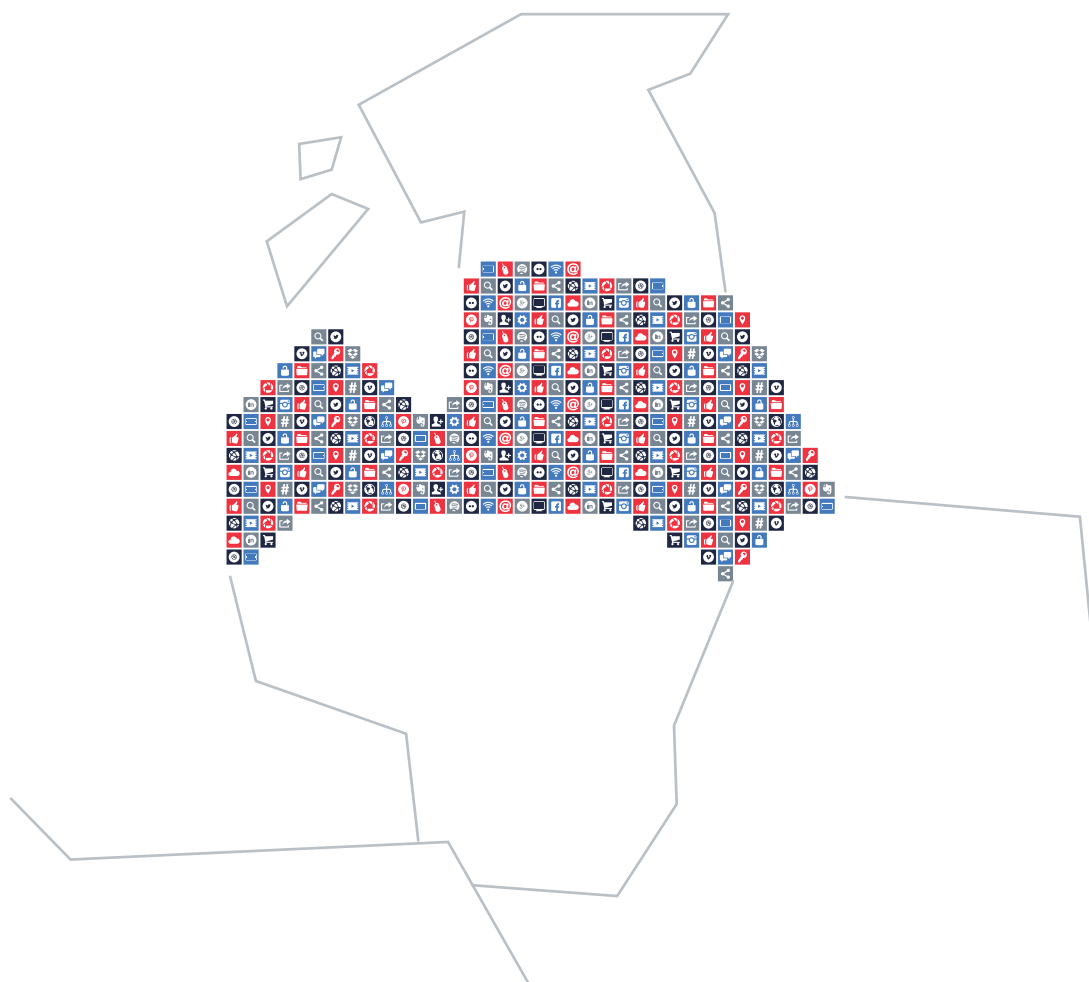


# Digital Transformation of Small and Medium Enterprises in **LATVIA**



DELab UW Country Report

April 2016

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Commissioned by Google

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# Acronyms

- B2B – Business to Business
- B2C – Business to Customer
- B2G – Business to Government
- CRM – Customer Relationship Management
- DESI – Digital Economy and Society Index
- ERP – Enterprise Resource Planning
- EU15 – Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
- EU28 – all EU member states
- FTTP – Fiber to the Premise
- ICT – Information Communications Technologies
- Mbps – Megabits (Mb) per second
- NMS13 – Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia
- RFID – Radio-frequency identification
- SCM – Supply Chain Management
- SMEs – Small and Medium-sized Enterprises

# Executive Summary

In this report we examine the level of digital transformation of SMEs in Latvia in comparison to SMEs from other EU countries. We take into consideration both digital business environment (digital infrastructure and digital skills of human capital) and adoption of digital technologies. The introduction of digital technologies such as websites, social media, e-commerce, electronic information sharing and cloud computing simplifies and accelerates decision making, allows effective brand building, facilitates transactions and makes it possible to reach new customers.

## **Why is it so important for SMEs to go digital?**

Internet and digital tools become a must in the context of the Digital Single Market strategy. The regulations proposed within the DSM greatly enhance the opportunities stemming from successful digital transformation, as well as pose risks connected with losing markets and customers due to digital business illiteracy. Although the digital revolution affects both ICT and traditional businesses, it puts significant pressure on Small and Medium Enterprises (SMEs) that are relatively more sensitive to global competition occurring within the Internet compared to their stronger, bigger counterparts.

## **Are Latvian SMEs ready to compete in the Digital Single Market?**

Our analysis shows that SMEs in Latvia benefit from high-speed, high-quality and relatively cheap Internet, which is due to a high coverage of FTTP (Fiber to the Premise) technology in the country. The level of digitalisation of human capital in Latvia is also promising: the Latvians have very high digital skills in communication, information and problem solving. On the other hand, Latvian SMEs tend not to use digital technologies as much as SMEs in other EU countries. The biggest gaps appear in usage of cloud computing services and adoption of digital management tools, which might result from the lack of software skills that Latvian citizens report. Moreover, the utilisation of websites, social media and e-commerce sales channels is also much lower than in SMEs from other EU countries.

# Definitions

## **Digital transformation of enterprises**

Changes in the functioning of enterprises due to the adjustments in business environment associated with the new application of digital technologies

## **Digital business environment**

The digital skills of human capital and the development of digital infrastructure enabling utilisation of digital technologies

## **Digital skills of human capital**

Adoption and skillful utilisation of digital technologies by human capital

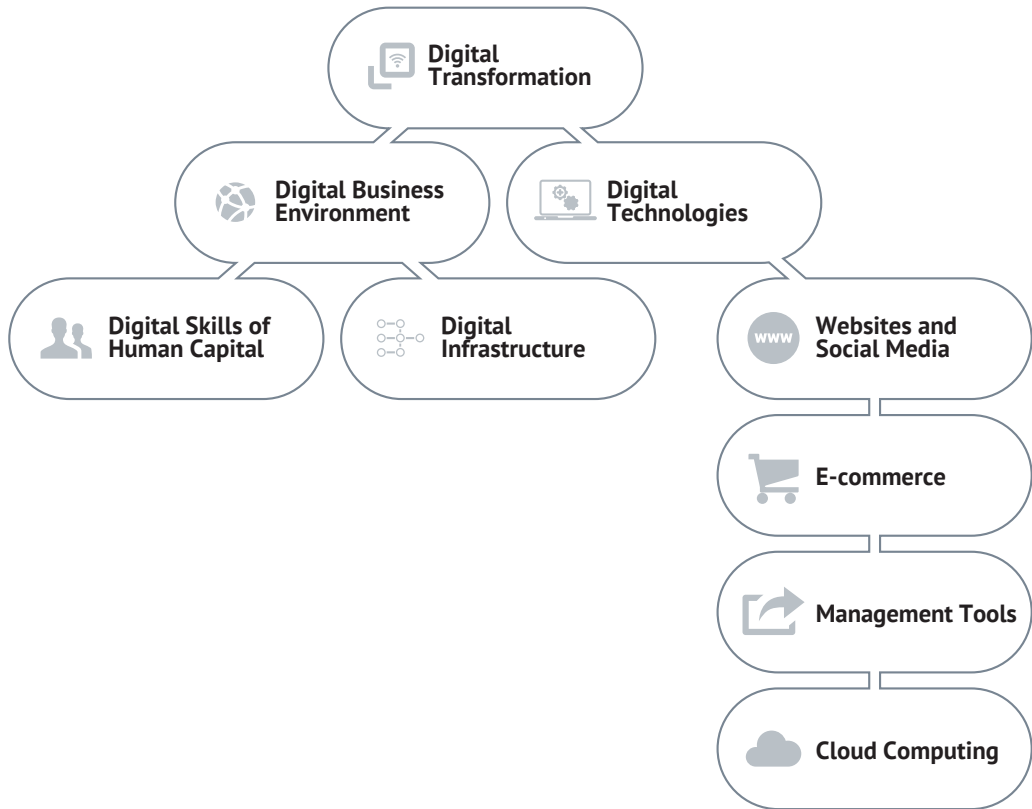
## **Digital infrastructure**

Structure needed for adoption and utilisation of digital technologies; facilities to interconnect components of digital business environment

## **Digital technologies**

Electronic tools, systems, devices and resources that generate, store or process data: websites, social media, e-commerce, management tools, cloud computing

# Main Concepts



Digital transformation enables and accelerates the smart integration of products and services into the economy and society. Its strongest effect lies in the optimal combination of digital technologies with digital business environment.

