

# A Study of the Reality and Proposing Solutions to Strengthen the Application of Information Technology in Small and Medium Logistics Enterprises in Southern Vietnam

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**ABSTRACT:** In the global economy, E-commerce has become an essential element of business strategy and a powerful catalyst for economic development. E-commerce does not only open new business opportunities, new products and services, and e-business methods. E-commerce intends to develop actively and essential logistics services. Survey results showed that logistics services in Vietnam, although developed quite quickly, still do not meet the demand of E-commerce. The cost ratio for Logistics services is quite high in the selling price of tangible products. Therefore, Logistics enterprises need to pay attention to modernizing management, equipment, especially to promote the application of information technology, strengthen links with businesses in the same field as well as with businesses. Logistics also need to shake hands with E-commerce businesses actively. Therefore, the assessment of the situation of information technology (IT) application in Logistics enterprises, especially small and medium enterprises (SMEs) is necessary, to increase the ability to support current e-commerce operations.

*Keywords:* Logistics services, e-commerce, SMEs.

## 1 INTRODUCTION

According to the Vietnam Association of Logistics Services Enterprises, the recent growth rate of the Logistics industry in Vietnam has reached about 14-16%, with sales of about 40-42 billion USD/year (VLA White Paper, 2018). Based on the value chain of Logistics in Vietnam, it can be seen that the above activities focus on forwarding, inland transport, exploiting seaports and airports, warehousing, goods management, and international transportation where e-commerce is the mainstream of global trade. This opens up an excellent opportunity for Logistics services because e-commerce and Logistics services will work together to help smooth the export process, save costs, time, and improve competitiveness for businesses. Some experts said that Vietnam's logistics business is mainly small and medium-sized enterprises that are not highly professional. Logistics, warehousing, customs clearance, retail consolidation do not involve in managing the whole Logistics chain as foreign-invested enterprises. E-commerce support services are inadequate and have not applied many technological factors.

From the opportunities and challenges of the logistics industry, the fact shows that Logistics com-

panies are ready to apply IT and accept the challenges posed by Industry 4.0. This article contributes to solving existing problems and barriers in the application of IT in small and medium-sized logistics service enterprises, thus proposing solutions to increase the ability of IT applications in businesses.

## 2 DISCUSSIONS

### 2.1 Overview of the Vietnam logistics market

In 2018, logistics service continued the growth of previous years with a growth rate of about 12-14% thanks to the growth of the economy in general and import-export in particular and the interest in developing services. According to the World Bank's report on Vietnam's Logistics Performance Index (LPI), Vietnam was ranked 39 among 160 countries, up by 25 positions compared to 2016, and rose to 3rd in ASEAN countries. All LPI 2018 evaluation indicators increased dramatically, including the highest increase in service quality capacity (ranked 33, up by 29 positions), and the ability to track and retrieve goods (ranked 34, up by 41 positions). Vietnam is also a top-ranking country in emerging markets. This is the

best result that Vietnam had since the World Bank performed LPI ranking from 2007 to the present.

Table 1. LPI ratings of Vietnam over the years

Year	2018	2016	2014	2012	2010	2007
Rank LPI	39	64	48	53	53	53
Point LPI	3.27	2.98	3.15	3	2.96	2.89
Customs	2.95	2.75	2.81	2.65	2.68	2.89
Infrastructure	3.01	2.7	3.11	2.68	2.56	2.5
International Transport	3.16	3.12	3.22	3.14	3.04	3
Logistics Capacity	3.4	2.88	3.09	2.68	2.89	2.8
Tracking & Retrieval	3.45	2.84	3.19	3.16	3.1	2.9
Times	3.67	3.5	3.49	3.64	3.44	3.22

Source: World Bank

From Table 1, in 2018, the Logistics service industry was further developed compared to 2017 with an estimated growth of 12% along with an increase of 13.6% of import-export turnover in the first nine months. This reflects the status of improving the capacity of enterprises through the application of IT in Logistics and also reallocating production areas through changes in supply chains.

