J. (2011). *Introduction to Cloud Computing. In Cloud computing: principles and paradigms.* Hoboken, N.J.: Wiley.

Capron, L., & Hulland, J. (1999). Redeployment of brands, sales forces, and general marketing management expertise following horizontal acquisitions: A resource- based view. *Journal of Marketing, 63*(2), 41.

Carr, N. (2009). *The Big Switch: Rewiring the World, from Edison to Google*. W. W. Norton & Company.

Chen, C.L.Y., & Wu, M. (2011). Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems, 111*(7), 1006-1023.

Chen, T., Chuang, T., & Nakatani, K. (2016). The perceived business benefit of cloud computing: An exploratory study. *Journal of International Technology and Information Management, 25*(4), 101-122.

Ciborra, C. (1996). The platform organization: Recombining strategies, structures, and surprises. *Organization Science, 7*(2), 103-118.

Dubey, R., & Gunasekaran, A. (2016). The sustainable humanitarian supply chain design: Agility, adaptability and alignment. *International Journal of Logistics Research Applications, 19*(1), 62-82.

Egels-Zanden, N., & Hansson, N. (2016). Supply chain transparency as a consumer or corporate tool: The case of Nudie Jeans Co. *Journal of Consumer Policy, 39* (4), 377-395.

Fraser, I.J., Müller, M., & Schwarzkopf, J (2020). Transparency for multi-tier sustainable supply chain management: A case study of a multi-tier transparency approach for SSCM in the automotive industry. *Sustainability, 12*, 1814.

Gannon, B. (2013). Outsiders: an exploratory history of IS in corporations. *Journal of Information Technology, 28*(1), 50-62.

Gardner, T. A., Benzie, M., Borner, J., Dawkins, E., Fick, S., Garrett, R., & Wolvekamp, P. (2019). Transparency and sustainability in global commodity supply chains", *World Development, 121*(1), 163-177.

Grant, R. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review, 33*(1), 114-135.

Hansraj, T.P.K., & Chaudhary, A. (2021). Security at virtualization level in cloud computing. 2021 9th international conference on reliability, Infocom Technologies and Optimization. 2021,1-5.

Harris, M., & Khan, R.Z. (2018). A systematic review on cloud computing. *International Journal of Computer Sciences and Engineering,* 632-639.

Hofstede, G.J., Schepers, H., Spaans-Dijkstra,L., Trienekens, J., & Beulen, A. (2004). Hide or confide? The dilemma of transparency. Reed Business Information BV.

Ikegwuru, M., & Esi-Ubani, C.O., (2019). Effects of interorganizational trust on the influence of cloud computing on supply chain performance. *RSU Journal of Strategic and Internet Business, 4*(1), 456-470.

Ikegwuru, M., & Harcourt, H, (2018). Understanding the impact of cloud computing service adoption on supply chain performance: An empirical study. *RSU Journal of Strategic and Internet Business 3*(2), 182-204.

Karg, K.R. (1990). *Transparenz in Organisationenaus der SichtihrerMitglieder*. Ph.D. thesis, University of Erlangen-Nuremberg.

Koltyukov, V. (2020). *Next Generation Cloud Computing and its impact on Business.* Master Dissertation. Iscte Business School.

Krone, P., (2003). HorizontaleMarkttransparenzimZeitaltereinerInformationsgesellschaft: EinekartellrechtlicheAnalyseunterbesondererBerücksichtigungder Marktmechanismen des elektronischenHandels. Hamburg: Kovac.

Luftman, J., & Zadeh, H. S. (2011). Key information technology and management issues 2010–11: An international study. *Journal of Information Technology, 26*(3), 193- 204.

Luftman, J., Zadeh, H. S., Derksen, B., Santana, M., Rigoni, E. H., & Huang, Z. (David). (2012). Key information technology and management issues 2011–2012: An international study. *Journal of Information Technology, 27*(3), 198-212.

Lyer, B., & Henderson, J. (2010). Preparing for the future: understanding the seven capabilities of cloud computing. *MIS Quarterly Executive, 9*(2), 117-131.

Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud computing: The business perspective. *Decision Support Systems, 51*(1), 176-189.

Moore, M., & Ryall, J. (2011). Rebuilding Japan: Cloud May Have Silver Lining for Fujitsu, TheTelegraph,http://www.telegraph.co.uk/finance/globalbusiness/8466155/Rebuilding-Japan-Cloud-may-havesilver-lining-for-Fujitsu.html, 2011.

Nickerson, R. C., Varshney, U., & Muntermann, J. (2013). A method for taxonomy development and its application in infor mation systems. *European Journal of Information Systems, 22*(3), 336-359.

