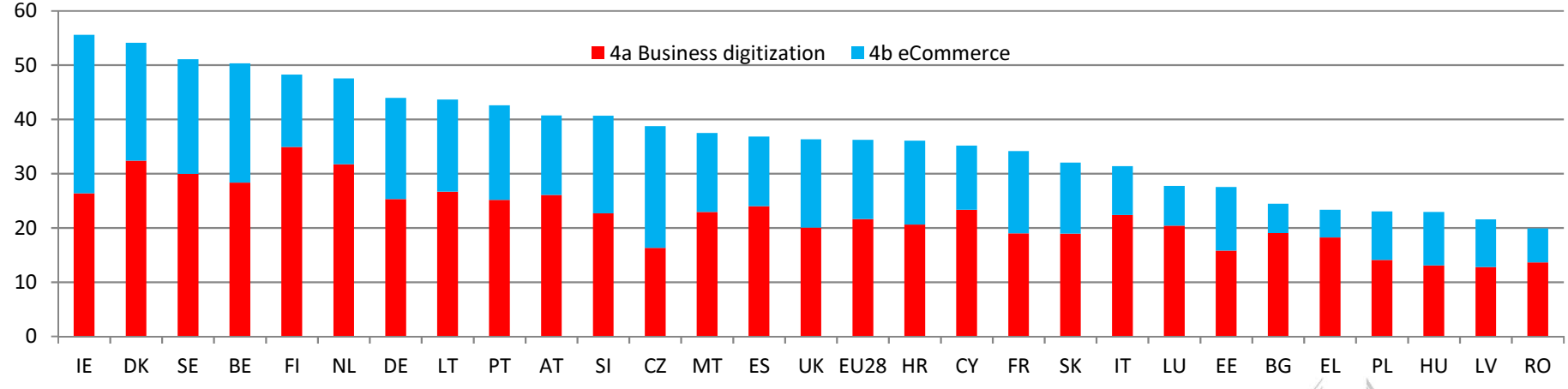
Integration of Digital Technology

On Integration of Digital Technology, Ireland scored highest, followed by Denmark, Sweden and Belgium. Romania, Latvia and Hungary scored lowest.

Integration of Digital Technology covers (a) 'business digitisation' and (b) 'eCommerce'. 'Business digitisation' has five indicators (as % of firms using): electronic information sharing, RFID, social media, eInvoices and cloud solutions. eCommerce has indicators the percentage of small and medium-sized enterprises (SMEs) selling online, eCommerce turnover as a percentage of total turnover of SMEs, and the percentage of SMEs selling online cross-border.

	EU-28
4a1 Electronic Information Sharing % enterprises (no financial sector, 10+ employees)	36 % (2015)
4a2 RFID % enterprises (no financial sector, 10+ employees)	n.a.
4a3 Social Media % enterprises (no financial sector, 10+ employees)	18 % (2015)
4a4 eInvoices % enterprises (no financial sector, 10+ employees)	n.a.
4a5 Cloud % enterprises (no financial sector, 10+ employees)	n.a.
4b1 SMEs Selling Online % SMEs (no financial sector, 10-249 employees)	16 % (2015)
4b2 eCommerce Turnover % turnover of SMEs (no financial sector, 10-249 employees)	9.4 % (2015)
4b3 Selling Online Cross-border % SMEs (no financial sector, 10-249 employees)	7.5 % (2015)