The more developed the digital infrastructure and digital skills within a society, the better the utilisation of digital technologies. Similarly, the higher the utilisation of digital technologies, the higher the demand for human capital to employ and upgrade digital inventions. Digital tools enable smart economic integration of production and delivery of products and services to customers. Digitally aware SMEs find new market opportunities with greater ease, grow their business partner networks faster and obtain quality feedback from their clients through customer relation management tools.

# Latvia in a Nutshell

## Key findings for SMEs in Latvia

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- Benefit from high-speed, high-quality and relatively cheap Internet
- Collaborate with business partners and customers through social media
- Have access to a workforce that is skilled in communication, information and problem solving



- Do not invest in upgrading ICT-related skills of their employees
- Do not engage in electronic sales and cross-border e-commerce
- Do not adopt digital management and marketing tools
- Do not utilise cloud computing services

## Latvia in the EU28

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- 9<sup>th</sup> in Use of Internet
- 10<sup>th</sup> in Connectivity
- 14<sup>th</sup> in Digital Public Services



- 15<sup>th</sup> in Human Capital
- 27<sup>th</sup> in Integration of Digital Technology



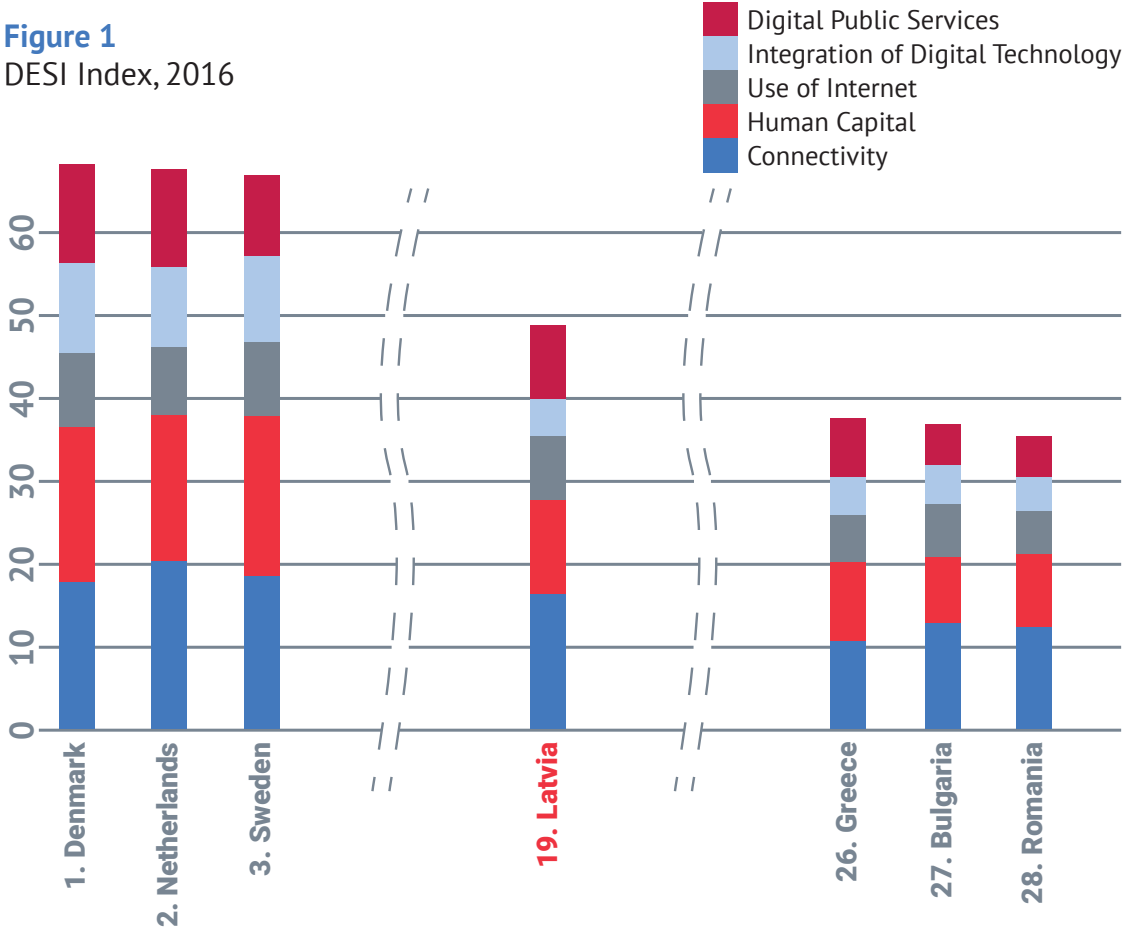
## Digital Map: Latvia in the EU28

**“Digital Economy and Society Index” (DESI)** measures the degree of digital transformation of the EU member states. Namely, the index reports the level of development in the following categories: access, speed and quality of Internet infrastructure (represented by “Connectivity”), digital skills of society (“Human Capital” and “Use of Internet”), digitalisation of businesses (“Integration of Digital Technology”) and public e-services.

According to the DESI Index, Latvia takes the 19<sup>th</sup> place among the EU28, showing many opportunities to accelerate digital transformation. The greatest obstacle for its digital development is the poor performance in Integration of Digital Technology, in which Latvia takes the 27<sup>th</sup> position. This is mostly due to the poor level of engagement in electronic information sharing (management tools, measured by the use of ERP software packages by enterprises).

In terms of Human Capital, which measures the level of digital skills of the society, Latvia ranks 23<sup>rd</sup>. The biggest challenge for improvement is to increase the number of Latvian ICT specialists and STEM (Science, Technology, Engineering, and Mathematics) graduates, for which Latvia ranks only 25<sup>th</sup> and 23<sup>rd</sup>, respectively. On the other hand, Latvia performs very well in Connectivity, occupying the 10<sup>th</sup> position in the EU28 and the 3<sup>rd</sup> among the NMS13 countries. This high rank is mostly due to the mobile broadband coverage (1<sup>st</sup> among the NMS13, 2<sup>nd</sup> in the EU28) as well as the availability and uptake of high-speed broadband Internet (8<sup>th</sup> place). The country also performs very well in terms of Use of Internet – 9<sup>th</sup> position in the EU and 2<sup>nd</sup>, behind Estonia, among the NMS13. These good performances may be explained by the very high use of online news (4<sup>th</sup> place), of video calls (5<sup>th</sup> place), of social networks (6<sup>th</sup> place) and of online banking services (7<sup>th</sup> place).

