Skills Gaps related to e-commerce in Portugal

WP2 "National Report"

Country: Portugal

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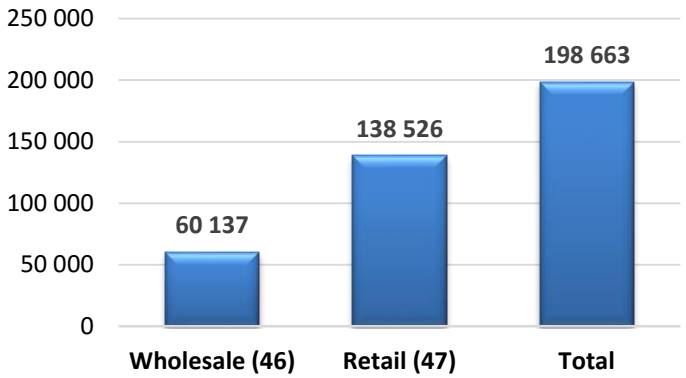
I - State of the art of the commerce sector on e-commerce, opportunities, barriers and challenges: statistics

1 - General Statistics of the Sector (separated by wholesale and retail and given in total and %)

a. Number of enterprises

As we can see in the chart below, in 2013, 198,513 Portuguese companies belonged to the commerce sector, of which 60,052 pertained to the subsector of wholesale (NACE 46 REV.3) and the remaining 138 461 (about 70%) to the sub-sector of retail (NACE 47 REV.3).

Chart 1 - Number of Companies in the commerce sector Wholesale and Retail, 2013



Source: National Statistics Institute (INE) - Department of Economic Statistics - Business Statistics Service - Integrated Accounting System for Enterprise.

b. Number of enterprises per size

Like the rest of the Portuguese companies, the overwhelming majority of enterprises in the commerce sector are micro and small, representing these businesses, 93% of total wholesale companies and 97% of total retail firms (Chart 2).

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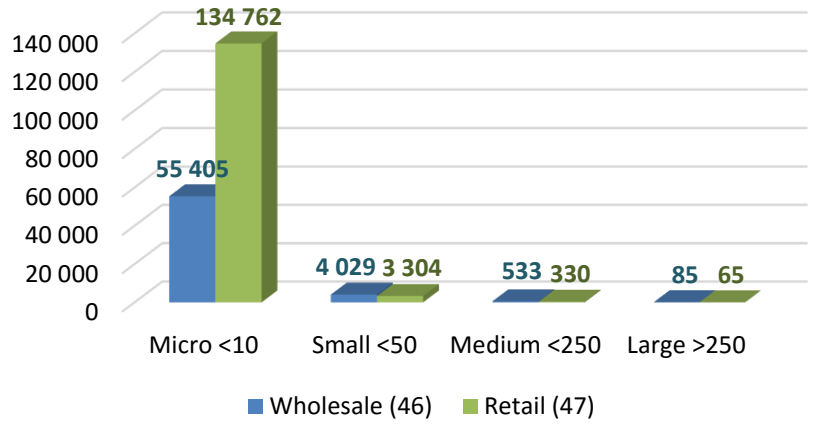
Chart 2 - Number of enterprises in the commerce sector Wholesale and Retail by size, 2013 (%)



Source: National Statistics Institute (INE) - Department of Economic Statistics - Business Statistics Service - Integrated Accounting System for Enterprise.

c. Turnover

The entire turnover in the commerce sector, in 2013, exceeded EUR 104 billion (Table 1) and the wholesale sub-sector was responsible by 59% of this amount.

Table 1 - Turnover (€) of enterprises in the commerce sector Wholesale and Retail, by echelon of people employed, 2013

	Persons employed by company size					
Economic Activity (Subclass - NACE 47 Rev. 3)	Less than 10 persons	10 - 49 persons	50 - 249 persons	250 and more persons	Total	%
Wholesale trade, except of motor vehicles and motorcycles	17 203 112 454 €	19 731 743 127 €	19 974 556 863 €	4 489 948 741 €	61 399 361 185 €	59%
Wholesale trade, except of motor vehicles and motorcycles (%)	28%	32%	33%	7%	100%	
Retail trade, except of motor vehicles and motorcycles	14 483 808 502 €	7 984 558 594 €	4 053 268 815 €	16 588 756 683 €	43 110 392 594 €	41%
Retail trade, except of motor vehicles and motorcycles (%)	34%	19%	9%	38%	100%	
Total	31 686 920 956 €	27 716 301 721 €	24 027 825 678 €	21 078 705 424 €	104 509 753 780 €	

Source: National Statistics Institute (INE) – on-line data: www.ine.pt.

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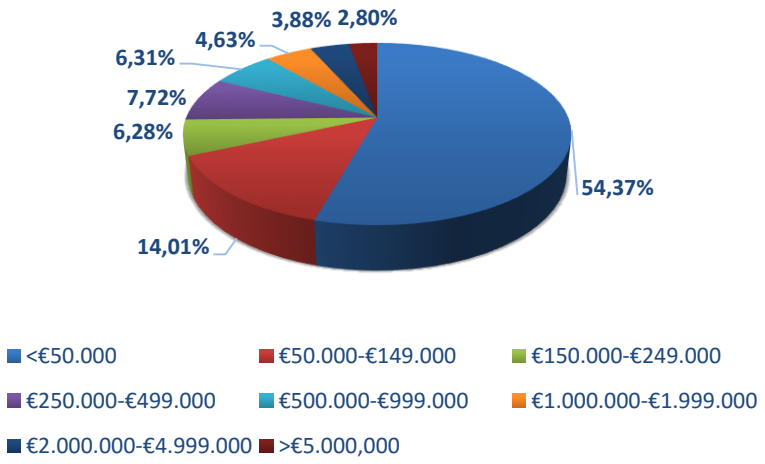
Analyzing the table above, it appears that in the wholesale sub-sector, large companies (with 250 employees or more) contributed with 7% of the total turnover value and companies with 50 employees or less, concurred with 60% for this amount.