### 2.2 Capital scale of Logistics enterprises in Vietnam

The capital scale, as of 2016, is quite small, namely the number of enterprises with operating capital of less than 10 billion accounting for more than 77% and only 0.59% of enterprises with operating capital of over VND 500 billion. According to Decree 39/2018/ND-CP about the law on supporting small and medium-sized enterprises, which came into effect from March 11, 2018, the number of small and micro enterprises in the field of transportation, warehousing, and other support services for transport and postal delivery accounted for 94.84%.

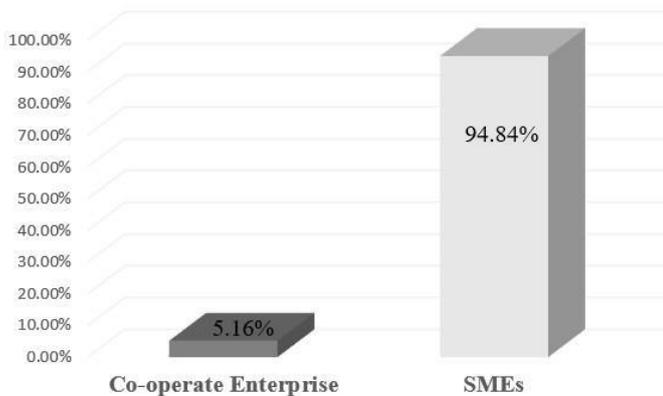


Figure 1. Share of Business Type Logistics

Source: VLA/VLI Vietnam Survey in August 2018

### 2.3 The services being provided in logistics service business enterprises in Vietnam

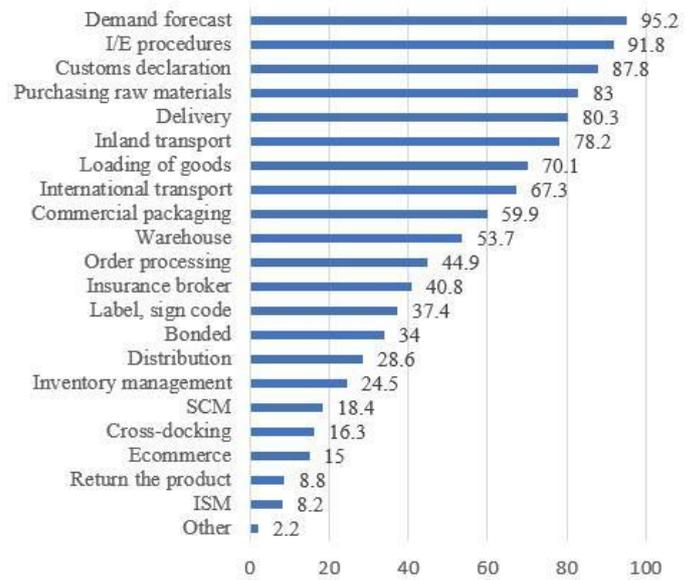


Figure 2. Logistics Service Types

Source: VLA/VLI Vietnam Survey on August 2018

According to statistics, demand forecasting and I/E procedures provided by Logistics enterprises are the two services that account for the highest proportion of over 90%. The group of services provided accounted for over 80%, including customs declaration, material procurement, and freight forwarding, inland transport (78.2%), cargo handling (70.1%), international transportation (67.3%), and insurance brokerage (40.8%). It can be seen that these are basic and traditional Logistics services, accounting for a relatively high proportion. Services related to warehouse and distribution activities account for a proportion ranging from about 25% to over 50%, namely packing (59.9%), warehousing (53.7%), handling orders (44.9%), labeling and symbols (37.4%), bonded warehouses (34%), distribution (28%), and inventory management (24.5%). Thus, it can be seen that in reality, logistics enterprises in Vietnam are providing services, three-quarters of which are services related to transportation, warehousing, loading and unloading of goods, and customs declaration. Supply chain management services, cross-docking, E-logistics all account for a modest proportion of less than 20%, even taking back goods and managing information systems accounting for less than 10%, failing to meet demand and expectations of the potential logistics market.

### 2.4 The reality of IT application in small and medium logistics enterprises

The author has sent out 340 questionnaires through direct question and answer channels, face-

book, resulting in 200 responses from small and medium Logistics enterprises. The purpose of this survey is to help small and medium-sized logistics service providers assess the situation, identify barriers as well as realize the importance of IT application to Logistics activities, thereby contribute to improving operational efficiency and enhance the competitiveness of Vietnam Logistics enterprises in domestic and international markets.