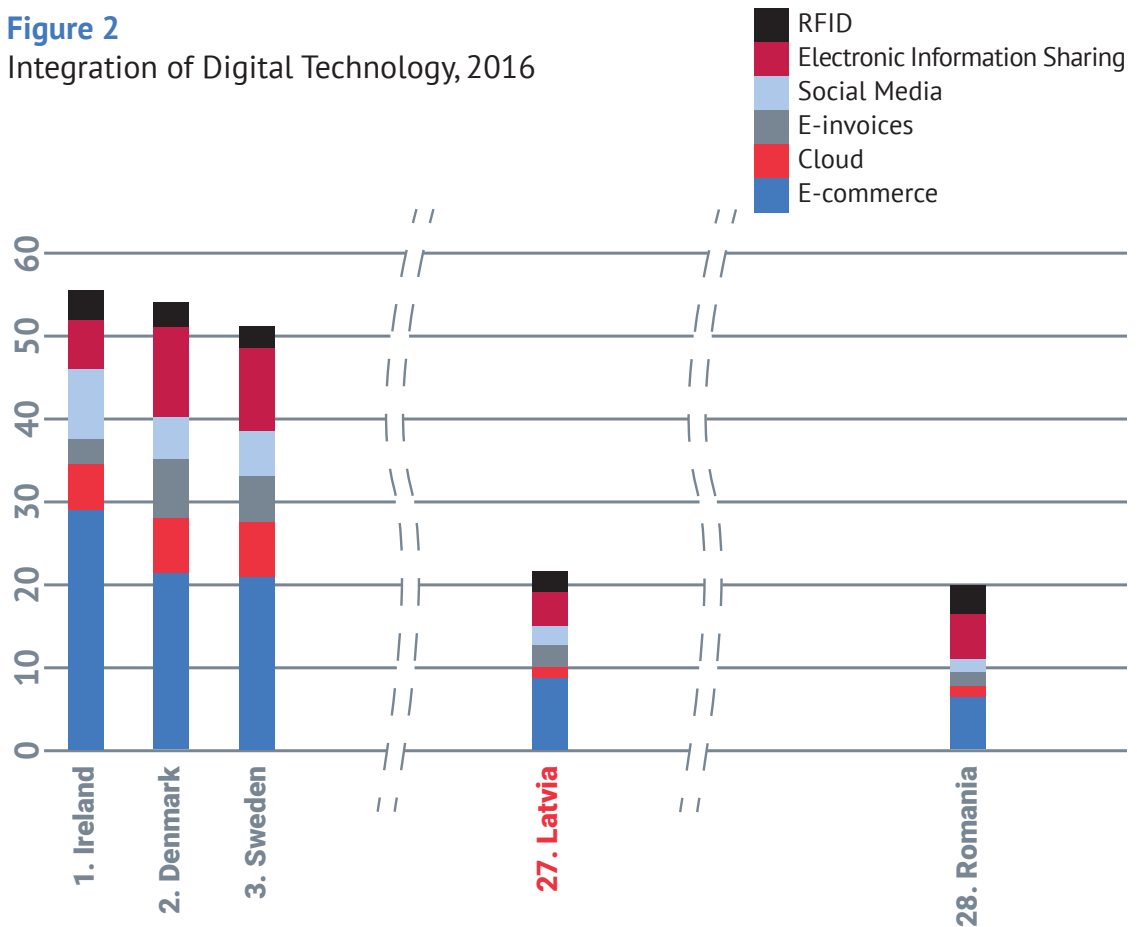
**Figure 1**  
DESI Index, 2016



Source: Digital Agenda for Europe, DESI

Integration of Digital Technology presents the level of digital transformation achieved by enterprises (with more than 10 employees). It is measured by the adoption of digital tools, like cloud computing services, and the engagement in e-commerce. Overall, the country ranks 27<sup>th</sup>, showing a high potential for improvement in this area. More precisely, Latvia is the last among all the EU countries in electronic information sharing (management tools), measured as the use of ERP software packages by enterprises. Moreover, Latvian enterprises rank 25<sup>th</sup> in the EU in usage of cloud computing services and 24<sup>th</sup> in both social media usage, as well as in cross-border e-commerce. Latvian enterprises perform slightly better in the usage of RFID, where they rank 21<sup>st</sup>.

**Figure 2**  
Integration of Digital Technology, 2016



Source: Digital Agenda for Europe, DESI



# Digital Business Environment for SMEs

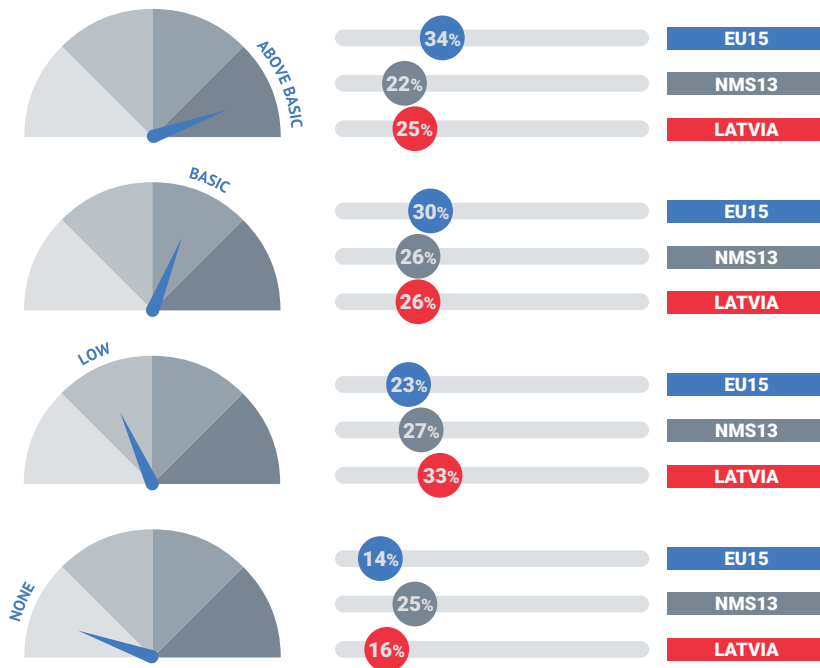
**Digital Business Environment** creates the common framework that enables SMEs to utilise digital technology and facilitates engagement of SMEs in the digital economy.

We assess Digital Business Environment by analysing the development of digital skills and digital infrastructure. More precisely, we consider the efforts of companies in hiring and training digitally skilled people (also, but not exclusively, ICT specialists) and we assess digital infrastructure by the access, affordability, speed and quality of the Internet.

# Digital Skills

The majority of Latvians reports “low” digital skills. Moreover, while one-third of the EU15 citizens is equipped with “above basic” digital skills, in Latvia, only one-quarter of individuals belong to that category.

**Figure 3**  
Levels of digital skills amongst individuals (%), 2015

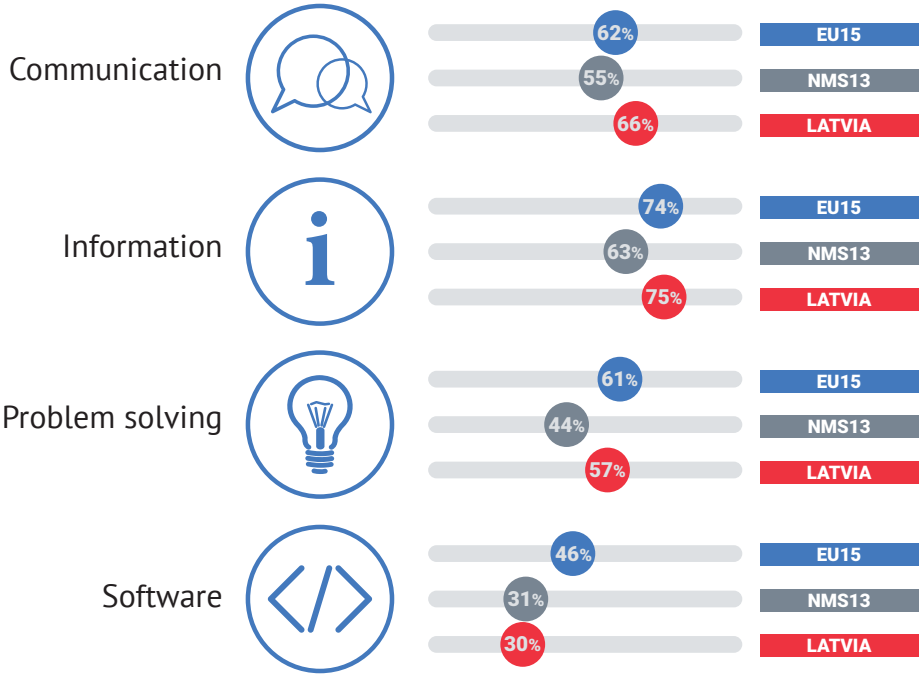


**Above basic skills** refer to the ability to carry out most of the tasks in all of four general categories (Communication, Information, Problem Solving and Software)  
**Basic skills** refer to the ability to carry out one specific task in each category  
**Low skills** refer to users who are unable to perform any tasks in up to 3 categories  
**No skills** refer to users who are unable to perform any tasks in all categories listed including those who have not accessed the Internet in the last 3 months

Source: DELab UW own calculations based on the data from Eurostat

Latvian individuals exceed the EU15 average levels with their “above basic” skills in communication and information. On the other hand, while in the EU15 almost every second individual has “above basic” software skills, in Latvia only every third individual reports “above basic” software skills. However, this result is equal to the average NMS13 level.