DESI 2016, Integration of Digital Technology dimension, by country



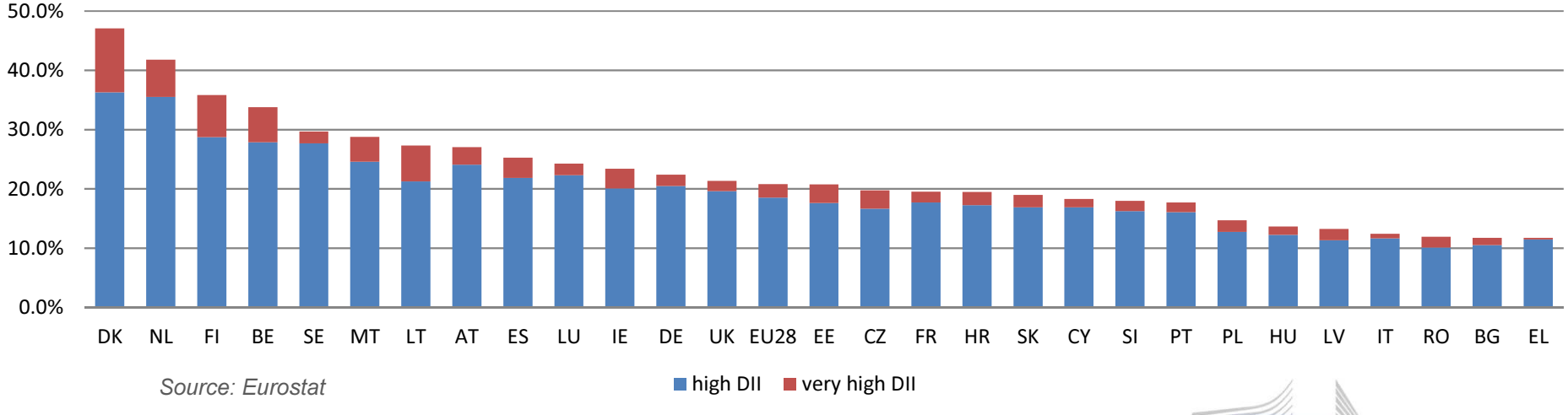
Source: European Commission, Digital Scoreboard

Only one company out of five in the EU-28 is highly digitised, but the situation across countries is varied: from one out of two in Denmark to one out of nine in Greece and Bulgaria.

The Digital Intensity Index (DII) is a micro-based index that measures the availability to the firm of 12 different digital technologies: the internet for at least 50 % of employed persons, recourse to ICT specialists, fast broadband (30 Mbps or above), mobile internet devices for at least 20 % of employed persons, website, a website with sophisticated functions, social media, ERP, CRM, electronic sharing of supply chain management information, eCommerce turnover accounting for over 1 % of total turnover, business-to-consumer (B2C) web sales of over 10 % of total web sales. The value for the index therefore ranges from 0 to 12.

Only in five EU countries is the percentage of firms with a very high DII (i.e. possessing at least 10 out of the 12 monitored digital technologies) above 5 %: DK, NL, FI, BE and LT. In the first four countries at least one third of firms also have a high or very high DII (i.e. firms have at least 7 out of the 12 monitored digital technologies). In IT, RO, BG and EL, less than one firm out of eight has invested heavily in digital technologies (i.e. has a high DII).

