

## LATVIAN INFORMATION TECHNOLOGY COMPANIES' EXPORT PROMOTION TO THE US

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**Abstract.** Information technology is one of the fastest growing service export industries in the world. According to information collected by LIAA (Information and Communications ..., 2018), in 2017, 40 % of Latvian information technology companies exported to the Baltic States. In 2017, the United States (further – US) was the ninth largest export partner and the 18 th largest import partner of Latvia. The US is the world's largest software and information technology services provider, accounting for ¾ of the total global IT market. Latvian information technology companies have an interest in an information technology service exports to the US; however, currently IT companies mostly choose not to conduct market research and export strategy development. Consequently, it is necessary to evaluate the export potential of Latvian information technology services and to determine the export promotion activities of Latvian information technology services to the US. So far, there are no analysis of the Latvian IT export promotion to US that would be based on company's needs, experience and resources available. The results of the research concluded that the export tendencies of IT services are upward and the export balance of Latvian IT services with the US is positive.

**Key words:** information technologies, export, information technologies' export promotion.

**JEL code:** E00, F60, L86

### Introduction

Latvia's trade balance with the United States is positive, and in 2017, Latvia's total trade in goods and services with the United States was EUR 672.4 million, which ranked the United States 13 th among Latvia's foreign trade partners (Latvijas ekonomiskā sadarbība ..., 2018).

Theoretical and practical research in information technology industry by looking closely at information technologies services' export promotion was conducted. The information technology companies' export promotion study applies to Latvian SME (small medium enterprises) to improve their export activity to the US. The export promotion aspect of information technology companies was studied in depth.

**The aim of the research** is Latvian information technology companies' export promotion analysis, in order to clarify the trends of Latvian information technology companies export to the US, to promote Latvian information technology companies' export to the US.

In order to achieve the objective, the following **tasks** have been set:

- to explore the theoretical aspects of export promotion and the implementation process in information technology companies, and to identify the key factors influencing these processes;
- to analyse and compare the information technology sector in Latvia and the US, to identify the main export promotion activities of Latvian information technology companies and to evaluate their results;
- to make structured surveys for Latvian information technology companies which are interested in export to the US;
- to identify approaches to promote the use of these factors to promote exports to the US, and to estimate the cost and effectiveness of implementing the export model developed.

**The methods applied.** Quantitative and qualitative research methods, including the structured expert interviews with representatives of the information technology industry, quantitative data

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analysis, SWOT analysis, the selection and analysis of available information about information technology services' export in the study were used.

**Novelty of the study.** There is not enough scientific research available analysing Latvian information technology companies' exports to the US, mainly research focuses on analysing Latvian companies' export to the European Union.

**Research sources and materials:** the research includes scientific articles and studies, books, reports (Latvian Annual Report, Companies Annual Report etc.), informative reports and statistics from databases such as Lursoft, Firms.lv, Central Statistical Bureau, OECD Database, Statista, NASDAQ, United Nations statistical database, US Census Bureau, Eurostat etc.

**Research period:** August 2018 - December 2018.

## **Research results and discussion**

### ***Exports and information technologies***

Today's export trends are characterized by an international outflow of people and capital from Europe. For example, the outflow of capital from the UK to countries such as the US, Australia, Argentina, Brazil and Canada have provided Europe not only with new sources of food and raw materials, but also with new export markets. After the World War I, in order to protect domestic producers, Europe introduced restrictions on imports (tariffs, quotas, price restrictions etc.). In 1944, in order to mitigate the effects of the World War II on international science, the General Agreement on Tariffs and Trade (GATT) came into force (Seyoum, 2009, 3).

The results from the study showed that there is no consensus among theorists regarding export and export contributing factors. Katarzyna Twarowska and Magdalena Kakol in the article *International Business Strategy - Reasons and Forms of Expanding into Foreign Markets* identified the main reasons for export and the ways in which export activities are implemented. According to K. Tvarovska and M.Kakola, the desire of companies to acquire new markets identifies with the growth or expansion of the company in order to increase the profit of the company and the number of customers, as well as to reduce the production costs of products. There are two types of exports: direct and indirect. Direct export means that the company sells its products to foreign markets without intermediaries, but indirect exports to intermediaries or other agents involved in the transportation and product sales (Twarowska, Kakola, 2015, 1007).

Contrary to the views expressed by K. Tvarovsky and M.Kakola, M. Kogon does not distinguish between specific types of exports. He believes that export promotion activities in the company's target market should be carry out through agents or distributors, since agents or distributors are those who are familiar with the specifics of demand for the selected target market, legislation and other important export aspects (Kogon, 2015, 4).