**Figure 4**  
Individuals with “above basic” digital skills (%), 2015

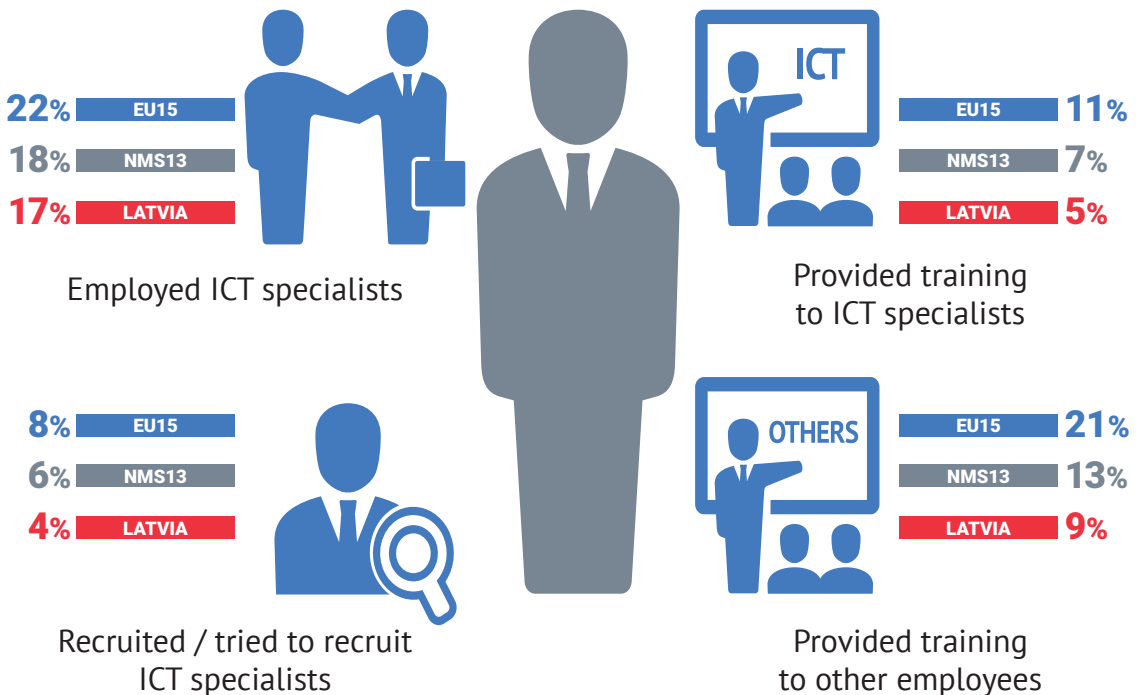


**Communication skills** include the ability to communicate online via e-mail, video calls or the social media  
**Information skills** show the ability to find relevant information online  
**Problem solving skills** represent the ability to manage files, change settings of software and use online services  
**Software skills** include the ability to use word processing, spreadsheet and multimedia editing software

Source: DELab UW own calculations based on the data from Eurostat

The share of SMEs in Latvia that employ ICT specialists is similar to that of the NMS13 but is lower than in the EU15. Only 4% of Latvian SMEs recruited new ICT specialists in the previous year, compared to 8% in the EU15. When it comes to the training of ICT specialists, only one in twenty Latvian SMEs invests in upgrading the ICT-related skills of their specialists, while in the EU15 the level is situated at one in ten. Moreover, while one in five SMEs in the EU15 invests in training to upgrade ICT-related skills of their other employees, in Latvia the level is at one in ten.

**Figure 5**  
SMEs employing and training ICT specialists (%), 2015



Source: DELab UW own calculations based on the data from Eurostat



# Digital Infrastructure

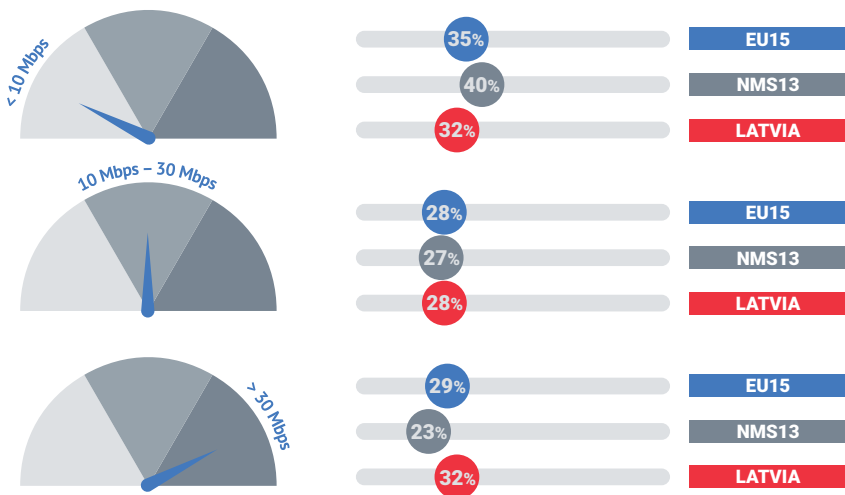
The access to high-speed and good-quality Internet is the cornerstone of digital infrastructure. The share of Latvian SMEs with access to the Internet is at a very similar level as in the EU15. While in the EU15 only 2% of SMEs lack access to the Internet, in Latvia around 3% of SMEs do not have access to the Internet.

**Figure 6**  
SMEs with no Internet access (%), 2015



Up to 32% SMEs in Latvia benefit from a high-speed Internet connection, which is higher than both the NMS13 and the EU15 averages. This probably stems from a very high coverage of FTTP technology in Latvia.

