



# A Study of Role and Impact of Cloud Computing in Supply Chain Management

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## ABSTRACT

*The purpose of this review is to examine the collaborative benefits and social outcomes that associations derive from strong collaborative relationships. Competition between businesses such as multi-connected supply chains has increased the dependence between business connections and has become a key process for partnerships. the cloud could operate with coordinated efforts across the branch network, although there are conflicting prospects for cloud profitability. This concentrate also assesses the impact that distributed IT innovations have on collaborative utility and social outcomes in small and large partnerships.*

**KEYWORDS:** Logistics, Supply Chain, Cloud Computing, Collaborative Relationships.

## 1. INTRODUCTION

Associations within an existing network enterprise are gradually using innovations to support them in a common effort. Interest in data innovation (IT) reinforces their ruthless commitment to improving collaboration [1]. Cooperation is characterized by “the ability to work across hierarchical boundaries to create and monitor new value chains in order to more easily solve customer problems”. [2] Computing is seen as an innovation used to receive, process and send data in a more sustainable direction. It could be argued that an effective executive inventory network requires an undeniable level of collaboration that is regularly achieved using various types of IT tools. Innovation must be aligned with the objectives of the company. to have efficient business operations. As already mentioned, [3], the associations which have joined their framework have broadened their cooperation and

worked on the financial representation of each accomplice.

## OBJECTIVES

- The impact of cloud computing on supply chain management.
- Explore the importance of cloud computing in supply chain management.

## 2. RELATED WORK

Synergies from shared experience and resources, as well as business benefits (i.e., lower product costs, faster time to market, better quality, advanced technology or improved service / better delivery) of commercial relations have prioritized management relations [4]. Businesses can benefit from business-to-business relationships and maintain effective business-to-business relationships [5]. To help the reader understand the following key concepts and

discussions, Table 3 contains definitions from the following literature.

According to the National Institute of Standards and Technology (NIST), cloud computing is defined as "a model for enabling ubiquitous, cost-effective, on-demand network access to a shared set of configurable computing resources (e.g., networks, servers, storage). Applications and Services) that can be quickly delivered and published with minimal administration or interaction with the service provider." [6]

According to [7]), the cloud consists of four layers (Figure 1):

- i. *Hardware/data center*- the physical resources of the cloud, such as physical servers, routers, switches, electricity.
- ii. *Infrastructure*- Create a collection of compute and storage resources using virtualization technologies.
- iii. *Platform*- operating systems and application frameworks.
- iv. *Applications*- Real Cloud applications capable of reducing performance, availability and operating costs.

In addition, IT users have access to three types of services:

- i. Software as a service (SaaS) enables users to run on-demand online applications accessible through the Internet (e.g., warehouse, systems transport management, BIRetail, BISCIM, Salesforce). com, Rackspace and SAP Business by Design).
- ii. Infrastructure as a Service (IaaS) Allows users to run any application of their choice on hardware in the cloud (e.g., AmazonEC2, GoGrid, and Flexiscale).

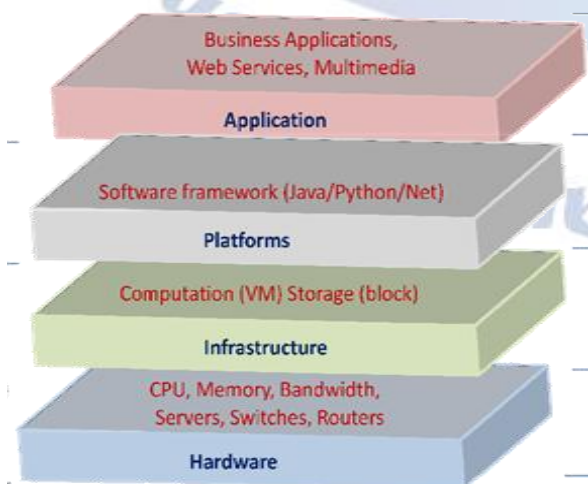


Figure 1– Four Layers of Cloud[7]

The fundamental factors of collaboration, trust, customer service and the use of technology have enabled a transformation in the mindset and behavior of business administrators [8]. [9] Argument that complementary resources and capabilities are used to enable value creation by combining enterprise resources with the help of IT [10]. A positive managerial attitude, open to the exchange of information, processes, behaviors and appropriate actions that improve collaboration and use of information, technology to provide external interconnectivity and internal connections are elements necessary to obtain the expected benefits of the relationship [8].

### 3. DATA COLLECTION

The research objectives examine whether the impact of cloud computing on the association between collaborative relationships and relationship outcomes is stronger for small businesses than for large enterprises. Organizations large and small are demonstrating that collaborative relationships have a big impact on the benefits of collaboration and the results of relationships. The use of cloud computing shows significant differences only for small organizations in the results of collaborative advantage. This result somewhat supports hypothesis 4b according to which for small companies, the impact of cloud computing on the association between the collaborative relationship and the collaborative advantage will be stronger than for large companies.