In addition, 38% of the total turnover measured in retail enterprises, stemmed from companies with more than 250 employees, yet these entities only represented 0.05% of all enterprises belonged to this sub-sector. On the other hand, the vast majority of companies in the retail sub-sector, this is, micro enterprises (97.39%), contributed just with 34% of total turnover.

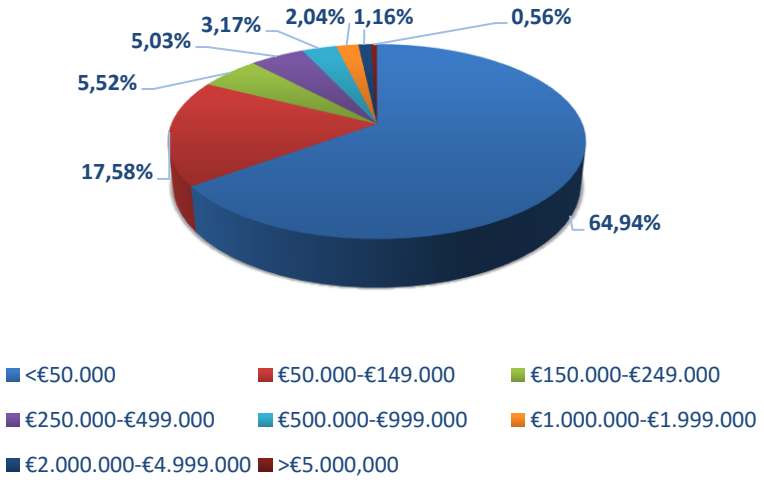
Most companies in the sector had a turnover under € 50,000, both in wholesale (54.37%) (Chart 3) and in retail (64.94%) (Chart 4).

Chart 3 - Companies in the wholesale subsector, by level of turnover, 2013 (%)



Source: National Statistics Institute (INE) - Department of Economic Statistics - Statistics Enterprise Integrated Business Accounts System Service.

Chart 4 - Companies in the retail subsector, by level of turnover, 2013 (%)



Source: National Statistics Institute (INE) - Department of Economic Statistics - Statistics Enterprise Integrated Business Accounts System Service.

2- Employment situation of the sector (separated by wholesale and retail and given in total and %)

a. Number of persons employed

The commerce sector is responsible for employing almost 21% of the total Portuguese employees (Chart 5), which reveals the importance of this sector, in the country overall employment. In 2013, the wholesale sub-sector employed 222,308 people and the retail subsector was responsible for employing 412,563 people.

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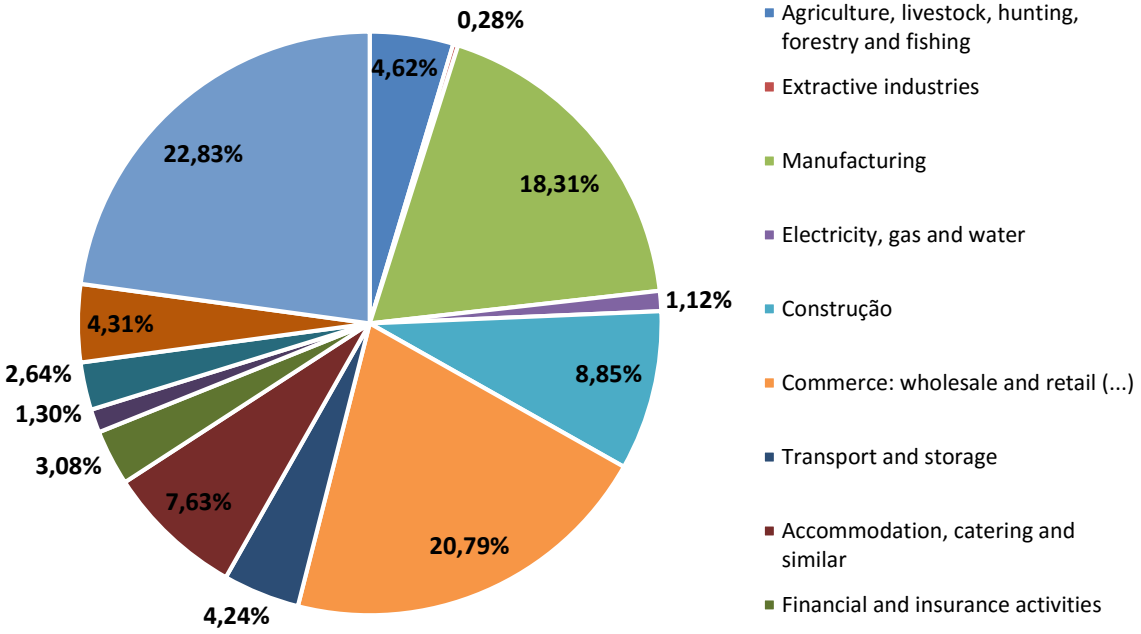
Chart 5 - Persons employed in enterprises by economic sector, 2013 (%)



Source: Pordata - Online data: www.pordata.pt.

b. Number of persons employed per size of enterprise

As we can see in the following chart (Chart 6), the micro and small companies of wholesale (78.1%) and retail (67.5%) are responsible to add most part of the personnel employed in the sector. However, by observing the subsector of retail, it appears that a significant proportion of those employees (25.5%) are from larger companies, a situation that is mainly due to the great number of large shopping centers in Portugal.