**Figure 7**  
SMEs according to the speed of their fixed Internet connection (%), 2015



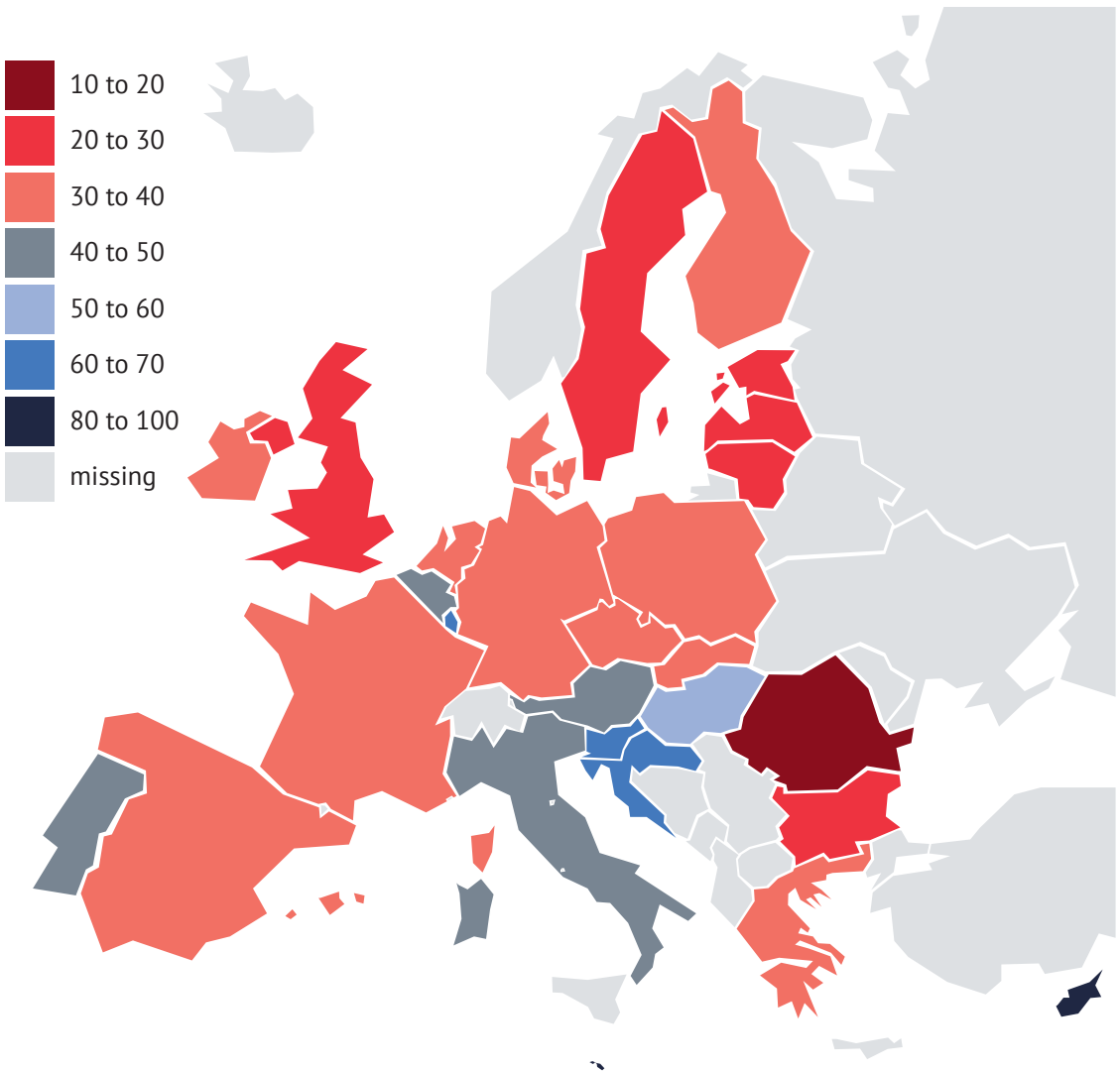
Source: DELab UW own calculations based on the data from Eurostat



Latvia is the third cheapest country in the EU28 in terms of median price of high-speed Internet. The price is also low in comparison to the EU15: while in the EU15 the average median price of a monthly subscription to high-speed Internet reaches 37 euros, in Latvia it costs only 23 euros.

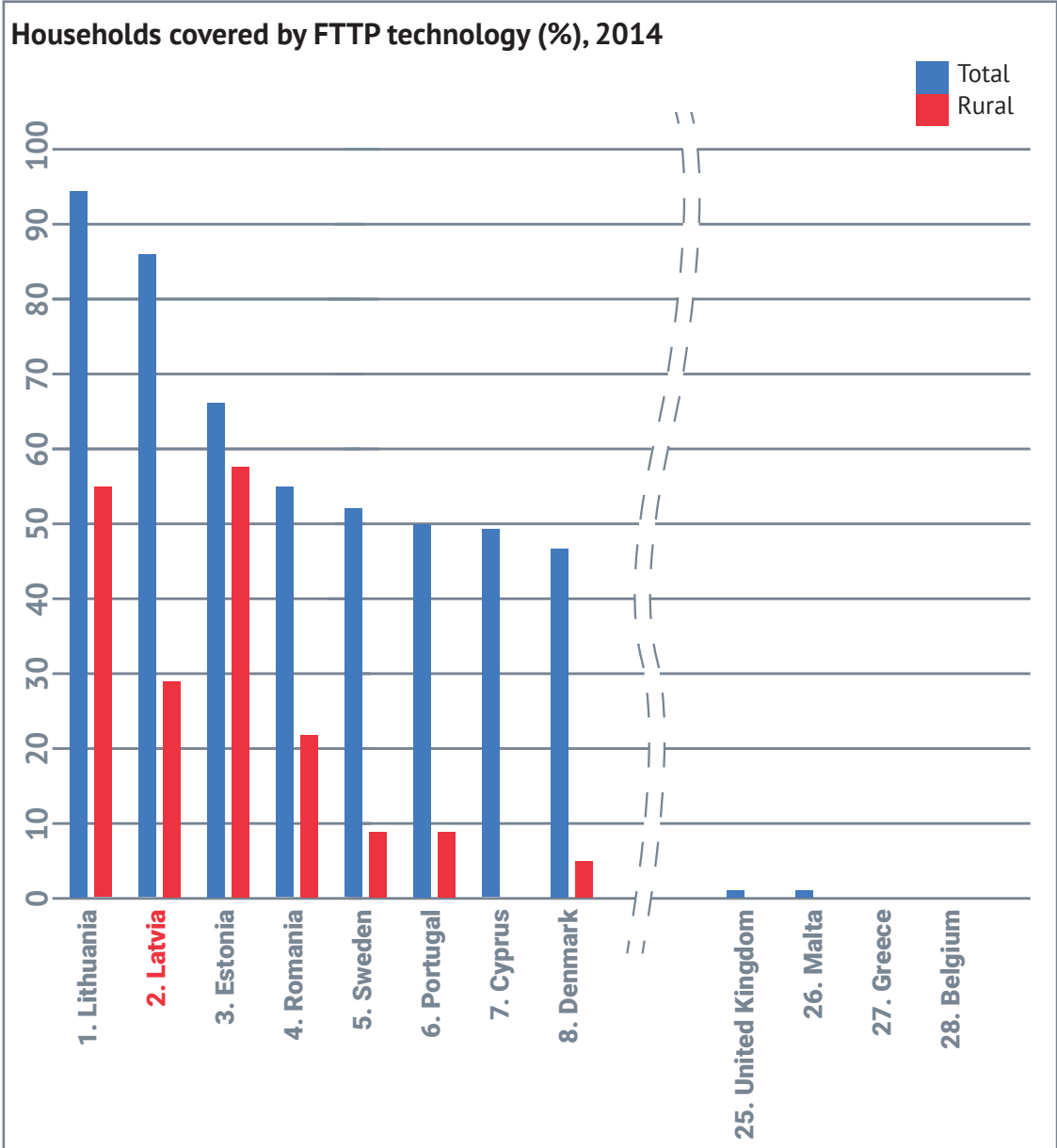
**Figure 8**

Median price of monthly subscription to the Internet (30-100 Mbps) in euros/PPP, 2015



Source: DELab UW own calculations based on the data from Eurostat

Latvia is the second best European country in total coverage of the most advanced broadband technology – which is “Fibre to the Premises” technology (FTTP). FTTP is a pure fibre-optic cable connection running from an Internet Service Provider directly to the user’s home or business.



Source: Eurostat





# Digital Technologies

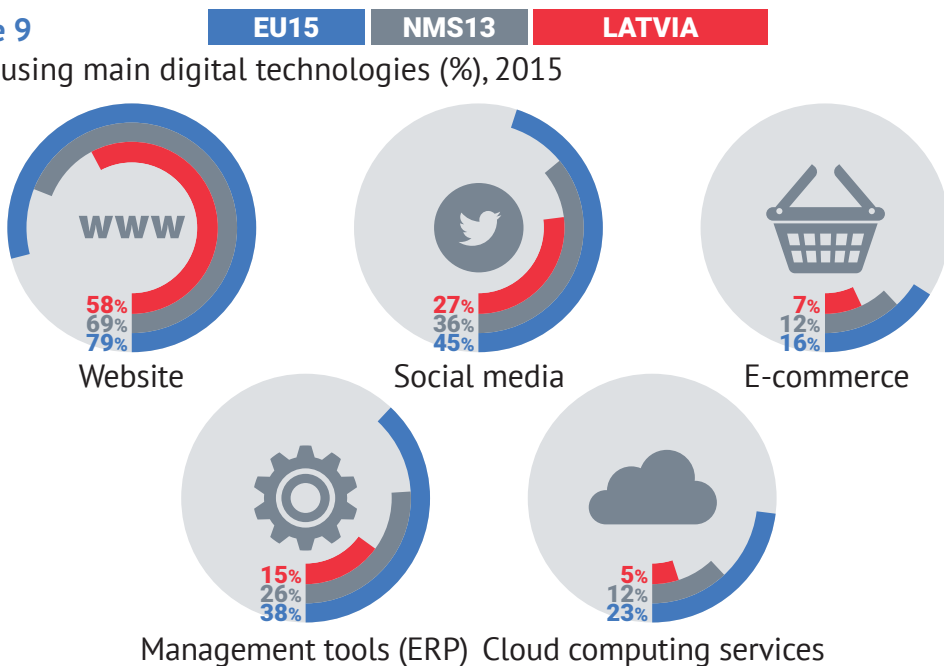
The usage of digital technologies simplifies and accelerates decision making processes within the enterprise; allows more effective business analyses; facilitates the communication with business partners; allows effective image and brand building; and supports the penetration of new markets as well as reaching new customers. To measure the adoption of digital tools we consider the usage of five key technologies: websites, social media, e-commerce, management tools (such as ERP) and cloud computing.