**2.4.1 Assess the size and resources of businesses**

Of the 200 Logistics enterprises surveyed, the majority are limited companies (81.5%) and joint-stock companies (18.5%). This data also reflects the fact that small and medium Logistics enterprises account for a large proportion. Limited business size is one of the significant barriers for businesses operating in Logistics services in a competitive market. Logistics services are provided mainly in the field of forwarding, road transport, customs clearance, and shipping, while activities such as warehousing and distribution services account for a small proportion. Expensive scale, along with the logistics services provided, is still at a simple level and not yet highly integrated, so companies with logistics human resources of less than 50 people account for 85.62%.

**2.4.2 Assess the types of IT applied in small and medium Logistics enterprises**

**Table 2. Current Situation of IT Application in Enterprises**

Application	Using	Use in future	No need to use
Barcode Scanner	24.8%	24.3%	50.9%
Cloud Logistics	8.60%	23.6%	67.8%
Customs Declaration	73.0%	5.40%	21.6%
Green Logistics	0.00%	32.4%	67.6%
Order Management	14.7%	20.3%	65.0%
Resource Management	24.2%	20.9%	54.9%
Smart Logistics	3.70%	29.7%	66.6%
T&T	36.3%	14.9%	48.8%
TMS	35.4%	22.1%	42.5%
WMS	32.3%	20.3%	47.4%
EDI	29.6%	14.9%	55.5%
FMS	39.7%	14.9%	45.4%
RFI	2.50%	18.9%	78.6%

Source: Author’s Survey

According to the current survey results, customs declaration used IT application (73.0%). A number of applications are heavily used in road transport through optimizing vehicle capacity to improve the rate of operation over the total travel distance, optimize route planning and control, and time. The schedule accounted for a high rate of over 30% such as the application of forwarding management system (39.7%), Tracking and Tracing (36.3%), transporta-

tion management- TMS (35.4%), and warehouse management- WMS.

Some technology applications such as RFID, Cloud Logistics, and Smart Logistics account for a relatively low proportion of less than 10%, and 0% are Green Logistics. In addition, the number of businesses providing Logistics services that do not need to use for the present and future also accounts for a high proportion of over 50%, and more than 20% of businesses will use it in the future. This shows that the strategy of applying IT in Logistics is not focused on most small and medium Logistics companies as they are still afraid and not ready for technology investment.

**2.5 Assess the benefits of IT application in SMEs in Vietnam**

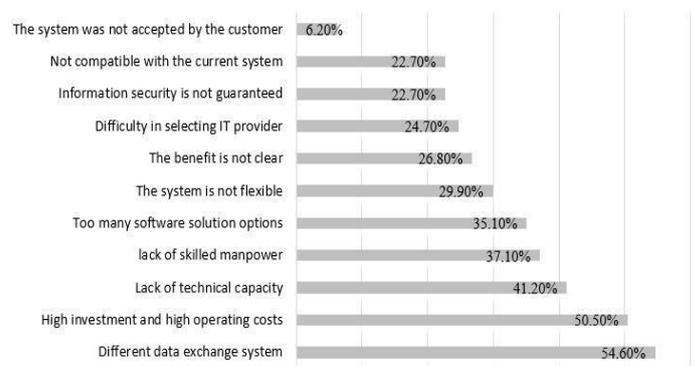


Figure 3. Barriers to Investing in IT Source: Survey Authors

The benefits of IT applications are perceived to varying degrees by Logistics companies, but all have in common is improved control and planning that accounts for over 70%, reducing costs by approximately (60. , 2%) because when applying applications to the business, the processes have been optimized, leading to an increase in operating cost efficiency, reduction of employee errors thereby improved (59.5%), in addition to a more scientific operating process, has also improved the overall service quality (55.4%) significantly, meeting customer requirements for reliability, monitoring of goods. Although most companies aware of the above benefits, about 44% of companies do not appreciate the critical role of IT in business development. Therefore, when referring to the E-logistics development strategy, only about 60% of companies focus on this issue. Besides, nearly 40% of logistics companies believe that IT application is not considered a critical factor in creating a competitive advantage.