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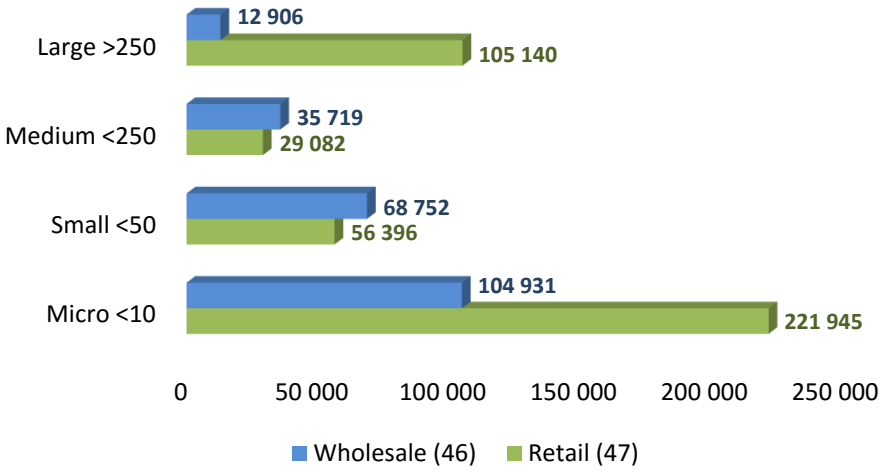
Chart 6 - Number of people employed in the commerce sector Wholesale and Retail by company size, 2013 (%)

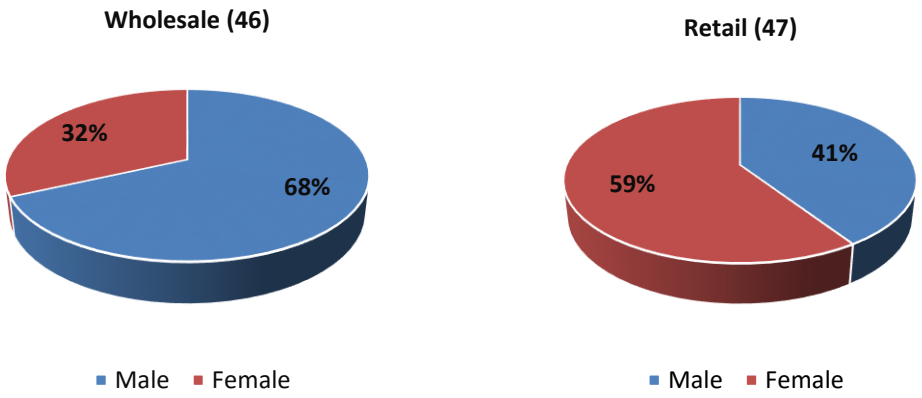


Source: National Statistics Institute (INE) – on-line data: www.ine.pt.

c. Number of persons employed and gender

With regard to gender, 68% of people employed in the wholesale sub-sector are men, in contrast to the retail sub-sector where most part of the people employed are women, corresponding to 59% of the total (Charts 7 and 8).

Charts 7 and 8 - People employed in wholesale and retail, by gender, 2013 (%)



Source: National Statistics Institute (INE) – Labour Force Survey 4ºT2013: www.ine.pt.

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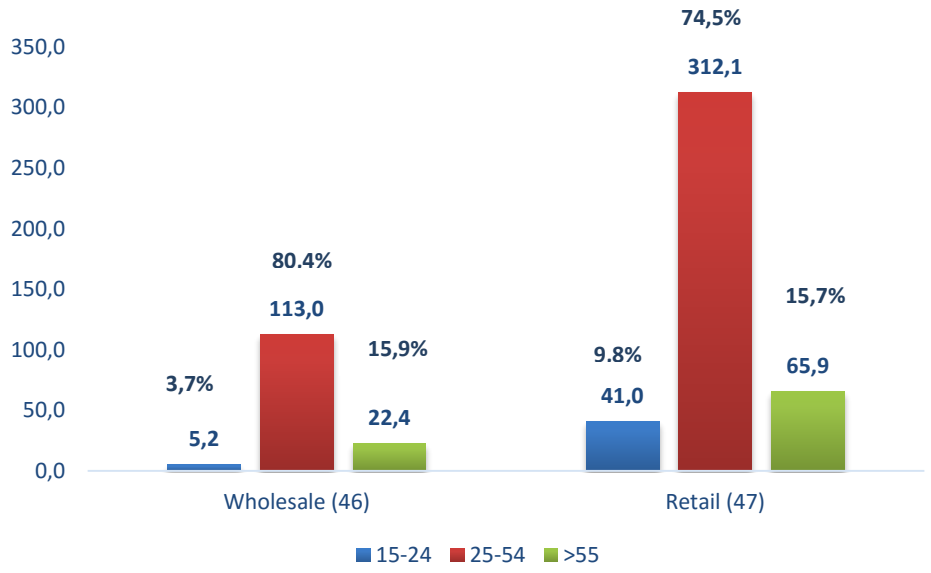
d. Number of persons employed and age

With regard to age, and as we can see in the chart below, most employees in the sub-sectors of wholesale and retail have between 25 and 54 years old. Even though Portugal is going to turn into one of the European countries with the largest percentage of elderly people (the retirement age increased to 66 years old), the percentage of people employed in these subsectors, with 55 years and over, is reduced, corresponding approximately to 15% of the total (Chart 9).