Information technology is a term used to describe the acquisition, processing, maintenance and distribution of information. Information technology involves the application of computers and communication technologies to provide information processing and information flow from the development of an idea to the end user using the result obtained. It should be noted that information technology is limited to systems dependent on micro-electronic and telecommunication technologies (Sooryanarayana, Mudhol, 2000, 2).

The Meriam Webster dictionary, on the other hand, mentions that information technology is technology that involves the development, maintenance and use of computer systems, software and networks for the purpose of distributing and processing data (Definition of information ..., 2018).

The American Information Technology Association defines information technology as "computerized information systems most commonly used for research, development, development, support or management of software and computer systems." The primary purpose of information technology is to provide secure electronic equipment and software usage (Bloise, 2009).

### ***Information technologies current export trends in Latvia and US***

Information technology has evolved rapidly over the last thousand years and has become an important support for the communication and information flow. Developments in information technology in the last twenty years have transformed the way information is: obtained, processed, stored and disseminated. Researcher Manfred Kochen believes that the history of information technology development is a continuous process, which cannot be divided into specific periods (Sooryanarayana, Mudhol, 2000, 1).

Services provided by the Latvian IT industry are in demand not only in the Member States of the European Union but also in other continents. Thus, for example, exports of computer and information services to Member States increased by 20 % in 2015, but outside the EU by 41% (Export of ICT..., 2016).

Despite the fact that the IT sector accounts for about 4.7 % of GDP, it plays an important role in economic development. In addition to modernizing and improving the way businesses operate, information technologies can help boost economic competitiveness, creativity and innovation and tackle social challenges (as quality of life). Turnover of IT companies increases every year (IKT sektora uzņemumu ..., 2018).

When analysing the changes in the number of IT companies and the total number of companies in Latvia in the period 2012-2016, it is possible to determine that the total number of companies has increased by 25.60 % and the number of IT companies by 49.59 %. The share of IT companies in the total number of companies has increased by 0.91 % during this period. While in 2012 the number of IT companies was 4.8 % of the total number of companies in Latvia, in 2016 the number of IT companies reached 5.7 % of the total number of companies. These changes affected overall economic growth, which has led to increased demand for IT services and IT products (IKT sektors ekonomika, 2018).

Evaluation of the structure of the Latvian information technology sector in the period from 2012 to 2016 determines that the total number of IT companies has increased by 66 %, from 4390 companies in 2012 to 6567 companies in 2016. The largest share of IT companies, or 87 % on average, includes IT service providers, 12 % IT wholesale companies and about 1 % IT manufacturing companies (Latvijas statistikas gadagramata, 2017).

Table 1 shows the business performance indicators of the information technology sector as the number of employees, corporate profits, tax payments and turnover for the period 2012-2016 (Table 1) and these indicators were compared with the overall business performance in 2012. Table shows that all indicators have increased during this period (IKT sektors ekonomika, 2018).

Table 1

**Latvian IT companies' performance changes in 2012-2016, millions, EUR**

<b>Business performance indicator</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Changes to 2012,%</b>
<b>Number of employees in IT companies</b>	21449	23305	26522	29203	31801	48.26
<b>Total number of employees</b>	573580	584281	619684	633450	634958	10.70
<b>% of the total number</b>	3.74	3.99	4.28	4.61	5.0	1.27
<b>IT turnover (million, EUR)</b>	2897	3099	3063	3497	3471	19.81
<b>Total turnover (million, EUR)</b>	49907	52174	51103	51304	51196	2.58
<b>% of the total number</b>	5.80	5.94	5.99	6.82	6.78	0.97
<b>IT gross profit (million, EUR)</b>	205	206	221	247	290	41.46
<b>IT company taxes (million, EUR)</b>	21	35	38	42	47	123.81

*Source: authors' calculations based on "IKT sektors ekonomika", 2018*

Due to the increase in the number of IT companies, the amount of taxes paid by companies has increased by 123.81 % (in 2012 - 21 million EUR, but in 2016 - 47 million EUR). During this period, the turnover of IT companies increased by 19.81%, while the gross profit increased by 41.46 %. This situation reflects the increasing influence of IT companies on the country's economic growth (IKT sektors ekonomika, 2018).

During the research, information was gathered about the Latvian Information Technology companies *Mapon, Vendon, Meditec, Tilde, Elva Baltic, Datakom, Computer Hardware Design, ABC Software, Digital Economy Development Center*, as well as *SAF Tehnika* core business, as well as current and desired export market. (ICT Industry Companies ..., 2018).

