Digitalization and Leap Frogging Strategy Among the Supply Chain Member: Facing GIG Economy and Why Should Logistics Players Care?

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***Abstract*— This article integrates the concept of leap frogging strategy and digitalization as a key strategy for the sustainability of logistics players in facing up with GIG economy. At present, business organization are moving towards Industry 5.0 (internet of thought) and GIG economy where the traditional way of fully relying on full time workers are no longer relevant. The world of work is changing. From organizational view, leap frogging strategy with technological advancement are significant to achieve competitive advantage to ensure the continuity of business. While from worker perspective, having technology driven talent is a must to face new business economy called as GIG economy. In other words, all workers in every industry including logistics should ensure they have technology driven talent in his/her portfolio to remain competitive in the working world. Therefore, the aim of this study is to explore the applicability of Industry 5.0 such as digitalization and mobile marketing to logistics players; to make them more visible to customer and competitor. Single case study method was adopted to study on the perspective as discussed above more in-depth. Findings from this single case study is transferable as it provides rich explanation and discussion from one of the earliest logistics company in Malaysia, with logistics experience almost five (5) decades in providing logistics services. The qualitative findings pointed out four key areas for LSP improvement. Firstly, all LSPs should go for transition process with their business model to provide them with new revenue - logistics digital business and allow them to be more visible to their customer by fully utilizing the promotion activities online. Secondly, every agreement with customer should be put into contract and it is paperless within system. Thirdly, digital payment is a must to all logistics players to practice in order for them to compete in digital era. Finally, and inevitability, to sustain in the business, logistics may move to become intelligent logistics players with carrying no asset and just focus on negotiating contracts with customers. This term refers to practising logistics players with no assets or less assets centric. In principle, the company does not own asset but able to provide logistics services (for example fleet and warehouses) by aggregating "information about assets" from people who do own them by leveraging on data. This article contributes to the logistics study by matching issue on digitalization and GIG economy in logistics sector. More work on future of logistics is needed with large sample across the globe in order to obtain more data to help the logistics players depict themselves in new economy.**

Keywords*— *Digitalization, Leap frogging strategy, GIG economy, Logistics, Supply Chain, Logistics Service Provider (LSP), Industry 4.0, Industry 5.0

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1. Introduction

In digital era, businesses worldwide faced with challenges of catching up their business activity with technological advancement to safeguard their company performance. Leap frogging strategy is introduced in business including logistics to demonstrate technology catching up activity or innovation activity. The new technological advancement started in western countries and it consist of converging technology activities such as internet of things (IOT), block chain, Hackathon, bitcoin, bootstrap, cloud computing, cognitive computing, virtual social networks and artificial intelligence. Currently, industries moving towards Industry 4.0 where the above-mentioned factor are the key forces that represent Industry 4.0. In a developed country, Industry 5.0 term is also emerged at present (Internet of Thought) to show the main component of artificial intelligence. All these innovations creates new value in supply chain activity. The value creation here not only about profit and business sustainability for each channel member, but it is also including values attached to the workers across the chain, to the community or society and the values to the nature and life style.

For many developing countries including Malaysia, they are known as latecomer country. Past study suggest that latecomer country should continuously and rapidly apply leapfrogging strategy to assure their business sustainability and compete internationally [1]. Developing countries business players should carefully plan and evaluate the opportunities of technology that could benefit and harm their company. As suggested by [2], integrating innovation in services with technology advancement will establish superior industry and enhance national competitiveness among supply chain members. In addition, [3] agreed technological catching up is a must in translating overall organizational strategy into action. Regardless the type of strategy developed for the well-being of company and employee, it should relates with technological advancement or knowledge.

In 21st century, world economy is moving towards GIG economy where the focus is on employee talent. All workers or employees must have technology knowledge for them to remain competitive in working world. Having notice the world of work is changing, being capable on cyber skills, technology and software are the key issue in GIG economy. 21st century employees are building up their profiling or portfolio currently in order to best attract and engage with short term working opportunity. Bear in mind that most organization in many industries are not fully aware about this and not doing enough to adjust and balance on the need of employee and also technology. Organization should think both strategy of technology advancement by looking at both business activity and people as resources that they have.