### 4. DATA ANALYSIS

Table 1. Industry Type

Respondents were from manufacturing and textiles (10%), pharmaceuticals, chemicals and electronics (9%), retail, consumer goods and food and beverages (23%), service industry (24%) and more (34%).

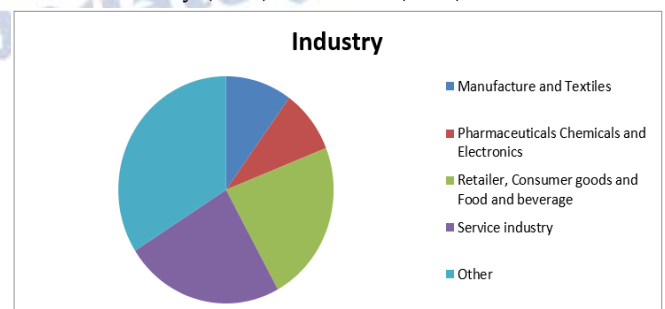
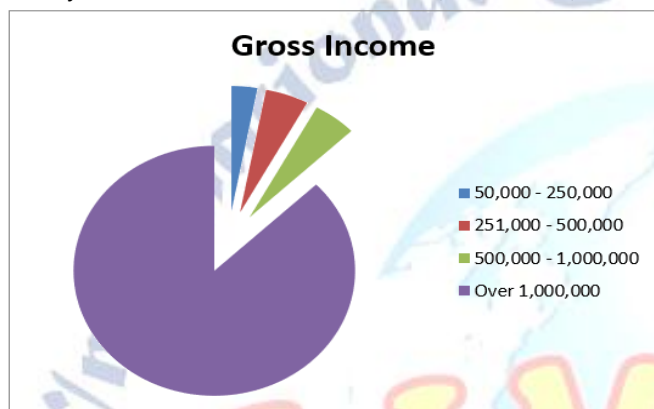


Table 2. Firm's Gross Income

| Gross Income        | Number of respondents | Percent of respondents |
|---------------------|-----------------------|------------------------|
| 50,000 - 250,000    | 3                     | 3%                     |
| 251,000 - 500,000   | 5                     | 5%                     |
| 500,000 - 1,000,000 | 5                     | 5%                     |
| Over 1,000,000      | 91                    | 88%                    |

Eighty eight percent of these companies had gross sales of more than \$ 1 million, and all of the companies surveyed earned more than \$ 50,000 (see Table 2).



54% of respondents belonged to organizations with 100 or more employees; the remaining 46% of those questioned belong to companies with less than 100 employees (see table 17). Dimensional standards have been set for types of activities or economic sectors. The SBA sizing standards, expressed in number of employees, represent 100 or fewer employees in small businesses for the industries participating in this study.

Table 3. Number of Employees

| Number of Employees | Number of respondents | Percent of respondents |
|---------------------|-----------------------|------------------------|
| 1-100 employees     | 48                    | 46%                    |
| 101+ employees      | 56                    | 54%                    |

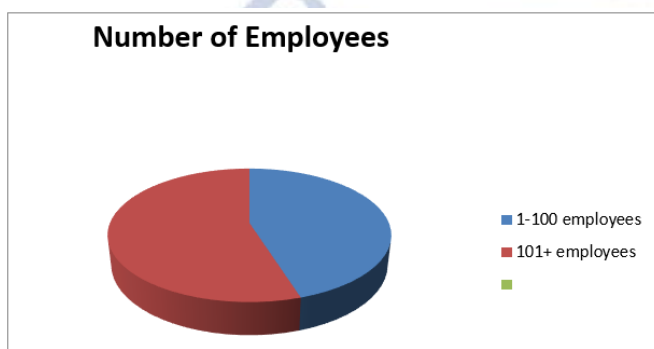


Table 3 shows that the logistics professionals who participated in the survey have held managerial positions in their organization (38%). Manager (31%),

supervisor (3), other positions (see table 18), such as vice president (16%), president (6%), owner (1%), founder (1%), president of (1%)), logistics specialist (1%), CEO (1%), purchasing specialist (1%) and manager (1%).

Table 4. Respondent Position in the Firm

| Position  | Percent of respondents |
|---|------------------------|
| Director  | 38%                    |
| Manager   | 31%                    |
| Supervisor  | 3%                     |
| Other, Vice-president, President, Owner, Founder, Chairman, Logistics specialist, CEO, Sourcing specialist, and Executive | 29%                    |