SMEs in Latvia fall behind the performance of enterprises both in the EU15 and in the NMS13 in all of these categories. Although around 60% of SMEs have a website, this is still much lower than the average level in the EU15 (of nearly 80%).

The largest gap appears in the usage of cloud computing services that is four times higher in the EU15 than in Latvia. Furthermore, there is also a big gap in usage of ERP technologies as only 15% of Latvian SMEs use them, compared to 26% in the NMS13 and 38% in the EU15. The adoption of social media and the engagement in e-commerce by Latvian SMEs is also much lower than in other EU countries.

**Figure 9**

SMEs using main digital technologies (%), 2015



Source: DELab UW own calculations based on the data from Eurostat

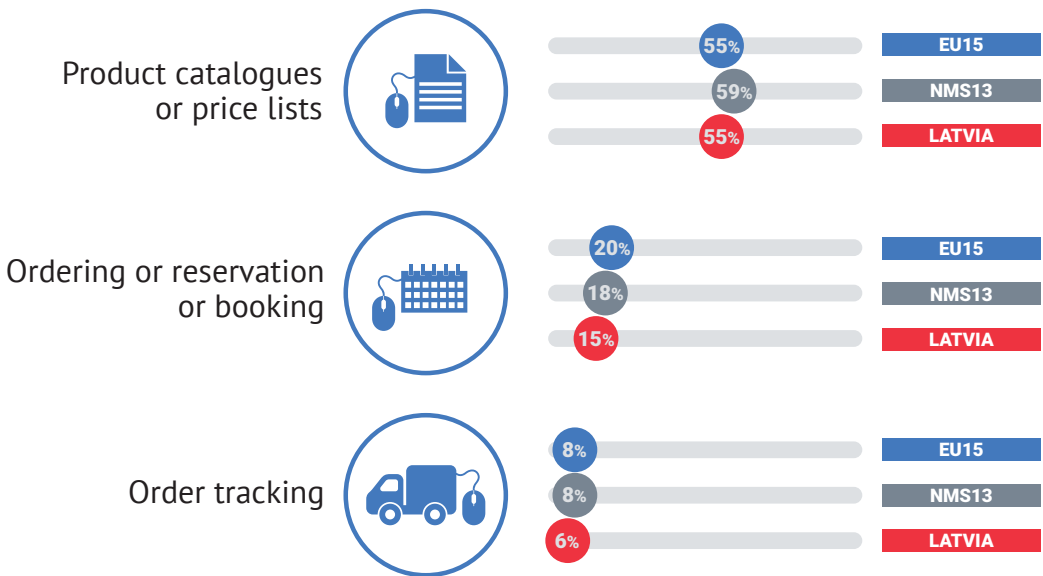


# Websites and Social Media

Only 58% of Latvian SMEs have a website, compared to 69% in the NMS13 and 79% in the EU15. Moreover, those SMEs confine themselves to basic functionalities such as providing product catalogues or price lists.

**Figure 10**

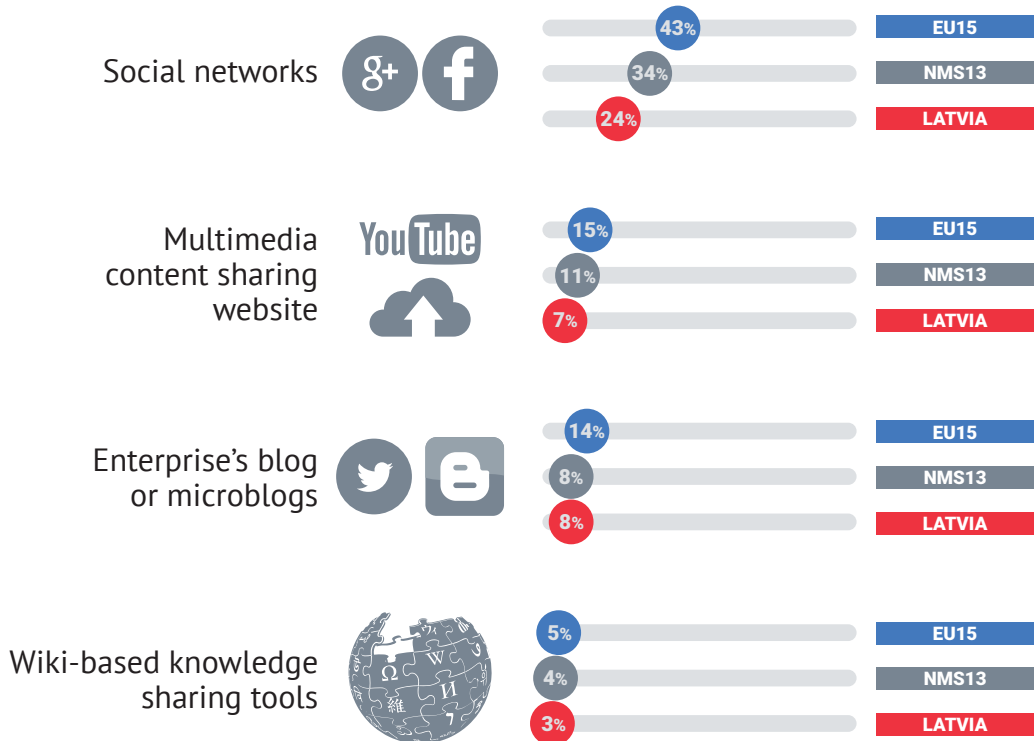
SMEs with websites providing selected services (%), 2015



Source: DELab UW own calculations based on the data from Eurostat

The usage of social media by Latvian SMEs is at a much lower level in comparison with their counterparts in the NMS13 and in the EU15 (27% against 36% in the NMS13 and 45% in the EU15). Latvian SMEs lag behind the EU15 mostly in terms of multimedia content sharing websites (e.g. YouTube): twice less SMEs in Latvia use this channel than in the EU15. The only positive aspect is their slightly higher usage of blogs or microblogs than in NMS13, but they still fall behind the EU15 average.