Chart 9 – Number of people employed in wholesale and retail, by age, 2013 (%/thousands)



Source: National Statistics Institute (INE) - Department of Economic Statistics - Statistics Enterprise Integrated Business Accounts System Service.

e. Number of persons employed and qualification level

The sector in question is characterized by the low education levels of its assets. In 2013, a very significant percentage of people employed in the sector had level 2 of qualification or lower: 53.98% in wholesale and 51.42% in retail. On the other hand, human resources with level 6 of qualification or higher had a small weight in the total of these employees: 15.15% in wholesale and 13.18% in retail (Chart 10).

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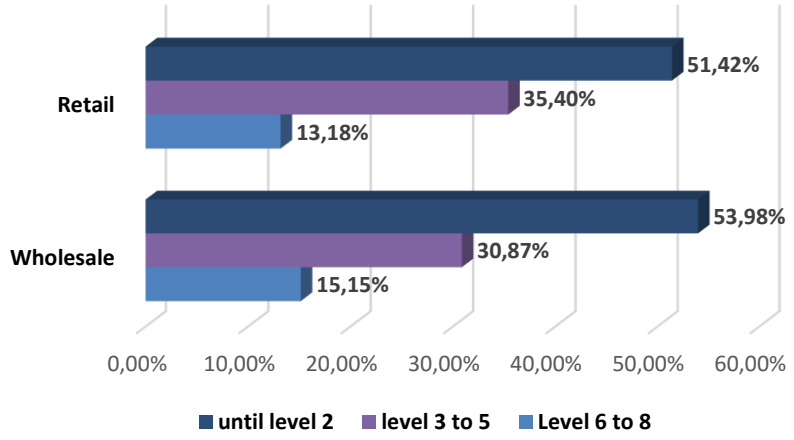
Chart 10 - People employed in Wholesale and Retail by qualification level, 2013 (%)

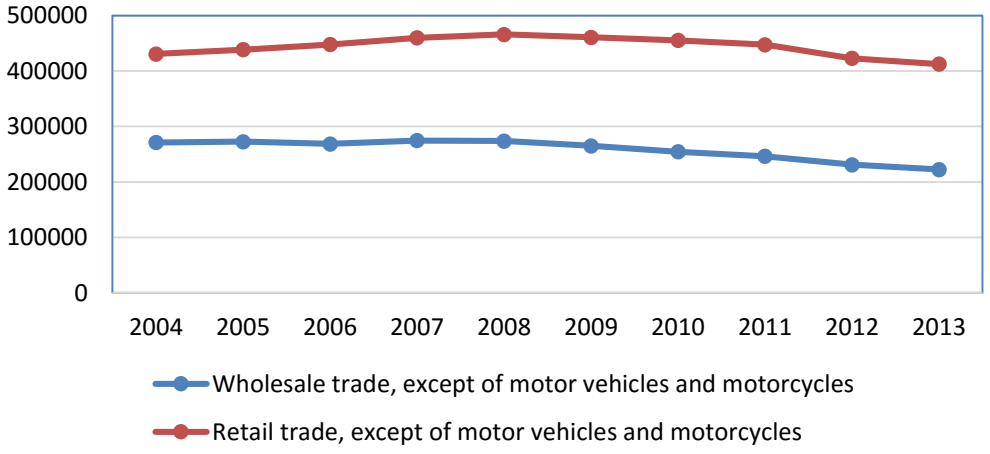


Source: National Statistics Institute (INE) - Department of Economic Statistics - Statistics Enterprise Integrated Business Accounts System Service.

f. Evolution of the number of persons employed in the sector

The number of people employed in the sector has remained relatively stable over the past few years (Chart 11). However, from 2008 (year that triggered the financial and economic crisis) until 2013, we can observe a decrease in the number of persons employed in the commerce sector.

Chart 11 - Persons employed in wholesale and retail, 2004-13, (Number)



Source: National Statistics Institute (INE) – on-line data: www.ine.pt.

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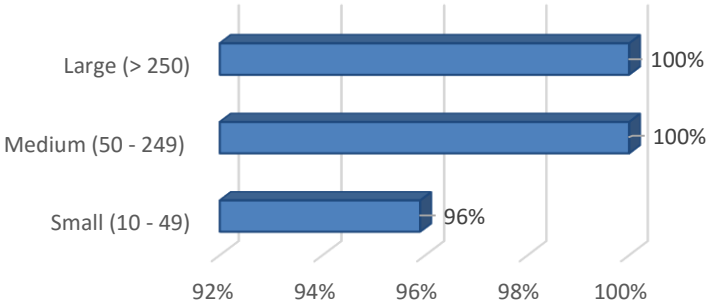
3- Use of ICT By Enterprises (%)

a. Enterprises with internet connection per size of enterprise

As shown in chart 12, the proportion of enterprises with internet connection is superior to 95%. This is indicative of the degree of importance given by them to this type of tools and follows the global development of society in the use of ICT.

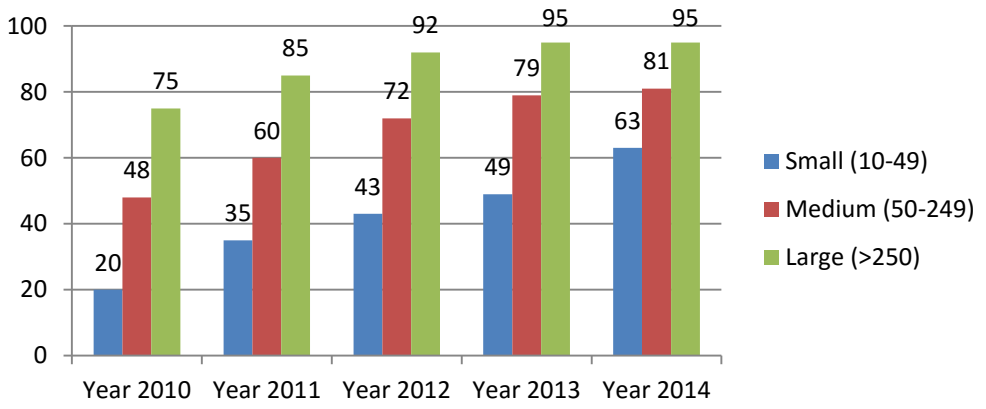
Chart 12 - Proportion of enterprises with 10 or more persons employed connected with Internet (%) by Employment size class service (2014)



Source: National Statistics Institute (INE) – on-line data: www.ine.pt.