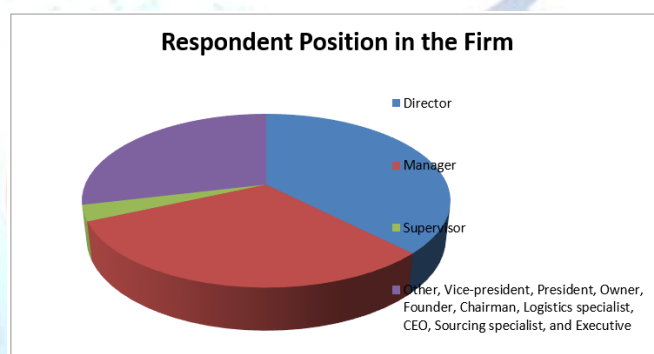
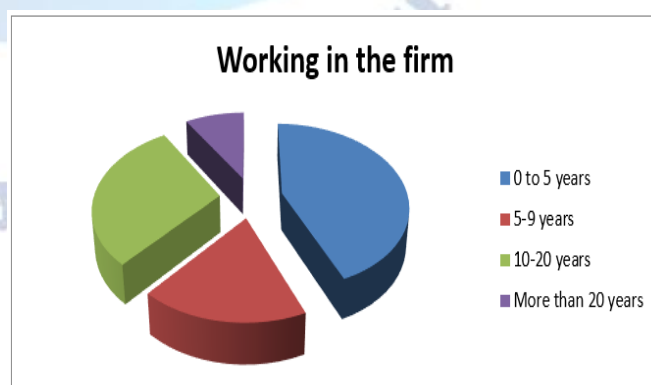


Table 5. Number of respondents by years worked in the firm and years of industry experience

| Number of years industry experience | Working in the firm | Experience in the industry |
|-------------------------------------|---------------------|----------------------------|
|                                     | 44                  | 2                          |
|                                     | 18                  | 6                          |
|                                     | 30                  | 31                         |
|                                     | 9                   | 61                         |





Respondents with experience in the company 0 to 5 years (44%), 5 to 9 (18%), 10 to 20 years (30%), over 20 years (9%). [11]

The meeting lasted 15 days. To assess the tendency not to react, a mean value test was performed on two examples among those who responded early and late.

Associations large and small are beginning to see the benefits of using distributed computing. The constructive result in the relationship between cooperative ties and cooperative profit in small associations, as well as the constructive result in the relationship between cooperative ties and social outcomes in large enterprises reveal the benefits of implementing the innovation. [12] The novelty of innovation and the reluctance of organizations to make contradictory progress have been taken into account in previous research and may influence the consequences of this review.

## 5. FUTURE SCOPE AND CONCLUSION

Cloud computing technology lends itself more directly to small businesses, reducing expenses for small businesses to assess the concentrated business audit. Most of the opportunities accessible simply through large partnerships. obstacles and difficulties for small associations which should have the capacity to coordinate and supervise administrations obtained remotely in a feasible way to structure various providers and federate administrations in their IT structure. Currently, cloud contributions have a particular way on how customers collaborate, prohibiting customers from browsing one vendor at a time, and integrating cloud administrations with the legacy framework of associations. A previous review suggests that a coordinated effort with a colleague can help small associations share corresponding resources to further develop their tasks, even though small associations may not have formally adopted the design of the support sites. which would have made them more adaptable, expandable and versatile [13].

## REFERENCES

- [1] C. R. Allred, S. E. Fawcett, C. Wallin and G. M. Magnan, A dynamic collaboration capability as a source of competitive advantage, In: Decision Sciences, 42(1), 2011, pp. 129-161.
- [2] J. C. Anderson and J. A. Narus, "A model of distributor firm and manufacturer firm working partnerships", in Journal of Marketing, 54(1), 1990, pp. 42-58.
- [3] <https://findanexpert.unimelb.edu.au/scholarlywork/1403143-creating-competitive-advantage-with-interorganizational-information-systems>
- [4] M. Armbrust, A. Fox, R. Griffith, A. D. Joseph, R. Katz and A. Konwinski, A View of Cloud Computing. Communications of the ACM, 53(4), 2010, pp. 50-58.
- [5] J. S. Armstrong and T. S. Overton. (1977). Estimating Nonresponse Bias in Mail Surveys. Journal of Marketing Research, 14(3), 1977, pp. 396-402.
- [6] <https://csrc.nist.gov/publications/detail/sp/800-145/final>
- [7] "A Heuristic Approach for Service Allocation in Cloud Computing", in International Journal of Cloud Applications and Computing 7(4), 2017, pp. 60-74 DOI:10.4018/IJCAC.2017100104
- [8] E. Spekman and R. Carraway Making the transition to collaborative buyer-seller relationships, In: An emerging framework Industrial Marketing Management, 2006, pp. 10-19
- [9] H. Jeffrey and Harbir Singh, "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage", In: The Academy of Management Review Vol. 23, No. 4, 1998, pp. 660-679.
- [10] R. Klein, Interfirm Strategic Information Flows in Logistics Supply Chain Relationships, University Follow Arun Rai, Georgia State University Affiliated Journals Vol. 33. Iss. 4, 2009.
- [11] J. Badaracco, The knowledge link: How firms compete through strategic alliances, In: Harvard Business Press, 1991.