

# A SaaS-Based SCM Solution for New Zealand Small and Medium-Sized Enterprises in Retail-Related Sectors

Susumu Mahara  
Eastern Institute of Technology,  
Napier, New Zealand  
Mahara\_s@hotmail.com

Michael Verhaart  
(Supervisor)  
Eastern Institute of Technology,  
Napier, New Zealand  
mverhaart@eit.ac.nz

## ABSTRACT

Small and medium-sized enterprises (SMEs) are trying a variety of attempts to survive in the current fierce competitive economic environment. The purpose of this research is to investigate SaaS-based SCM solutions which have importance for retail-related SMEs in New Zealand. SaaS-based supply chain management benefits SMEs in supply chain with its high performance and low cost. This report demonstrates theoretically the relationship between the SaaS-based SCM technology and retail-related SMEs. A case study of SaaS-based SCM system is utilized as a qualitative method to give a proof of the advantage of SMEs in a supply chain including retailers, wholesalers, suppliers, manufacturers, warehouses as well as logistics. The contribution is to intensify New Zealand SMEs in retail-related supply chains to compete in the global market with SaaS-based SCM business strategy.

**Keywords:** Supply chain management, Software as a Service, Cloud, Small and medium-sized enterprises, SME, Retailer, Supplier, New Zealand

## 1. INTRODUCTION

Small and medium-sized companies have delayed the adoption of supply chain management solutions because traditional SCM systems have a high wall of capital investment. Many SMEs are lack of budget and IT resources to retain and maintain a complicate enterprise system. The relationship of retail and supply plays an important role in the retail industry. Suppliers not only compete conventionally in commodity prices and services to retailers, but also are expected to engage the maximum sales and minimum inventories for retailers. According to New Zealand Ministry of Economic Development (2011) statistics, 97% of all enterprises are SMEs. Although they run small business, they are an important economic part and contribute significantly 40 % of the economy's total output on a value-added basis.

Cloud computing is a convenient and effective on-demand model interacting through network supplied by service provider access to a shared pool of computing resources which can minimum management cost (Mell & Grance, 2011).

The solution based on SaaS models is becoming widely available and small vendors can use necessary technologies to meet the needs of customers. Typically, end users use a part of whole functions and do not need to purchase a software package or entire infrastructure. As a result, it is possible for small enterprises to increase the agility of business and respond flexibly in the changes of business environment.

## 2. LITERATURE REVIEW

Xu et al. (2007) found that SMEs often have negative aspects to the use of information technology as their essentiality and economic situations in the technology investment.

Shaikh and Iyer (2014) state that in order to respond to the needs and adoption of business world by mapping the new technologies evolving to the web generation in e-business, the binding of web generation and supply chain management is related to the evolution of supply chain and e-business success.

He et al. (2009) state that the members of supply chain in SCM perform various activities and functions of the management of product, information and finance, as well as the logistics of synchronization, inventory management, ordering, decision-making, prediction, product design, etc.

Chew and Sun (2009) state that retail information is essential for the supply chain where retailers advance the business to satisfy the customers and purchase goods from the suppliers on the basis of the latest information.

## 3. RESEARCH QUESTION

The research question to be explored is "How does SaaS-based SCM solution play an important role in the enhancing effect of New Zealand SME's competitiveness in retail-related sectors?"

The motivation of this question is to inspect the situation of struggling SMEs in New Zealand, and present the impact of SaaS-based SCM technologies as an e-business strategy for SMEs.



Figure 1: Poster for SaaS SCM solution for SMEs in Retail

This poster appeared at the 8<sup>th</sup> annual conference of Computing and Information Technology Research and Education New Zealand (CITRENZ2017) and the 30<sup>th</sup> Annual Conference of the National Advisory Committee on Computing Qualifications, Napier, New Zealand, October 2-4, 2017.

#### 4. THEORETICAL PERSPECTIVES

Figure 2 illustrates how a SaaS-based SCM model works in a retail-related supply chain.

It is an important successful factor for Small companies to maintain a close relationship with the supply chain partners such as retailers, suppliers, and logistics. The members of this community cooperate to go with the aim of the risk minimization and the profit maximization utilizing emphasis of speed to grasp the real demand in the market with no time lag, shift of supply and demand adjustment function from stock buffer to information buffer, and emphasis of flow control to synchronize product flow, information flow, and finance flow.

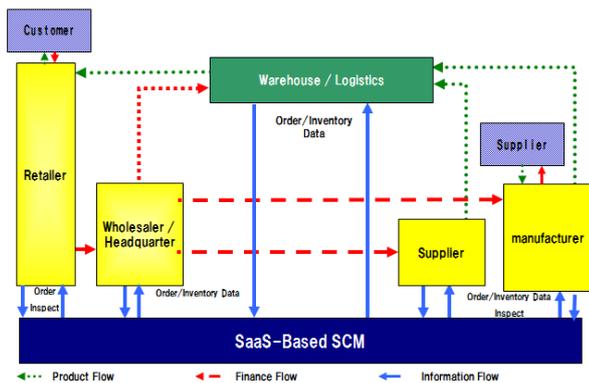


Figure 2 A SaaS-based SCM model for SMEs

The benefits of the SaaS SCM model with its cheap initial cost, short introduction period and cost amortization, include:

- Low Deployment Time
- Low Cost
- Provider Responsibility
- Scalability and Flexibility
- Access Anywhere
- System Interlock
- Strong Disaster Resilience

#### 5. METHODS

It is proposed that a qualitative research method will be adopted of case study intending to answer the research question. A SaaS-based SCM system called Net Data Centre (NDC) is a comprehensive solution of cloud technology to provide an e-business strategy of supply chain management for New Zealand SMEs.

NDC System is a SaaS-based execution SCM software joined in retailer (shop and/or headquarter), wholesaler, warehouse, manufacturer, and logistics with the flows of product,

information, and finance. The basic principal of supply chain is the same worldwide. There are many advantages to introduce SaaS-Based NDC system in New Zealand market with its actual achievement in Japan.

SaaS-Based NDC System can contribute New Zealand economy in many service industries, such as restaurants, super markets, wholesalers, agricultural product traders etc.

#### 6. ETHICAL CONSIDERATIONS

The major ethical considerations of the case study research are to protect participant's confidentiality and anonymity. Consent was obtained from all the above-mentioned items to research from the service provider using the real company's name and the limited information of the SaaS-based SCM system from their homepage as the research can help them to tap the New Zealand market.

#### 7. CONCLUSION

This proposal aims to research how SaaS-based SCM solutions play an important role for New Zealand retail-related small and medium-sized enterprises in the turbulent changes of world economic environment. This SaaS-based solution joins in all the SME members (retailer, wholesaler, warehouse, manufacture, and logistics) with the flow control to synchronize the flow of product, information, and finance.

In the conclusion, SaaS-based SCM solution plays an important role in the enhancing effect of New Zealand SME's competitiveness in retail-related sector with its cost reduction and effective inventory management.

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