The charts 13 and 14 allow us to observe the evolution, over the last few years, of the connection type to which the Portuguese companies turn. It's frankly remarkable the evolution observed in small firms, of which only 20% had in 2010 a connection to the internet via mobile broadband, and spent the past 14 years, in 2014, evolved to 63%, the firms that had an internet connection of the same type. We can not, however, fail to emphasize the evolution, from a technological point of view that occurred in the companies in recent years, which is the reason why it is observed as a rather significant change in the choices of companies in this field.

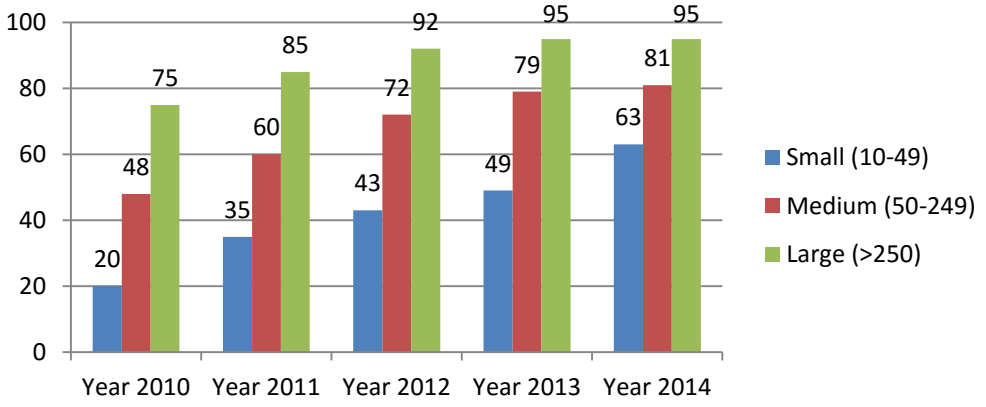
Chart 13 - Use of Mobile Broadband in enterprises with 10 or more persons employed



Source: National Statistics Institute (INE), Survey on the Use of Information and Communication Technologies in Companies, 2014.

In contrast, we observe, for the same reason, a lower evolution regarding internet connection via fixed broadband, since this type of connection was already widely implemented in the market in 2010. However, we can observe a certain contradiction between this indicator and the trend indicated previously, being small businesses the ones that most resort to this type of connection (in 2014), when compared to large companies that tend to abandon this type of link towards a mobile broadband connection.

Chart 14 - Use of Fixed Broadband in enterprises with 10 or more persons employed



Source: National Statistics Institute (INE), Survey on the Use of Information and Communication Technologies in Companies, 2014.

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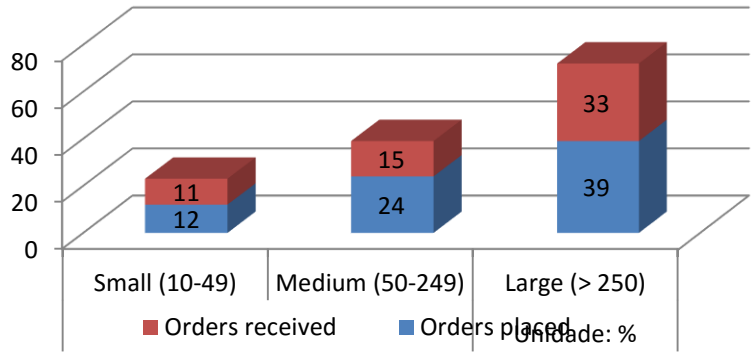
b. Use of e-commerce (to make and/or receive orders) per size of enterprise

Specifically, and in response to new consumption patterns and the increasing ease in accessing and using new information technologies, from both customers and companies, the sector has been focusing on Electronic Commerce.

It was found out that 40.7% of these companies carried out e-commerce, which affected purchases or sales of goods and / or services by electronic networks (website or electronic data exchange, not including simple communication by email). The proportion of companies who have order via electronic networks stood at 35.2%, while the proportion of enterprises having received orders in this way was 16.5%[1].

Chart 15 - Companies with 10 or more persons that perform e-commerce, 2013



Source: National Statistics Institute (INE), Survey on the Use of Information and Communication Technologies in Companies, 2014.

Parallel to the rise of online shopping, we are witnessing an increase in spending on these same purchases, with an expected average spending online (B2C) of € 1,089 in 2017. This fact is reflected also in turnover generated by e-commerce in Portugal, with an expected growth of 70% between 2012 and 2017 (Chart 16). In 2013, 11.7% of the turnover by commerce companies with 10 or more persons employed was originated in e-commerce.

[1] Source: NATIONAL INSTITUTE OF STATISTICS (2014), "Trade Statistics", INE, Lisbon.