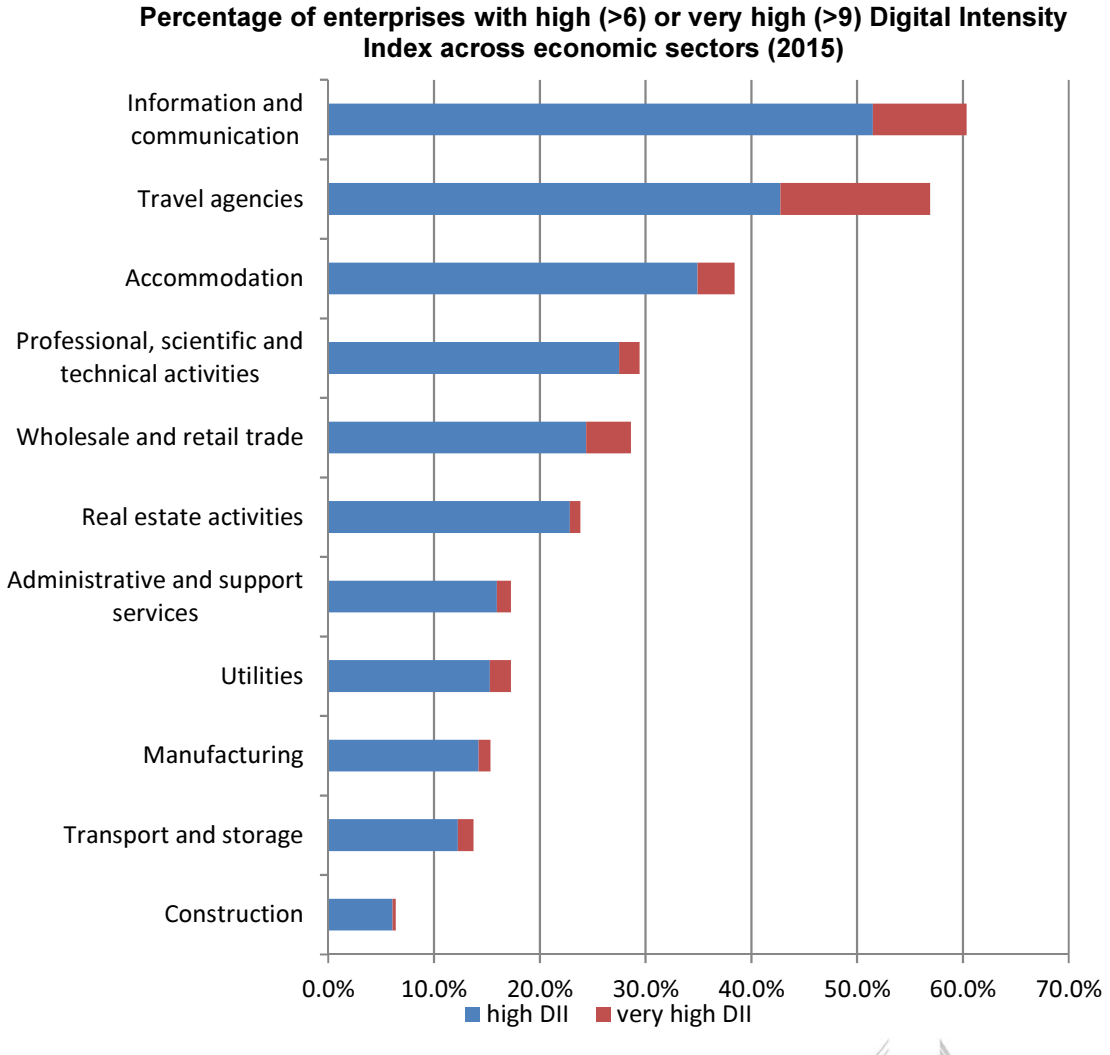
Percentage of enterprises with a high (>6) or very high (>9) Digital Intensity Index across EU countries (2015)



Source: Eurostat

In some economic sectors* digital business models are clearly visible (e.g. travel agencies, accommodation) while other sectors have strictly analog business models (e.g. construction).

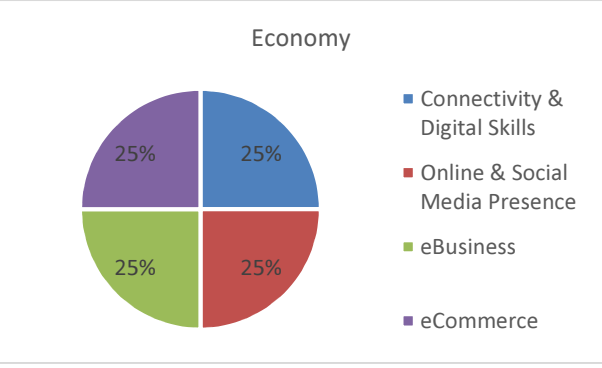
It was expected that businesses in the information and communication services sector would have high levels of digitisation (60 %). However, the extent to which some sectors have been transformed by the emergence of digital business models is perhaps more surprising. In the travel agency sector, 57 % of businesses are high adopters of digital technologies. In the accommodation sector, 38 %have a high or very high DII. Some sectors are still impervious to digital change: in the construction sector only 6 % of firms have a high or very high DII.