Since technology driven is a key positioning strategy for future success in all business organization in many industries including logistics, this study aim to study on how technological innovation would help logistics players to sustain their business activity. The rationale that logistics players become the main focus of this study is because the success of supply chain management greatly depends on logistics planning and support - logistics support activities such as keeping pace with customer demands and outperforming competitors. In fact, the value of logistics provides to business communities is by ensuring the availability of product at the right time and the right place when it is needed. Logistics refer to a systematic process that moved the product or materials from supply sides to the manufacturer and then repositioning the inventory among the different plants and distribution centres, before delivering the finished product to the customer [4]. Logistics consist of direct and reverse logistics activity. Logistics activity is not limited to transporting activity only, it is also consisting of several activities including warehousing, customer services, packaging, order processing, procurement and inventory management [4,5].

A recent report by Allied market research [6] shows that the total logistics market globally is expected to reach $USD 12,256 billion by the year 2022. From this value, $USD 12.96 billion worth of total logistics market represent the value for digital logistics market which expected to achieve in year 2019. Equally, the total logistic expenditure will continue to grow in all regions over the next few years. This is because of recognition on the use of logistics service provider (LSP) in business activity increases company competitiveness and indeed becoming vital for the future survival of companies. Hence, this justifies the focus of this study that choose logistics industry in exploring digital and technology leapfrogging strategy. The next subsection will discuss further on the innovation in

logistics services, the digitalization activity and leap frogging strategy in logistics sector.

2. Literature Review

Five Phase Transition on Logistics

Despite the product and services offered, the well-being of any company including logistics players nowadays depends on their intangible value represented by their internal resources namely technology. Logistics player and other business sector are vital to go for innovation and technological advancement. The technology here consists of the internet, technology or system used, digital system, social media and also mobile marketing [7]. From the literature, it is recognized that digitalization and mobile marketing becoming fundamental for online marketing strategies in industrial markets in current era. It happens in many industries including logistics in developed and developing country. The central discussion in this paper is the current condition of being competitive in logistics industry. From the review of literature, we could conclude that logistics study has evolved as early as 1950s with the first paper published by Paul Converse that mentioned logistics is half part of marketing activity. In 1950s to 1960s, this era is known as physical distribution era. [4] and [8] explains that in this era, inbound (physical supply) and outbound (physical distribution) were treated as two distinct functions even though the integration of these two activities is important. The evolution of logistics has been moved from physical distribution to logistics management in 1970ss and 1980s, followed by logistics management to supply chain management in year 1990s to 2010s. A study on supply chain management to logistics innovation in supply chain (Halal logistics and Halal logistics brand establishment) started in late 2000s and early 2010s where the scholars start looking at issue of logistics innovation. Some of the issue studied are Halal fourth party logistics [9], logistics branding [10,11], Halal logistics branding (Rahman et al 2018), Halal Warehouse [12,13], and yet it has been moved to digitalized logistics. The evolution of this five phase transition on logistics literature is portrayed in Figure 1 below:

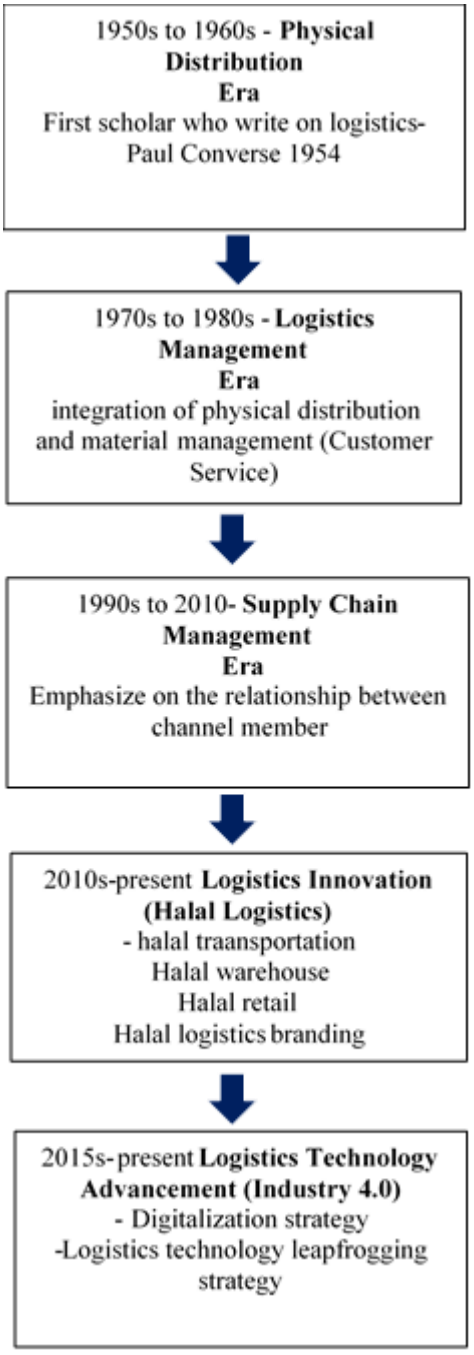

Figure 1: Five phase transition of logistics

Digitalization and Technological Advancement Strategy among Logistics Players

Competing in digital era, every organization including logistics player needs a strategy. Technological advancement plays a significant role in business activities. Technology advancement or digitalization as a strategy can be seen as leap frogging strategy for many business activities. For many logistics companies in developing country,

change or technological change is a key barrier to them which resulting to non-competitive environment. Whilst the effects of drivers of technological change is coming from internal sources including financial and people. Improved technology has been seen as a key forces to increase productivity in supply chain. It is not only about optimizing and minimizing the cost, but also abilities to reduce human error. Technological leadership in logistics can be categorised to many landscape as below:

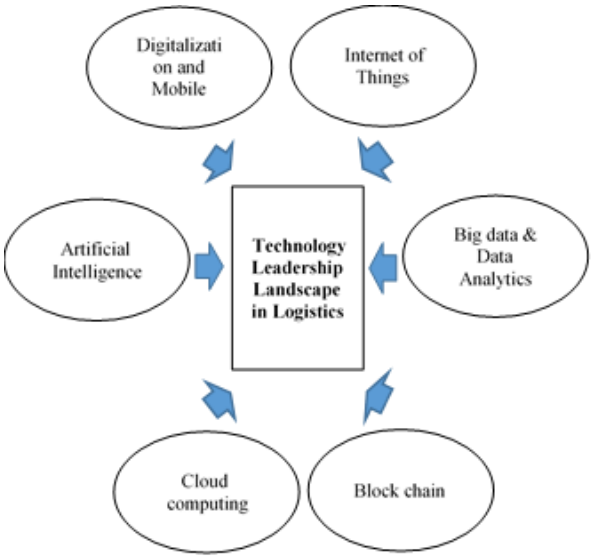

Figure 2: Technology advancement landscape in Logistics

Nowadays, social media widely used as a platform to reach and engage with the customer [14,15] This imitates the major transformation of practice in marketing activities across the globe, regardless of the nature of their businesses, the industry, their type of businesses and the country they operate, either local or international. The utilisation of internet including social media such as Facebook, Instagram and Twitter to reach consumer is not a new phenomenon as mentioned by [16]. Conversely in business to business market, the usage of Twitter and LinkedIn to reach their business prospect, business customer, business customer and their clienteles is encouraging.

Essentially, digitalization and mobile marketing is substantial for any industrial market including logistics players. It is acknowledged that logistics players could gain their competitive advantage from their logistics service innovation [5]. This can be achieved from the technology or system that they used that will affect their improved service quality and lead to successful partnership, for example between logistics provider and their manufacturer [5,10,17]. In fact, as we are entering the IR 4.0; internet of things becoming the main agenda in any industry especially manufacturing. Many scholars are now digging the issues in IR 4.0 such as digital mobility, big data analytics, mobile marketing and other as illustrated in Figure 2 above. Having reviewed the literature review, there are not many studies touches on the issue of mobile marketing or digitalization in logistics context. Logistics play a vital role as it is involved with the storing and movement of the product from one location to another. As emphasised by [4], without logistics, there will be distraction at each point of supply chain activity and as a result, the supply chain activity will be flounder. Therefore, this study seeks to explore and enhance understanding of the role of digitalization and mobile marketing from the logistics players' perspective. While acknowledging the importance of this issue among the logistics players, this finding would then help decision makers within companies to set their strategy to position their company to their target customer and achieving sustainability.

To explain why the digitalization and mobile marketing is vital for logistics company wellbeing, this study also relates and embeds the argument with resource based view (RBV) theory. As stated in RBV theory, the most important factor for companies to gain competitive advantage is from their internal forces. Knowledge resources and technology resources are both important forces for LSP to remain competitive in the market [18]. This is aligned with [4] who stated "technology such as the internet allows managers to have greater advantage and accuracy in ensuring customer satisfaction by enhancing their organisations' ability to offer more personalised and reliable experience, and by reducing order-processing error and response time".