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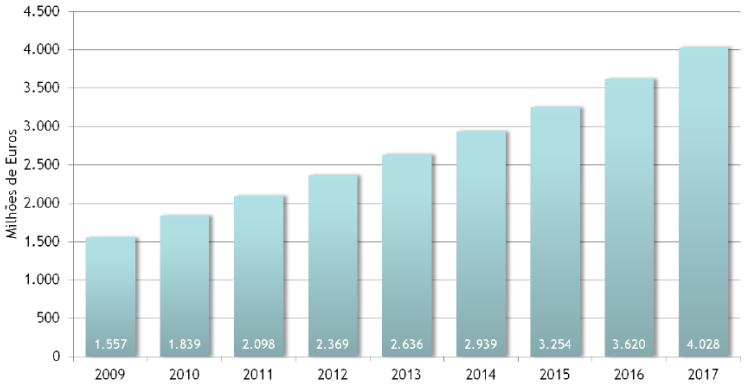
Chart 16 - E-commerce (B2C) - Turnover, 2009-17, Portugal



Source: IDC / ACEPI Study – "Digital Economy in Portugal 2009-2017", 2013

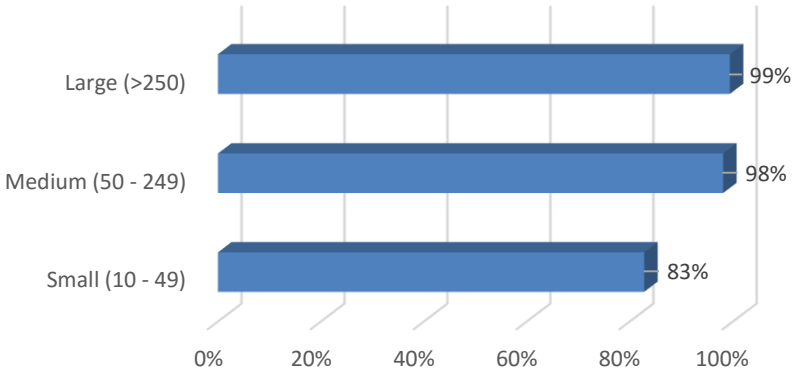
The study of ACEPI (Digital Economy Association)[2], produced in September 2015, which stood on the digital economy, estimates that e-commerce may represent, by 2020, over 50% of GDP, highlighting the categories of products sold in the internet that have grown more: clothing, travel and accommodation.

c. Enterprises using the Internet to interact with public agencies, and others entities per size of enterprise

The chart 17 shows the required resource of Portuguese companies to Internet to interact with public authorities and others, allowing to observe that, on average, more than 80% of Portuguese companies resort to this type of tools.

[2] Source: Digital Economy Association/international Data Corporation (2015), *Digital Economy in Portugal 2009-2020*, ACEPI, Lisboa.

Chart 17 - Proportion of enterprises with 10 or more persons employed used the Internet to interact with agencies, organizations and public authorities (%) by Employment size class service (2014)

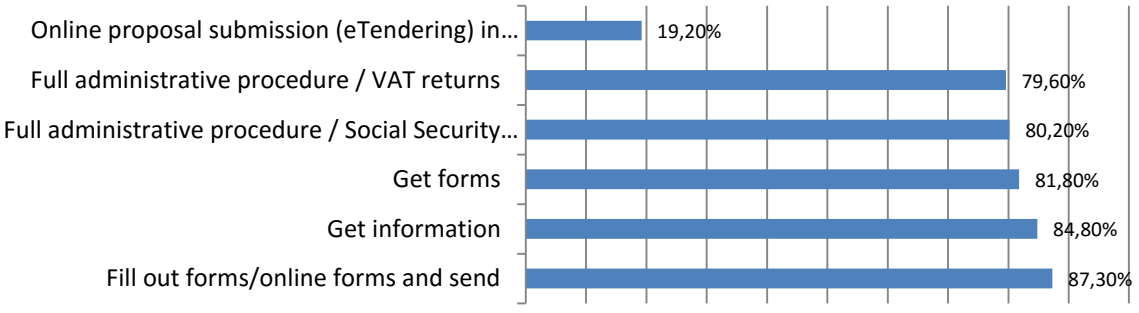


Source: National Statistics Institute (INE) – On-line data: www.ine.pt

The survey on the use of information technology, carried out by INE in 2012, stated that 87% of Portuguese companies presented as the main reason for interacting with public entities, the complete and submit forms / online forms, followed by obtaining forms and implementation of complete administrative procedures relating to VAT returns and social security (80%).

The chart 18 illustrate the main reasons given by Portuguese companies to interact with public authorities by internet, as referred in the survey above.

Chart 18 - Purposes of interaction with public authorities via websites or homepages (2011)



Source: National Statistics Institute (INE), Survey on the Use of Technologies of Information and Communication in Business, 2012

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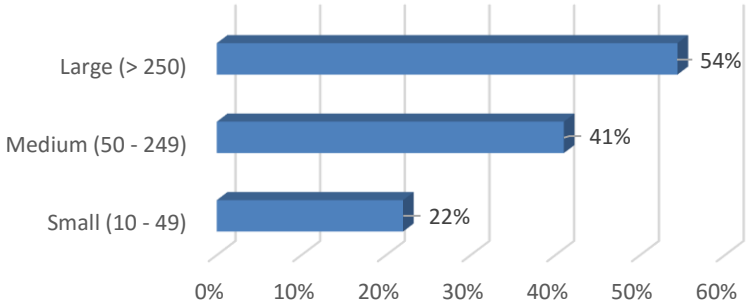
d. Enterprises using application software (CRM- Costumer relationship manager) per size of enterprise

Given the graphic below (Chart 19), representing the data extracted from the INE database, we can conclude that companies that rely on CRM software applications are large enterprises (250 and more persons employed). Small businesses are up to 22%.