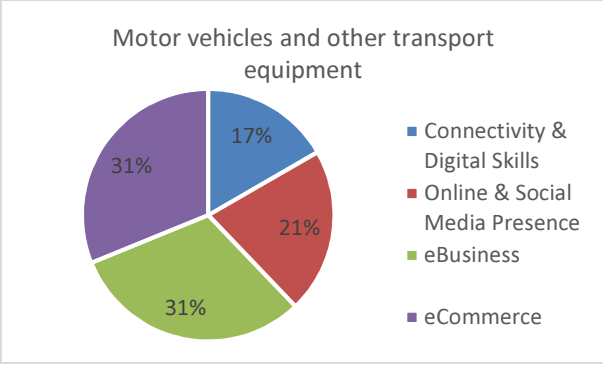


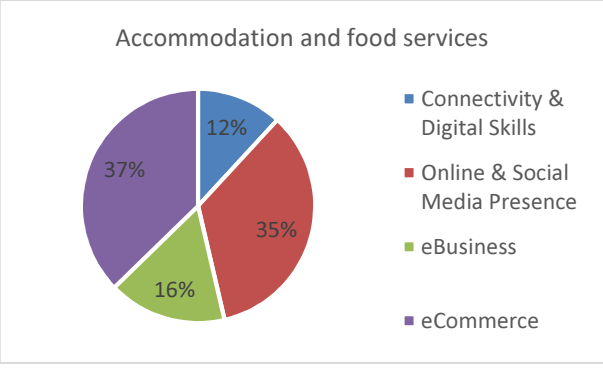
* The surveyed sectors include all the market economy with the exception of financial services, agriculture and mining (i.e. NACE rev 2 sectors 10 to 63 and 68 to 82).

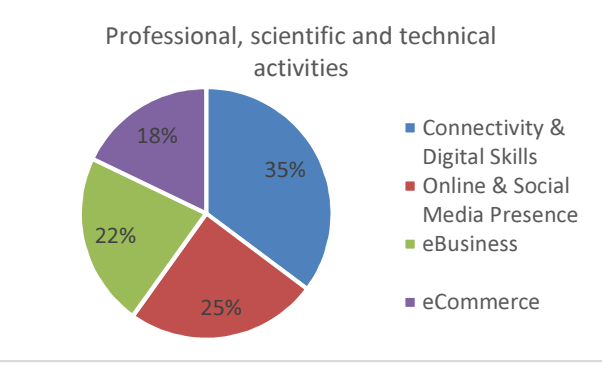
The diversity of digital tools adopted in different economic sectors reflects the diversity of digital business models adopted by their enterprises.

ICT solutions adopted in different economic sectors









Source: European Commission calculations based on Eurostat data

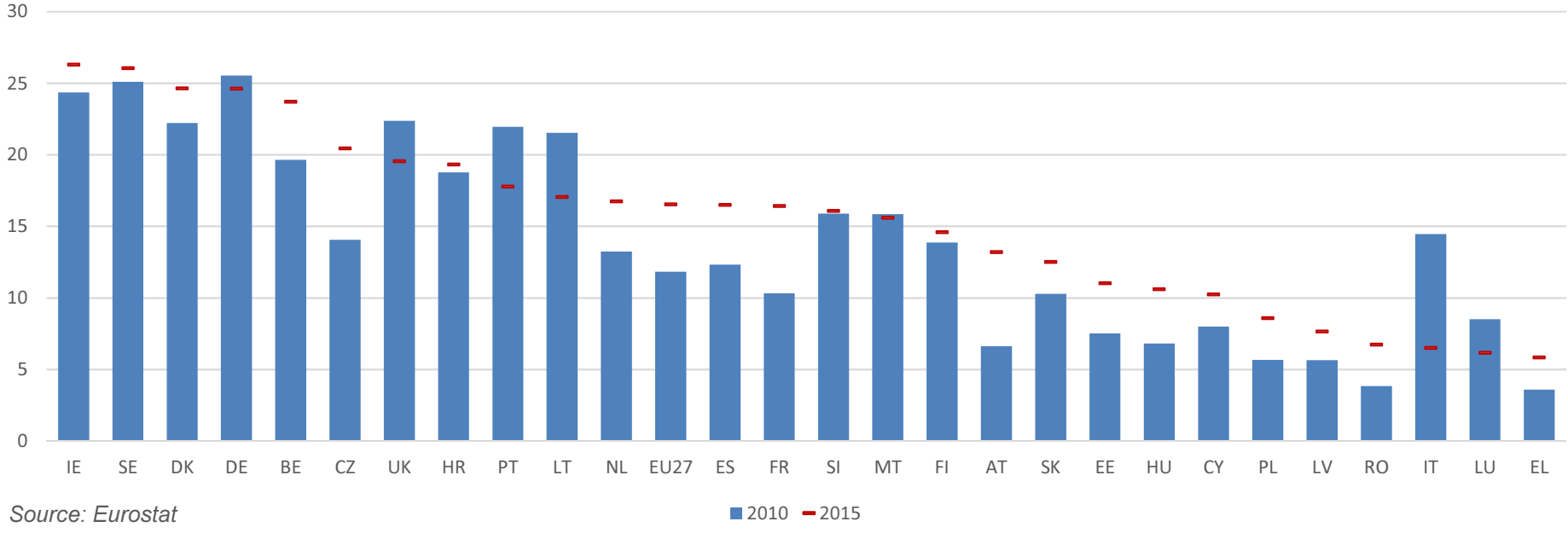
By looking in more detail at the ICT solutions adopted by firms in different sectors we discover differences not only in level but also in composition. For example, businesses that produce motor vehicles and transport equipment invest more heavily in eBusiness (e.g. ERP, CRM) and do more eCommerce than the rest of the economy. On the other hand, businesses in the accommodation and food services sector need to have well-developed websites and social media to remain competitive, and their online sales channel is very important to them. For professional, scientific and technical activities' firms it is very important to have a well-developed broadband infrastructure and lots of connected employees and ICT specialists.