## 2.6 Assess the disadvantage factors of IT application in SMEs in Vietnam

In addition to the fundamental and urgency of the field that requires e-commerce application, many factors create motivation for e-commerce development to make E-commerce more widely spread. Logistics service companies are facing many challenges, making investment decisions to promote the practical benefits of IT must be balanced with the budget, creating efficiency, and ensuring compatibility with the current system. In addition, companies are facing many barriers before investing in IT applications.

Possible barriers include the different EDI standards among companies (54.6%) and high investment and operating costs (50.5%). These are the two barriers that primarily affect the investment in responsive information technology such as lack of mutual trust, as well as primarily copyright applications of foreign corporations, Human resources capacity forces businesses to outsource, resulting in high operating costs. Most of the logistics companies in Vietnam are mostly small and medium-sized, with the potential of capital is not strong enough, making them feel quite tricky in making decisions about whether to invest in software as there is a guarantee in capital recovery.

Another barrier is the lack of technical, operational skills (41.2%) and properly trained staff (37.1%). Next, there are too many software solutions to choose from (35.1%), so making investment decisions can lead to ineffectiveness when applications are not appropriate with the company's characteristics. There is no clear standard yet to ensure the benefits of the business. Technology in developing Vietnam is also an advantage in information security, so it is only a low obstacle (22.7%). So choosing the right IT application to suit the business situation of each business will make an essential contribution to improving the efficiency of the implementation of Logistics services; on the contrary, the investment is spread. This is the reason why Logistics service enterprises operate stagnant, high cost, and do not keep up with the trend.

## 2.7. Some solutions to increase IT application in small and small Logistics enterprises in the South of Vietnam

### 2.7.1 Proposals to regulatory agencies

Completing the legal framework on e-commerce such as invoices for goods, regulations of traffic management; creating conditions to encourage enterprises to apply and develop automatic technology; designing "green" vehicles; adopting specific policies and guidelines for the operation of electric tri-cycles, four-wheel vehicles and drones; facilitating

and supporting electronic payment widely deployed in Vietnam, limiting cash transactions; and creating a "playground" for businesses to connect with each other, support each other for development.

Developing and implementing an IT development strategy for the whole sector in the long-term, parallel with the logistics development strategy to 2020, with a vision to 2030.

The government should pay attention to infrastructure investment and have incentive policies as well as financial support so that small and medium Logistics companies can invest in IT applications. The State should formulate policies to support and encourage software companies to invest in researching and developing IT applications according to international standards, thereby creating favorable conditions for domestic logistics companies to access. The application is suitable for financial ability.

Enhancing international cooperation in the field of scientific research and the transfer of IT applications in accordance with the operational practices of Logistics service enterprises.

### 2.7.2 Solutions for logistics businesses

Raising awareness of the role of IT application is one of the factors that create customer satisfaction and contribute to improving the quality of Logistics services, and this is an integral part of the business strategy of the enterprise.

Investing in necessary IT applications such as IT infrastructure to be focused on improvement and new construction, especially the application of the EDI system to gradually improve the data transfer and data digitization, increase security, and data transfer speed. A part of the budget for business operations should be used to invest in IT to effectively apply the new software needed for Logistics activities such as RFID, BARCODE, and Logistics cloud. Logistics companies should aim to collaborate with software companies to order applications specific to the company to make the most of each application's efficiency.

IT human resources: Companies need to pay attention to recruitment, training and training of professional personnel.

Collaborating with human resource training centers or universities to train logistics staffs with IT knowledge. Tailor-made on-site training courses can be used to ensure that employees are trained according to the specifics of the job.

### 3 CONCLUSION

This article has presented the current situation of IT application, benefits, and barriers in IT application in small and medium logistics service enterprises in the South of Vietnam, from which the authors gave some recommendations to the state and businesses to increase the ability to apply IT as well as the competitiveness and efficiency of business operations and help small and medium-sized logistics enterprises. The development is commensurate with the healthy growth of current e-commerce activities.

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