Lithuania, Germany and the United States are the most frequently mentioned as the existing export markets for Latvian IT companies but Germany, the United Kingdom and the US are preferred. This shows that Latvian IT companies consider not only Scandinavian, Baltic or nearest EU countries as one of the main export markets for IT services, but also the US (ICT Industry Companies..., 2018).

The United States is a major player in the world of software and information technology services. It is worth mentioning that more than three quarters of the global IT market, estimated at USD 3.8 trillion, provides the United States. The IT sector employs more than 10.5 million people in the US and has a GDP of USD 1.14 trillion. The number of IT employees has increased by 14.6 % since 2014 (The Software and ..., 2018).

In the US, there are over 100,000 software development and other IT service companies, more than 99% of which are small or medium-sized enterprises with up to 500 employees. These include software developers, programming service providers, computer system developers, also equipment development, repair and maintenance companies. The number of highly qualified IT staff has increased significantly in recent decades, reaching around two million (The Software and ..., 2018).

Software development and maintenance companies in the US operate in a harmonized marketplace and are recognized as providing reliable, efficient, and relatively fast solutions. Multinationals and foreign companies are showing interest in the US market despite it is regulated, particularly with regard to intellectual property and copyright. The US IT companies are the market leader in software and are competitive in almost all other market segments with a solid foreign market share (The Software and ..., 2018).

According to data compiled by Bloomberg, IT companies in the United States are divided into the following industries: technology equipment, storage and peripherals, technology equipment and equipment, software services, software, semiconductors and semiconductor equipment, IT services,

Internet software services, electronics equipment, communications equipment (Information Technology: Stock..., 2018).

The IT industry in the US is regulated, with at least 34 federal laws, regulations, and standards governing the private IT sector and related industries. Of these: one is the law, 25 - the rule, but 8 are mandatory industry standards. These standards cover 10 of the 18 critical infrastructure sectors and include sectors such as agriculture and food production, energy, environment and manufacturing, transport systems. Each of the 34 federal laws is subject to at least one enforcement mechanism. These mechanisms include court orders, fines, criminal penalties and other administrative actions such as license revocation and suspension. Most commonly, these contract enforcement mechanisms are those used by information technology companies and their clients to enforce defaults, but they do not always directly relate to the IT industry, IT systems and data provision (Langevin, Jackson-Lee, 2008).

The US IT companies' foreign trade balance for the period 2006-2012 is characterized by an annual average increase in the value of IT exports of USD 57.91 million, or 9.14 % annually (Table 2). This indicates that one of the most important export sectors in the US is information technology (Exports and American ..., 2014).

Table 2

**The US IT companies' foreign trade changes 2006-2012, million USD**

Year	2006	2007	2008	2009	2010	2011
<b>ICT export value, million USD</b>	40.8	50.6	55.4	55.6	62.0	69.2
<b>Changes from previous year, %</b>	X	24.02	9.48	3.61	11.51	11.61
<b>ICT import value, million USD</b>	140.3	135.3	137.1	112.6	133.9	139.9
<b>Changes from previous year, %</b>	X	-0.4	1.3	18.0	18.9	4.2
<b>Balance sheet, million USD</b>	-99.5	-84.7	-81.7	-57.0	-71.9	-70.7

*Source: authors' calculations based on ICT goods exports, 2018; Exports and American ICT Companies and Workers, 2014*

The US IT companies' foreign trade balance and a comparison of its results with the previous period show that the volume of US IT companies' imports is volatile during this period, however, on average it is increasing by 5.84 % annually and reaches 113.88 million US dollars (ICT goods exports, 2018).

The export balance is negative during this period, however, the volume of imports is decreasing by 55.97 mln US dollars, and the value of imports has decreased by 32.7 million US dollars. This indicates that the US is one of the countries with which it is possible to develop international cooperation for the provision of IT services (Exports and American ..., 2014).

The largest US IT export markets in 2012 were the EU (56 million), Mexico (39.6 million), Canada (31.8 million), China (15.3 million), Japan (14.9 million) and Brazil (13.1 million). Mexico was the largest export market for computers and equipment as well as semiconductors in 2012, while the EU was the largest export market for software, navigation equipment, communication equipment, computers and data processing services, and databases and IT services. The main export markets for audio-visual equipment, on the other hand, were Canada and the telecommunications market was Brazil. Changes in ICT exports are shown in the table below (Table 3) (Exports and American ..., 2014).