Chart 19 - Proportion of enterprises with 10 or more persons employed using application software (Customer relationship management - CRM) (%) by Employment size class service (2014)



Source: National Statistics Institute (INE) – On-line data: www.ine.pt

Anyway, comparing the situation in Portugal with the European Union, we can see that the average use of such tools is not very different, in Portugal it is used 18% of CRM software, aiming an analysis of information about clients for marketing purposes, and 23% when used to the same type of software but for collection, storage and provision of information in other areas of the business. The EU gets by 19% and 26%, respectively.

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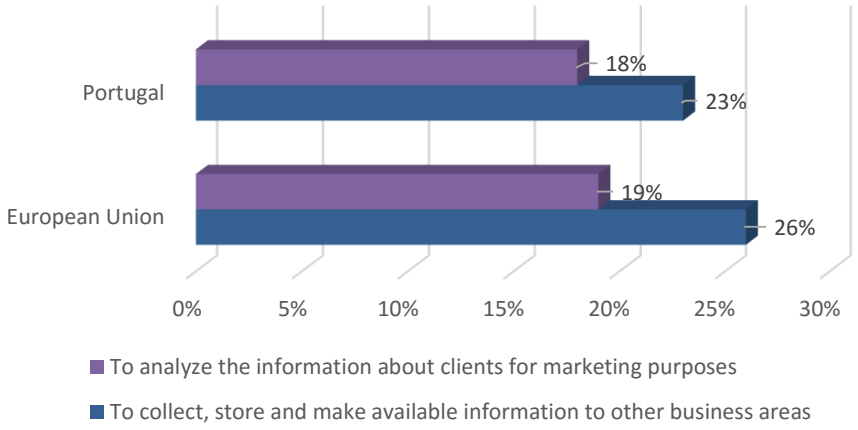
Chart 20 - Application software usage percentage (CRM) to manage customer information, type of purpose, Portugal and EU-28 (2012)

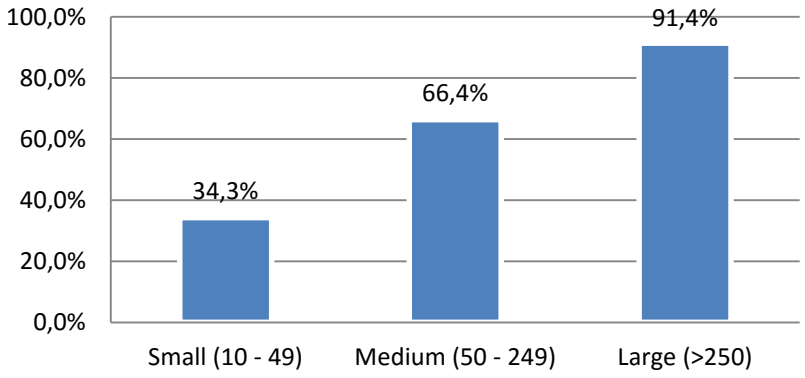


Source: Eurostat, Survey on ICT Usage in Enterprises (updated 03/11/2014)

e. Enterprises using application software (ERM- Enterprise resource planning) per size of enterprise

With regard to the use of ERP application software (Planning of the Company's Human Resources) we can observe a higher percentage in the use of such tools by the majority of companies, when compared to data used trough CRM application, previously mentioned.

Chart 21 - Proportion of enterprises with 10 or more persons employed using application software (Enterprise Resource Planning - ERP) (%) by Employment size class service (2014)



Source: National Statistics Institute (INE) – On-line data: www.ine.pt

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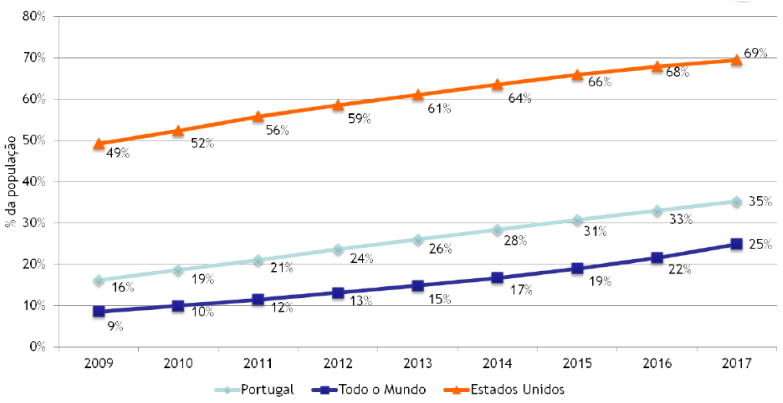
f. Enterprises with a presence on the Internet per size of enterprise

Note that in Portugal, there are more and more internet users (expected growth of 26% between 2012 and 2017)[3] and buyers via online - B2C (expected 42% growth between 2012 and 2017). As we can see in graphic 22, it is envisaged that in 2017, 35% of Portuguese population will buy online, which gradually brings us closer to the United States of America (USA), where is foreseen that in 2017, 69% of the population will acquire products by Internet.

Chart 22 - Online Buyers - B2C, 2009-2017, Portugal, World, USA (%)

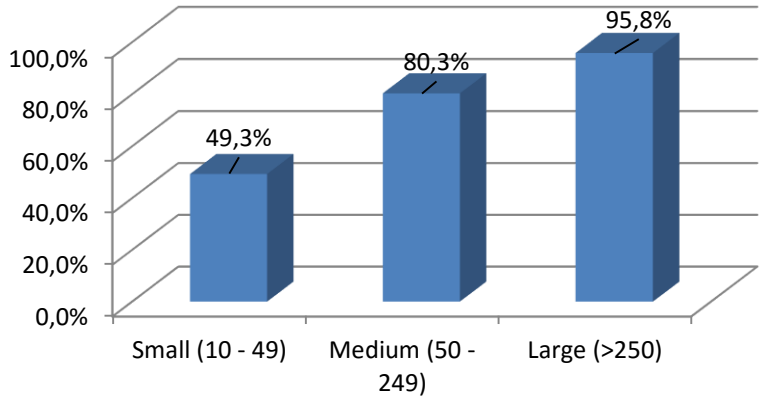


Source: IDC/ACEPI Study "Digital Economy in Portugal 2009-2017, 2014

The chart 23 shows the proportion of firms by size, with presence in the Internet, even allowing us to see the low percentage (49.3%) of this indicator in small firms, compared to 95.8% for large companies.