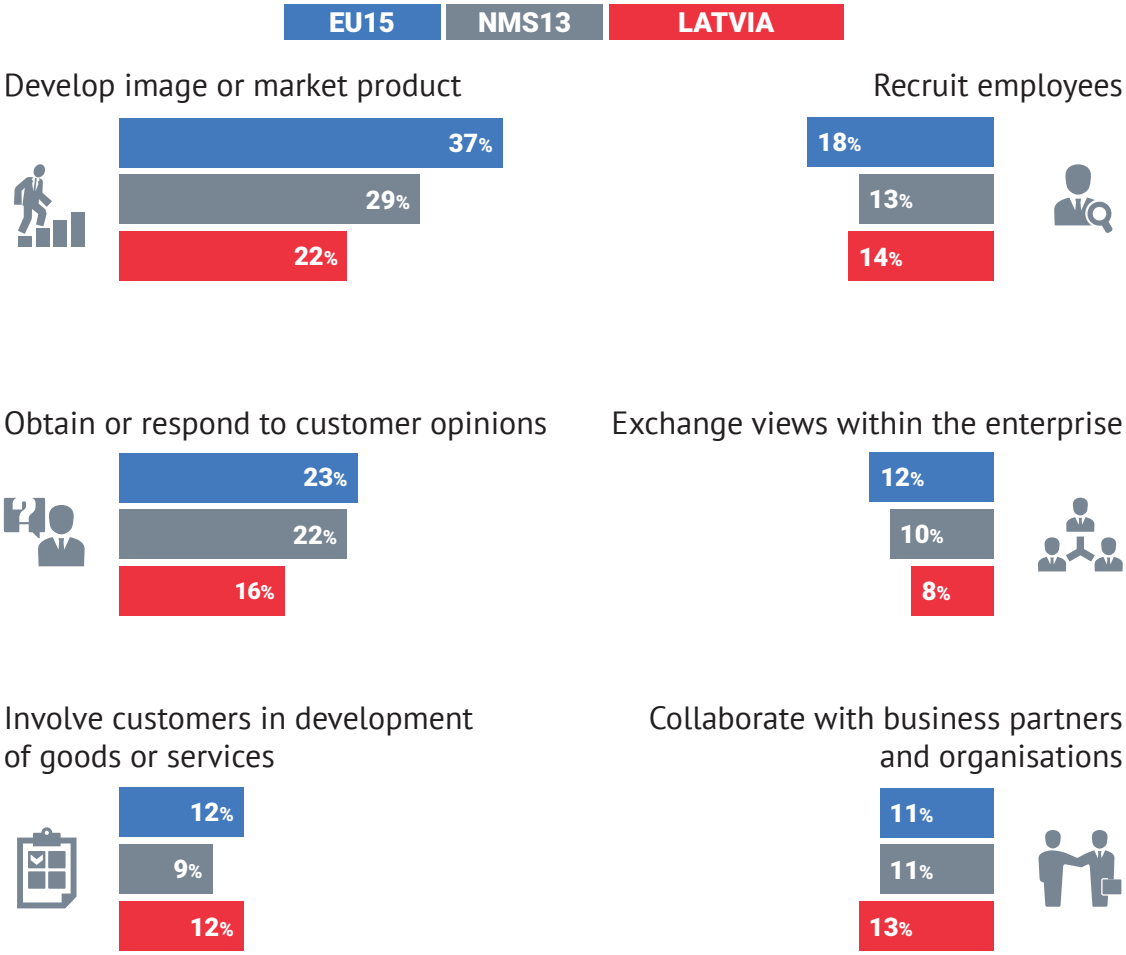
**Figure 11**  
SMEs using social media services (%), 2015



Source: DELab UW own calculations based on the data from Eurostat

Latvian SMEs take a leading position in collaborating with business partners and involving customers in the development of goods or services through social media. On the other hand, even though most Latvian SMEs use social media for developing image or market products and for responding to customers, the gap is still significant with the rest of the EU.

**Figure 12**  
Reasons for using social media services by SMEs (%), 2015



Source: DELab UW own calculations based on the data from Eurostat



## E-commerce

An **e-commerce transaction** is the sale or purchase of goods or services conducted over computer networks

**Business to Consumer (B2C)** refers to sales to private consumers

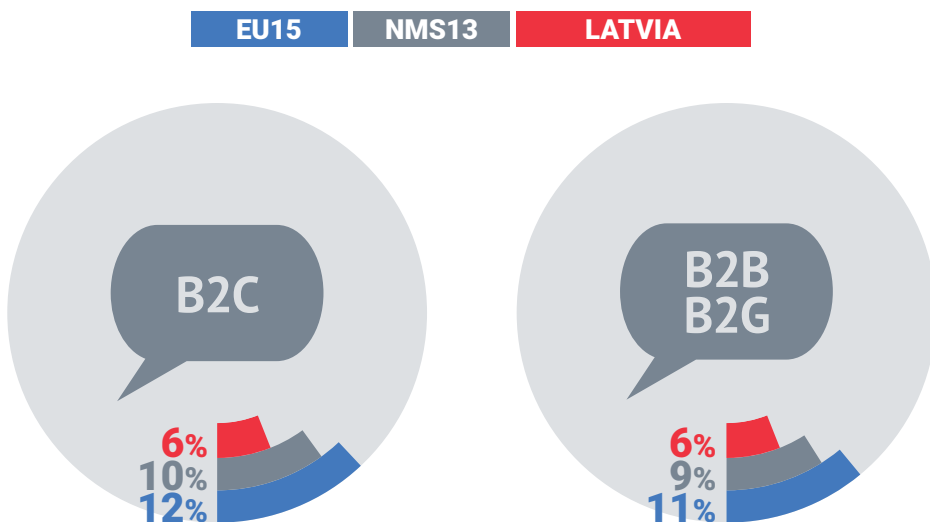
**Business to Business (B2B)** refers to sales to other enterprises

**Business to Government (B2G)** refers to sales to public authorities

Overall, only 7% of SMEs in Latvia conduct sales via websites or apps. It is interesting to note that the same share of Latvian SMEs (6%) use B2C as well as B2B and B2G selling channels, but this is almost twice lower than in the EU15.

**Figure 13**

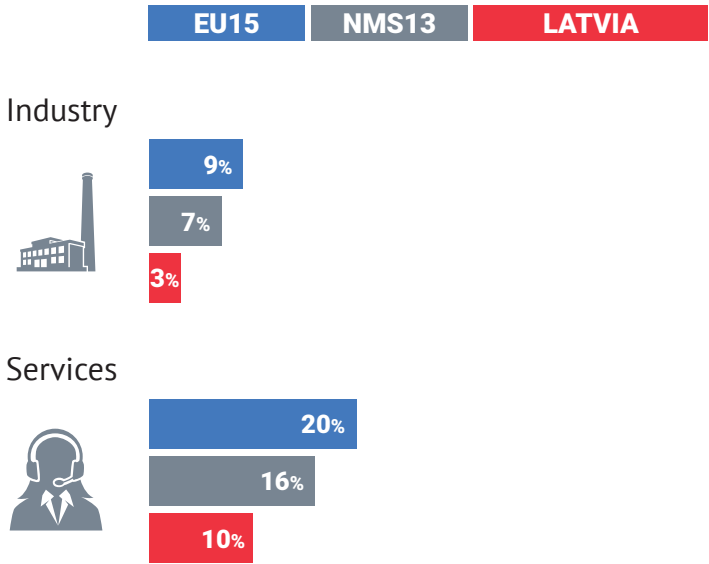
SMEs selling via a website or apps (%), by type of transaction, 2015



Source: DELab UW own calculations based on the data from Eurostat

SMEs in Latvia engage in e-commerce well below the EU15 level, both in industry and services. Overall, only 3% of Latvian SMEs sell via a website or app in industry, and 10% of them in the services sector. More specifically, the share of Latvian enterprises selling online is the highest in tourism (travel agencies - 58%, accommodation providers - 48%), in repair of computers (50%) and in publishing activities (37%).

**Figure 14**  
SMEs selling via a website or apps, according to sectors (%), 2015

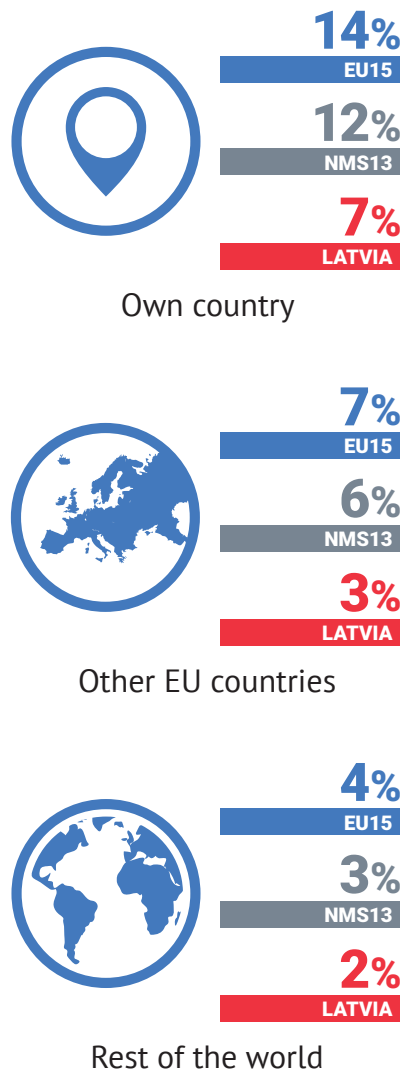


Source: DELab UW own calculations based on the data from Eurostat



Analysing the destinations of e-sales, we need to keep in mind that almost two times less Latvian SMEs are engaged in e-commerce than in the EU15, so the gap in e-sales realised within the country is almost the same. Similarly, the share of SMEs in Latvia that are engaged in cross-border e-commerce is twice smaller than the EU15 average.