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Analysing the US IT industry export changes in four IT industries during 2006 and 2012, the fastest growth of 97.2 % and 96.9 % was in telecommunications services, computers and data, respectively export of processing services. Exports of databases and other IT services increased most during this period, by 39.2 %. This indicates that the need for these IT services is decreasing (Exports and American..., 2014).

**Analysis of Latvian information technologies companies' export to the US**

The study carried out an evaluation of Latvian information technology exports by conducting expert interview analysis, which reflects experts' views and observations on the IT industry and IT services' export potential to the US.

Authors carried out Latvian information technologies companies' representatives survey via e-mail in 2018. In order to find out as broad view as possible, the survey was sent out to Latvian information technology companies (SMEs) that were interested to promote export activities in the US.

The results of the interviews conducted and the additional information analysed indicate that the export trends of Latvian IT services to the US are upward. Experts estimate that Latvia's IT services are qualitative and competitive in the US; however, in order to promote export development, it is necessary not only to improve the IT legal framework in Latvia, but also to develop support measures for Latvian IT companies that want to attract partners or investors from the United States.

Taking into account the specifics of the Latvian information technology industry, it was concluded that in order to promote the export of Latvian IT services to the US, it is necessary to develop criteria on which to determine, which are the necessary export promotion activities and include a summary of market research methods and export strategies. As the study concluded, Latvia's trade balance with the US is currently positive and the interest of Latvian IT companies in acquiring new export markets was observed; therefore, it is necessary to promote the export of Latvian IT services to the US.

The results of the expert interviews reflect, that the developed export promotion model enables companies to reduce the time of development of IT service export promotion activities for SMEs to 63% of the average time planned or about 22h, and to increase the budget for export promotion activities on average by 80% of the total export budget. This permits to save an average of 19% - 37% of the expenses necessary for the development of export promotion activities. Based on the research results, including the results of the research and its reliability, the author proposes proposals for Latvian IT companies that are interested in exporting to the US. In order to harness the potential of the United States as a potential export market, cooperation needs to be established with companies in the United States using different IT platforms, as well as participating in presentations and trade missions.

In order to minimize the potential negative impact on the export of Latvian IT services to the United States, information technology companies need to conduct in-depth market research before conducting export activities and determine the competitiveness of IT services exported. In order to improve the competitiveness of Latvia's IT services' exports and consummate the IT sector in Latvia, the legislator needs to improve the legal framework of the Latvian IT industry by developing information technology law and quality service standards.

### **Conclusions, proposals, recommendations**

- 1) Although management theory contains different definitions for export, they are based on the assumption that exports are movements of goods or services between buyers and sellers in different countries, and can be tailored to the specifics of the business.
- 2) The efficiency of Latvian IT companies' export strategy development and implementation is influenced by ill-considered and unprofessional behavior during its development and implementation, moreover, Latvian IT companies, for reasons of resource efficiency, mostly choose not to carry out export market research and export market acquisition strategy development.
- 3) The beginnings of the information technology industry date back to the time when written communication began to develop. Not only is the number of IT companies and their profits growing globally, with an average of 10% each year, but also their impact on global business trends. The countries of origin of the most successful IT companies include the United States, France and Germany.
- 4) The main export markets of Latvian IT companies are Lithuania, Estonia and Scandinavian countries. The trade balance of IT services is negative, but from 2012 to 2016, the export of IT services increased by 74.9% and the imports by 76.0%.
- 5) The US information technology industry is highly regulated, IT companies are mostly public limited companies, and 99% of US software development companies are SMEs. The industry's average GDP is USD 1.14 trillion.
- 6) Between 2013 and 2017, the value of US IT exports increased by an average of 9.14% annually, however, the US export balance was negative; whereas since 2006, the value of IT imports has increased by an average of 5.84%. The main US IT export markets are the EU, Mexico, Canada and China.
- 7) Evaluating the opinion of experts of the Latvian information technology sector, it was found that the export tendencies of IT services are upward and the export balance of Latvian IT services with the US is positive. However, in order to promote Latvian IT companies export potential, it is necessary to consummate IT field law.
- 8) According to experts, the export of Latvian IT companies' services to the US is influenced not only by the quality and competitiveness of IT services, but also by the ability of companies to attract investors and cooperation partners.
- 9) According to experts, it was found, that in order to expand Latvian IT companies export to US, it is necessary to use different IT platforms, attend field presentations and participate in trade missions.

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