eCommerce – slow progress in digital sales by companies in Europe.

Progress in online sales by European companies is slow. 16.8 % of them sell online, which represents an increase of only 3.5 percentage points over five years. Ireland saw a bigger than average increase and is in the lead.

Large companies are more active, with 38 % selling online. This represents a gain of 7 % points over the last five years. Thus the gap between SMEs and large companies is increasing.

Enterprises using a computer network for sales (at least 1 %) during the previous year (2010 2015)



Source: Eurostat

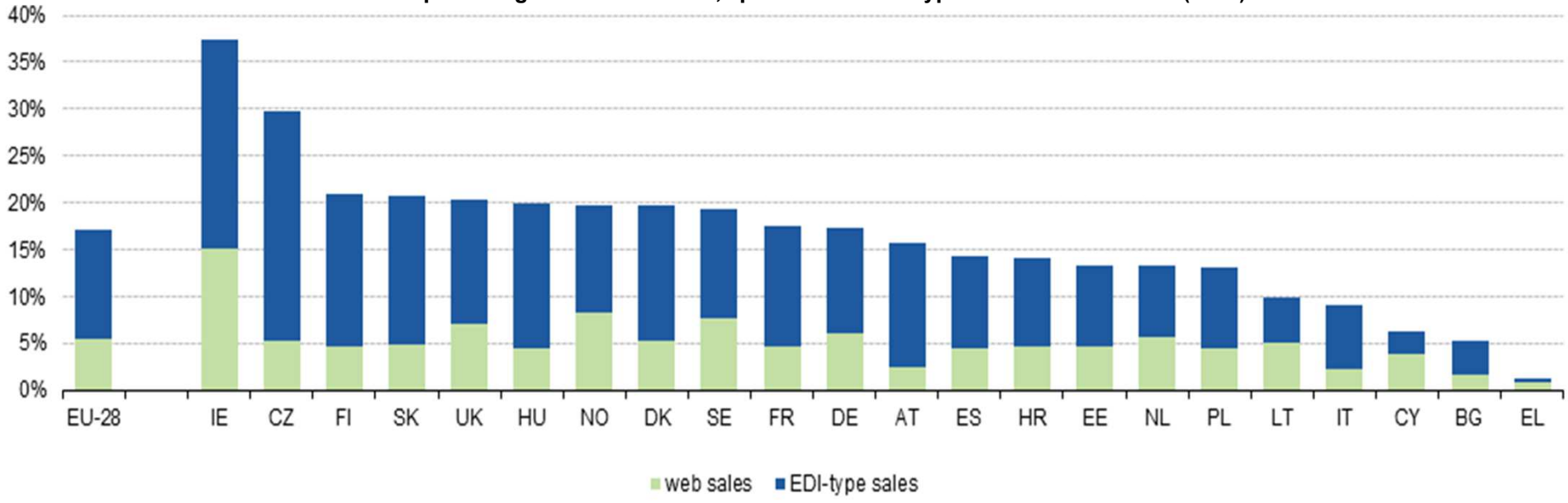
European Commission

Web and EDI as different types of eCommerce.