3. Research Methodology: Qualitative Single Case Study Method

This paper developed an understanding for digitalization and leap frogging strategy in logistics industry via qualitative case study. The nature of case study has led to the employment of single case

study method in this research. [19] suggests case study is the best method in order to explore specific issue under one phenomena. Conforming to the selection criteria of the case, the researcher has adopted purposive and theoretical sampling technique.

Considering the fact that difficulties always happen to obtain the data from logistics industry, we have chosen one single case study for our preliminary exploration on issue of digitalization and leap frogging strategy. The company involved in this study has experienced in logistics industry almost five decades and can be considered as a mature company that experiences volatility of logistics industry. Two respondents involved in this study which is air freight international manager and logistics managers. Both respondents have more than 20 years and 30 years experiences each in logistics activities. The interview took approximately 30 minutes for each session. In setting up the date with both respondents, the researcher found difficulty in setting the date for an interview appointment as both of them are always away from office for business trip.

Regarding the issue of single case study in this research, it is justifiable as in qualitative research, the aim of study is not to generalize, but to understand and explore the phenomena. As mentioned by [20], "one can often generalise on the basis of a single case". Meaning here, understanding from one case study findings can always be transferable for other researcher to explore further on the issue studied.

4. Key Findings

Drawing on the key findings from the two interviews from one of the leading logistics companies in Malaysia, there are four key propositions came out from the analysis. All these four factors are representing the key forces of competition in digital era in the logistics sector. Table 1 below shows the four propositions derived from the single case study findings answering the main issue on this study objective. The main aim is to study on how technological innovation would help logistics players to sustain their business activity. This is significant as the findings shows the possible concern by logistics players and how to go with it. In the meantime, Figure 3 below illustrate the four key factors for logistics players to remain competitive in the market locally and globally.

Table1: Four Proposition on Key Reason why logistics should care on digitalization and how to go with it

No	Reason	Propositions
1	Visibility business model	LSP should go for transition process on their business model to provide them with new revenue, which is go for logistics digital business. Make themselves visible to the customer by fully utilizing the promoting activities online
2	E-contract activity	Secondly, every agreement with customer should be put into contract and it is paperless and it should be put in the system. This logistics e contract should specify carefully the contract requirement between customer and logistics provider. Workflows is used to govern the business process using e contract
3	Digital payment	In competing with other logistics players, digital payment is a must to all logistics provider in digital era. This is significant for LSP to go internationally and grab international market opportunity. Digital payment also offers the way out for online companies.
4	Becoming intelligent logistics player with no asset centric	To remain sustain in the business, logistics may move to become intelligent logistics players. This term is referring to the logistics player that is practice no asset or less asset centric. They own no asset but able to provide logistics services (for example fleet and warehouses) by aggregating “information about assets” from people who do own them through leveraging data. This is already happened in the developed country such as United Stated and United Kingdom.

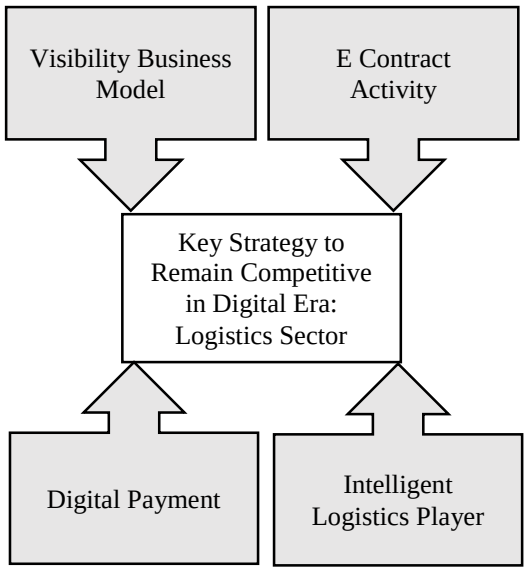

Figure 3: Four key forces to remain competitive in digital era in logistics sector

5. Originality, Contribution, Practical Implication and Future Research Opportunities

This paper is among the earliest study that mixing issue of digitalization, leap frogging strategy and GIG economy in the logistics sector. It contributes to the current theory on forces of competition in digital era specifically in logistics industry. The four key forces strategy in competing in digital era in logistics sector can be used as a reference to the logistics industry players, to further analyse and understand how this leap frogging strategy could affect the wellbeing of their company. This study can also be used as a platform for logistics scholar to explore on key forces highlighted in the findings with adoption of multiple case studies, larger samples, to be performed in quantitative study and to examine the issue from both LSP and customer perspectives.

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