Olaniyi OO, Okunleye OJ, Olabanji SO. (2023). Advancing data-driven decision- making in smart cities through big data analytics: A comprehensive review of existing literature. *Current Journal of Applied Science and Technology, 42*(25), 10-18.

Olaniyi, O.O., Olaoye, O.O., Okunleye, O.J., (2023). Effects of Information Governance (IG) on profitability in the Nigerian banking sector. *Asian Journal of Economics, Business and Accounting, 23*(18),22-35.

Olaniyi, O.O., & Omubo, D.S. (2023). The importance of COSO framework compliance in information technology auditing and enterprise resource management. The *International Journal of Innovative Research & Development*. Available:https://doi.org/10.24940/ijird/202 3/v12/i5/MAY23001

Oltsik, J. (2010). *What's Needed for Cloud Computing?* ESG Inc.

Peppard, J., & Ward, J. (2004). Beyond strategic information systems: towards an IS capability. *The Journal of Strategic Information Systems, 13*(2), 167-194.

Prahalad, C., & Hamel, G. (1990). The Core Competence of the Corporation. *Harvard Business Review, 68*(3), 79-92.

Rimal, B. P., Choi, E., & Lumb, I. (2010). A Taxonomy, Survey, and Issues of Cloud Computing Ecosystems. In N. Antonopoulos & L. Gillam (Eds.), Cloud Computing, Springer London. 21-46.

Saratchandra, M., & Shrestha, A. (2022). The role of cloud computing in knowledge management for small and medium enterprises: A systematic literature review, *Journal of Knowledge Management*, 26(10), 2668-2698.

Sarkis, J. (2021). Supply chain sustainability: learning from the COVID-19 pandemic. *International Journal of Operations & Production Management, 41*(1), 63- 73.

Sriram, I., & Khajeh-Hosseini, A. (2010). Research Agenda in Cloud Technologies (arXiv e-print No. 1001.3259). Retrieved from http://arxiv.org/abs/1001.3259

Stanoevska-Slabeva, K., & Wozniak, T. (2010). Cloud Basics: An Introduction to Cloud Computing. In K. Stanoevska-Slabeva, T. Wozniak, & S. Ristol (Eds.), Grid and Cloud Computing. Springer Berlin Heidelberg. 47-61.

Stevenson, M., & Spring, M. (2007). Flexibility from a supply chain perspective: Definition and review. *International Journal of Operations Production Management, 27* (7), 685-713.

Trevor, C. (2016). *The Impact of Cloud Computing on IT Service Providers' Business Models*. Ph.D. Research Dissertation, National University of Ireland, Galway.

Trienekens, J. H., Wognum, P. M., Beulens, A. J. M., & van der Vorst, J. G. A. J. (2012), Transparency in complex dynamic food supply chains. *Advanced Engineering Informatics, 26* (1), 55-65

Tuominen, M., Rajala, A., & Moller, K. (2004). How does adaptability drive firm innovativeness? *Journal of Business Research, 57*(5), 495-506.

Vance, A. (2011). The Cloud: Battle of the Tech Titans. *Bloomberg Business week*, http://www.businessweek.com/magazine/content/11_11/b4219052599182.htm.

Venters, W., & Whitley, E. A. (2012). A critical review of cloud computing: researching desires and realities. *Journal of Information Technology, 27*(3), 179-197.

Voas, J., & Zhang, J. (2009). Cloud Computing: New Wine or Just a New Bottle? *IT Professional, 11*(2), 15-17.

Wade, M., & Hulland, J. (2004). Review: the resource-based view and information systems research: review, extension, and suggestions for future research. *MIS Q., 28*(1), 107-142.

Wang, W., Rashid, A., & Chuang, H.M. (2011). Toward the trend of cloud computing. *Journal of Electronic Commerce Research, 12*(4), 238-242.

Winterstein, H. (1996). Mitarbeiterinformation - Informationsmaßnahmen und erlebteTransparenz in Organisationen. Munich and Mering: Hampp.

Wong, C. Y., Skipworth, H., Godsell, J., & Achimugu, N. (2012). Towards a theory of supply chain alignment enablers: A systematic literature review. *Supply Chain Management: An International Journal, 17*(4), 419-437.

Yang, S., & Hsu, C. (2011). The Organizing Vision for Cloud Computing in Taiwan. *Journal of Electronic Commerce Research, 12*(4), 257-271.

Yazan, Y. A. (2013). An empirical investigation of factors affecting cloud computing adoption among SMEs in the North East of England.

Zhang, Q., Cheng, L., & Boutaba, R. (2010). Cloud computing: state-of-the-art and research challenges. *Journal of Internet Services and Applications, 1*(1), 7-18.