eCommerce can be broadly divided into two types: web sales and EDI-type sales, according to the way customers place orders for products. In the EU-28, firms made 17 % of their total turnover from e-sales in 2015. Turnover from *EDI-type sales* accounted for 12 % of total turnover, while the turnover from *web sales* accounted for only 5 %. EDI stands for Electronic Data Interchange and it is a standard for the electronic transmission of data suitable for automated processing. It's normally a standard used in B2B transactions to exchange documents such as purchase orders and invoices.

That 5 % was made up of 3 % from e-sales to other enterprises and public authorities and 2 % from e-sales to private consumers. The share of total turnover obtained from *EDI-type sales* ranged from less than 1 % in Greece to 24 % in the Czech Republic and 22 % in Ireland. The share of total turnover from *web sales* ranged from 1 % in Greece to 15 % in Ireland.

Turnover from online sales as percentage of total turnover, split between EDI-type sales and web sales (2015)



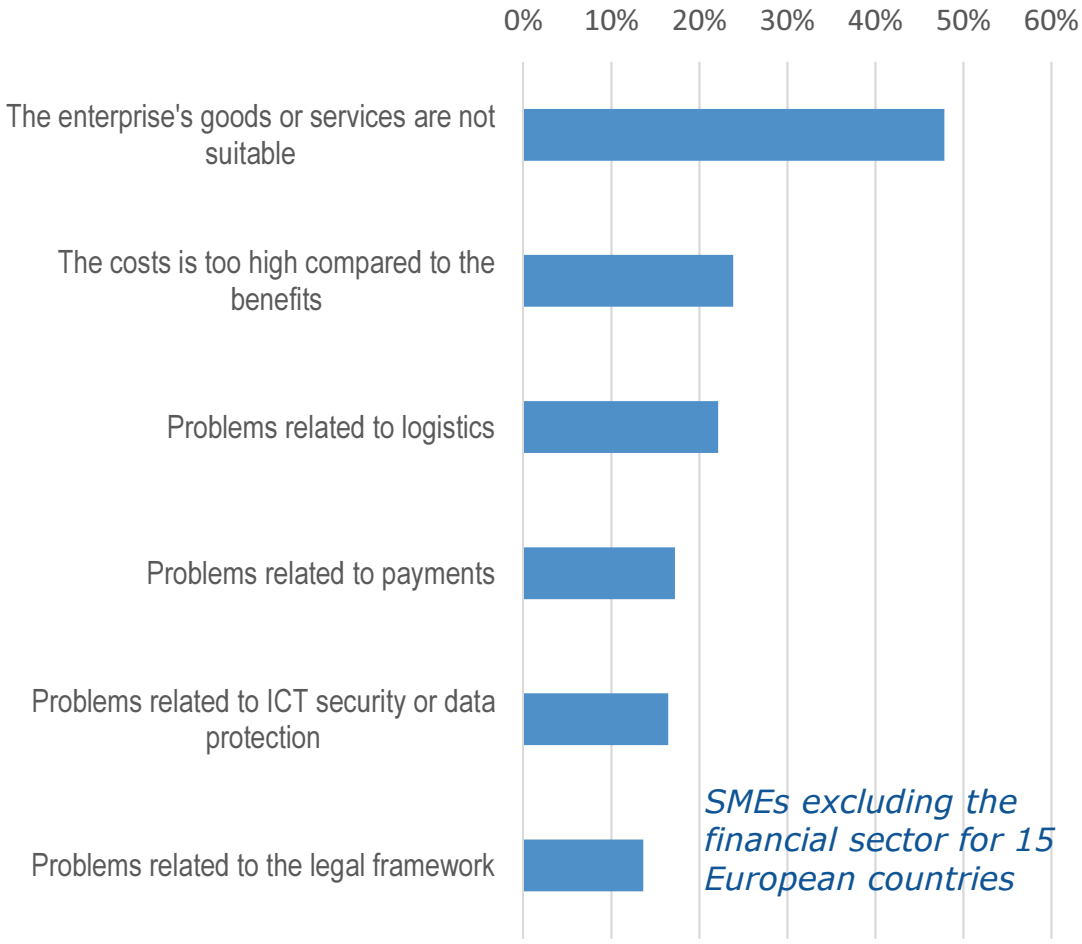
Source: Eurostat

* EDI stands for Electronic Data Interchange and it is a standard for the electronic transmission of data suitable for automated processing. It's normally a standard used in B2B transactions to exchange documents such as purchase orders and invoices.

Obstacles for SMEs to sell on the web.

SMEs (10-249 employees) that do not sell on the web give as their main reason that their products and services are not suitable. This might be reflected by the second most common obstacle: that the cost of investing in web sales is too high compared to the benefits.

In general, SMEs are more concerned about most of the barriers to online sales than large firms. Selling online requires an up-front investment (in money but also in time, e.g. to research legislation) which larger companies can afford more easily.



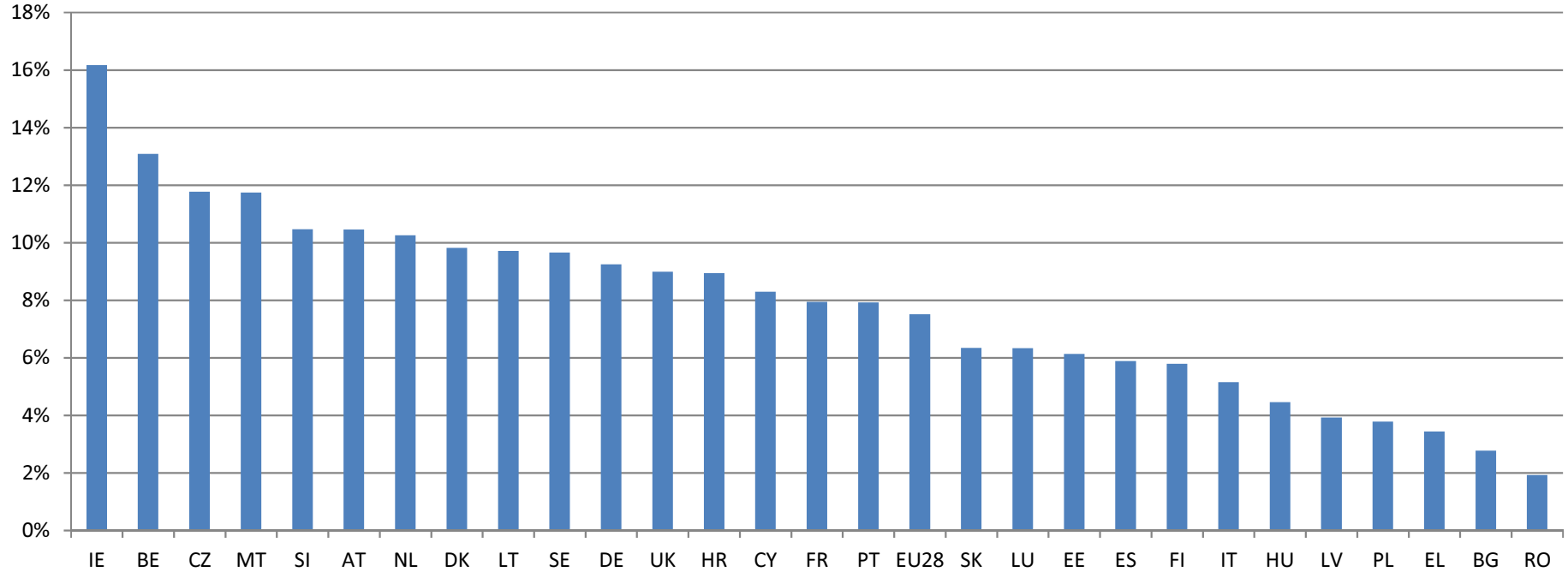
Source: Eurostat

Cross-border eCommerce among SMEs.