**Figure 15**  
SMEs engaged in electronic sales (%), 2015



Source: DELab UW own calculations based on the data from Eurostat



## Management Tools

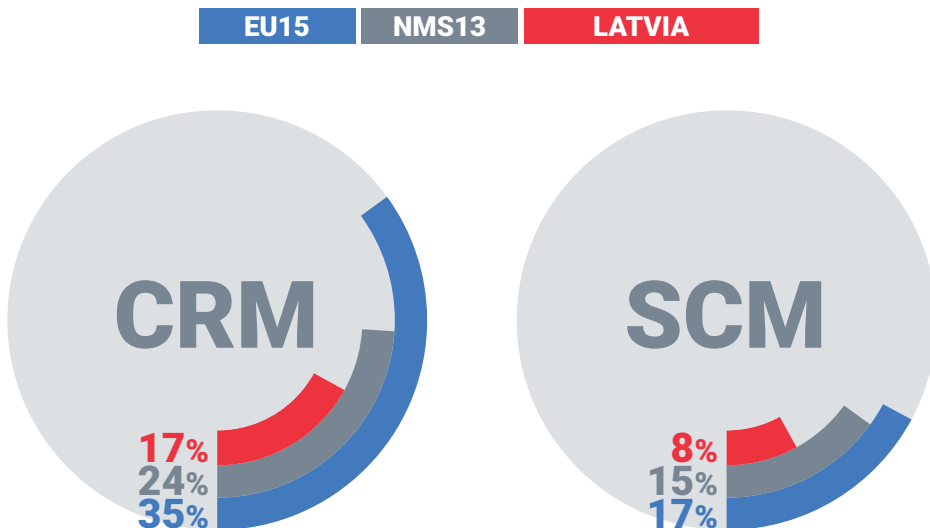
**Management tools (Enterprise Resource Planning - ERP)** enable automatic flow of information between different business functions such as accounting, planning, production and marketing. **Supply Chain Management (SCM)** means exchanging all types of information with suppliers and/or customers about the availability, production, development and distribution of goods or services.

**Customer Relationship Management (CRM)** is a management methodology which places the customer at the centre of the business activity, based on an intensive use of information technologies to collect, integrate, process and analyse information related to the customers.

Very few SMEs in Latvia use technologies for management of processes in comparison with their European counterparts. While in the EU15 around 40% of enterprises employ ERP software, in Latvia only 15% of SMEs benefit from the usage of the latter. Similarly, the share of Latvian SMEs that use CRM software is twice smaller than the share of enterprises utilising CRM in the EU15. Moreover, Latvian SMEs use SCM twice less often than SMEs in the EU15.

**Figure 16**

SMEs using CRM and SCM software (%), 2015



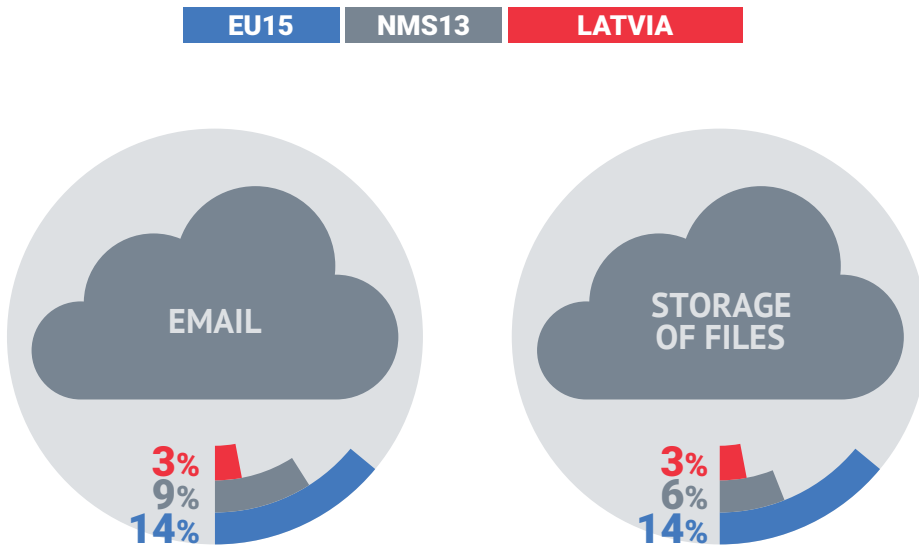
Source: DELab UW own calculations based on the data from Eurostat

# Cloud Computing

**Cloud Computing (CC)** refers to ICT services that are used over the Internet to access software, computing power, storage capacity, etc.

The uptake of cloud computing services by Latvian SMEs falls significantly behind the average level of both the NMS13 and the EU15 in all selected categories, which results from their overall low usage of CC (5%). More precisely, the share of SMEs that use CC services for e-mail, storage of files, office tools and computing power is about four times smaller than in the EU15. Moreover, hosting for database, finance or accounting applications is three times lower in Latvia than in similar enterprises in the EU15. The biggest gap is apparent for CRM software, as it is utilised only by 1% of Latvian SMEs, while in the EU15 the share is almost six times higher.

**Figure 17**  
SMEs buying selected Cloud Computing services (%), 2014

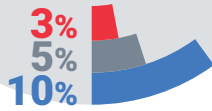


EU15

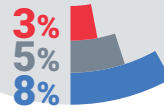
NMS13

LATVIA

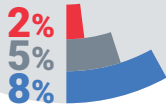
HOSTING  
OF THE ENTERPRISE'S  
DATABASE



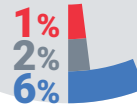
FINANCE  
OR ACCOUNTING  
APPLICATIONS



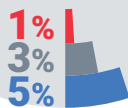
OFFICE



CRM



COMPUTING  
POWER TO RUN  
THE ENTERPRISE'S  
OWN SOFTWARE



Source: DELab UW own calculations based on the data from Eurostat



# Conclusions

## What have we found?

- The Latvian SMEs operate in a relatively supportive digital environment: the Internet infrastructure is good and Latvians report promisingly high digital skills in communication, information and problem solving.

## What are the challenges?

- All in all, the Latvian SMEs have not embraced digital technologies. Particularly, the usage of cloud computing and management tools is alarmingly low. The usage of websites, social media and engagement in e-commerce is also low in comparison with the EU15. However, Latvian costumers do not create barriers for the SMEs to increase their online sales, since Latvian society has well developed digital skills.
- Latvian employees have relatively weak software skills.
- The entrepreneurs show little interest in upgrading their employees ICT related skills.

## What needs to be done?

In Latvia almost all the ingredients of digital turnover seem to be in place. Latvian SMEs need a final push to enter the path of digital transformation.

- The focus should be put on strengthening e-leadership in SMEs focused on raising the awareness of the benefits of advanced digitalisation, such as enhanced market opportunities and facilitations in digital management.
- The digital potential of Latvian workforce should be used for building the digital competitive advantage of the Latvian SMEs. The entrepreneurs need to understand the crucial importance of employing ICT specialists and investing in ICT-related training for their employees focused on software skills, i.e. the ability to use diverse programmes and apps to boost the productivity and sales of their enterprise.





Digital Economy Lab (DELab) is a research centre established in 2014 within the University of Warsaw to accelerate the development of digital economy and society by providing high-quality research on the impacts of digital transformation and innovation. By application of data science methods DELab examines how digital markets, skills and societies build smart economies, businesses and governance. We deliver policy recommendations on how to better meet the challenges of global digitalisation. Our studies promote entrepreneurship and enhance society's awareness of the benefits of digital transformation. DELab's interdisciplinary team consists of professors and young researchers from various academic backgrounds including economics, sociology, law, administration, IT, European integration, philosophy, political sciences, globalisation, management and entrepreneurship.