Businesses benefit from cross-border e-commerce by exploiting economies of scale which reduce costs, increase efficiency and promote competitiveness, improving total factor productivity. In many cases, without these economies of scale an online business might not be viable at all. This could be especially important for SMEs that remain confined to a small home market with high production costs.

However, only 7.5 % of European SMEs sell online to other Member States, an increase of 1 percentage point since 2013. At the same time 23 % of large enterprises do so.

SMEs (10-249 persons employed) with electronic sales to other EU countries in the last calendar year (2015)



Source: European Commission, Digital Agenda Scoreboard

EU Enterprises are still not enough prepared to face security risks.

Having a formal security policy is a basic requirement for effectively addressing threats. This was true for 64 % of large firms in 2010, and now 72 %. But 11 % had not reviewed their security plans in the previous two years, so they risk becoming outdated in a quickly changing environment.

SMEs are more rarely equipped with security plans, (nevertheless improving from 24 % to 30 % between 2010 and 2015), but the main difference between them and large business is that they rely mainly on external suppliers to run such specialist functions, justifying recent attention to reinforcing EU industry in this field.

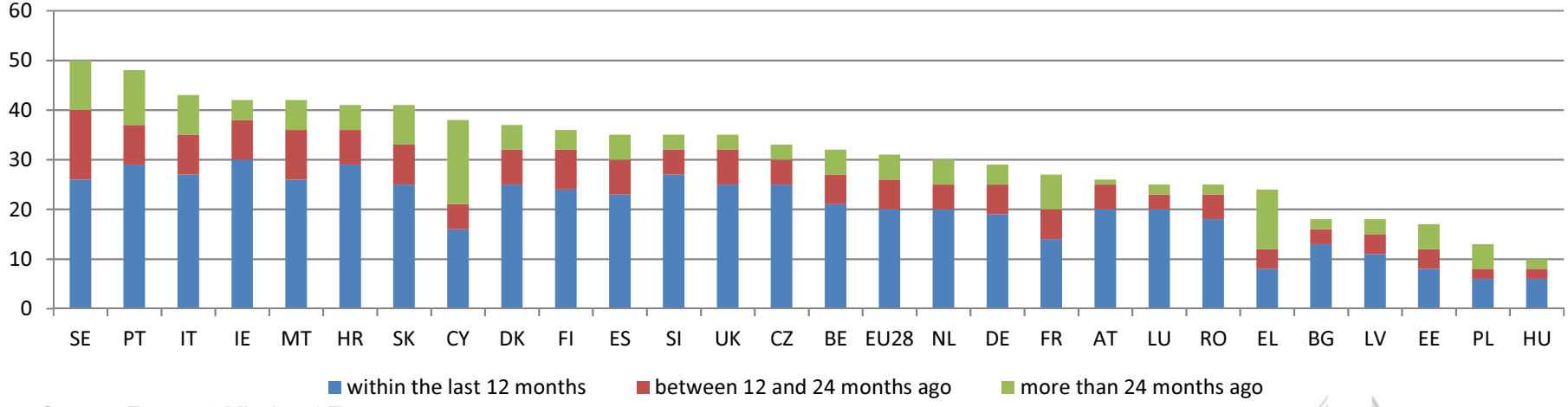
Only 20 % of EU companies have recently updated their security plans.

Percentage of enterprises with a formally defined ICT security policy by size of enterprise (2015) and degree of outsourcing

Enterprises with a formally defined ICT security policy (as of 2015)	Yes	No
Large enterprises (250+)	72.3 %	27.4 %
SMEs (10-249)	30.4 %	65.5 %

If yes, who mainly performs security and data protection ICT specialist functions?	External suppliers	Own employees
Large enterprises (250+)	22.8 %	47.6 %
SMEs (10-249)	17.8 %	11.0 %

Percentage of enterprises with a formally defined ICT security policy by date of latest update (2015)



Source: Eurostat. Missing: LT