[3] Source: ECONOMY ASSOCIATION DIGITAL / DATA INTERNATIONAL CORPORATION (2013), *Digital economy in Portugal 2009-2017,* ACEPI / IDC, Lisbon.

Chart 23 - Proportion of enterprises with 10 or more persons employed with website (%) by Employment size class service (2014)



Source: National Statistics Institute (INE) – On-line data: www.ine.pt

The table below shows the main features offered by companies with an Internet presence through the website ownership, having noticed that the majority uses of this kind of tools are to provide catalogs or price lists.

Table 2 - Internet presence: Owning Website Functionality By Type

Owning Website Functionality by Tipe	
Ano: 2014	**Unidade: %**
Features Available	
Availability of catalogs or price lists	57
Website security certification	41
Recruitment and online application form	25
Personalized content for regular visitors	19
Order online or reservation	16
Possibility for visitors to customize or designing Products	15
Online tracking of orders	11
Accessibility for people with special needs	6

Source: National Statistics Institute (INE), Survey on the Use of Information and Communication Technologies in Companies, 2014

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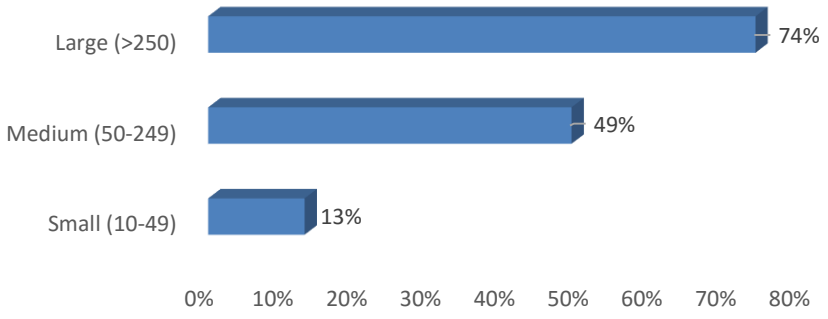
g. Enterprises with human resources with ICT skills per size of enterprise

With regard to human resources with specific expertise in this area, we can verify a low-percentage of this expertise in small businesses, which corroborates the indicators presented above. Rather, it is established that the large companies are the ones, where we can find the highest percentage of employees with such skills.

Chart 24 - Companies with 10 or more persons employed have ICT specialist staff (2014)



Source: National Statistics Institute (INE), Survey on the Use of Information and Communication Technologies in Companies, 2014

II - Trends in the sector

Developments in the trade sector have been marked by several *drivers*, among which globalization, demographic changes, the economic crisis and resulting decline in purchasing power, changes in the legal framework of the sector, technological innovation and the use of e-commerce. These drivers will continue to transform industry and trace future trends with a clear impact on the labour market, including the destruction of some jobs and the creation/development of others. In fact, and according to Eurostat´s data, the trade sector will require an additional 22 million workers for the period 2010-2025, including 4.3 million new job offers and 17.7 million jobs needed for the replacement of workers already employed in the sector.[4]

On the other hand, those drivers lead to some trends in the trade sector which are worth highlighting:

- Globalization of markets led to the setting up of supply and sales global networks (with a growing presence of these networks in Portugal and the resulting intensification of competition) and the relocation of ICT-based business activities (lowering of existing barriers for businesses to enter the Portuguese market and opportunities for Portuguese companies to go global);
- Franchising as a "vehicle" for the internationalization of some business models, supported by the development of concept and brand;
- The slowdown/stagnation in the growth of the available income results in a higher selectivity for consumer strategies, and the resulting choice based on the value proposition (price *versus* quality);
- Integration of service and sales aspects;
- Higher valuation of the assistance and service quality, as well as of the advising function;
- Individualization of lifestyles and consumption habits (customizing choices);
- Use of different sales channels (physical stores and online channels) in commercial activities;
- Automation of sales operations and introduction of differentiated business models;
- Increased use of ICT in all functional areas of business, and not only in sales;
- Increased focus in values which are oriented to environmental protection and sustainability.[5]

[4] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2014), *Employment and Skills, Report 2014,* European Comission, Brussels.

[5] Source: QUATERNAIRE (2015), *Strategic Program of training for trade and services (2014-2020*), CCP, Lisbon.

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a. Employment opportunities in the sector

In Portugal, the trade sector is influenced by the drivers and trends identified above. However, concerning employment, the country will not have such a sharp increase in terms of job offers because, as we can see in graph 25, it´s not expected to reach, in general terms and by 2025, an employment level similar to that of the pre-crisis period.

Chart 25 - Level of employment (million), 2000-2025, Portugal

Fonte: CEDEFOP, *Portugal skill supply and demand up to 2025*, 2015 edition.

Analyzing the level of employment growth, by sector, we can see that the forecasts for the trade and repair of vehicles sector are negative, showing a growth rate of around 2.1% (Chart 26) for the period 2015-2025; and that the real estate, consulting, scientific, technical and similar activities are the ones showing a higher growth potential.

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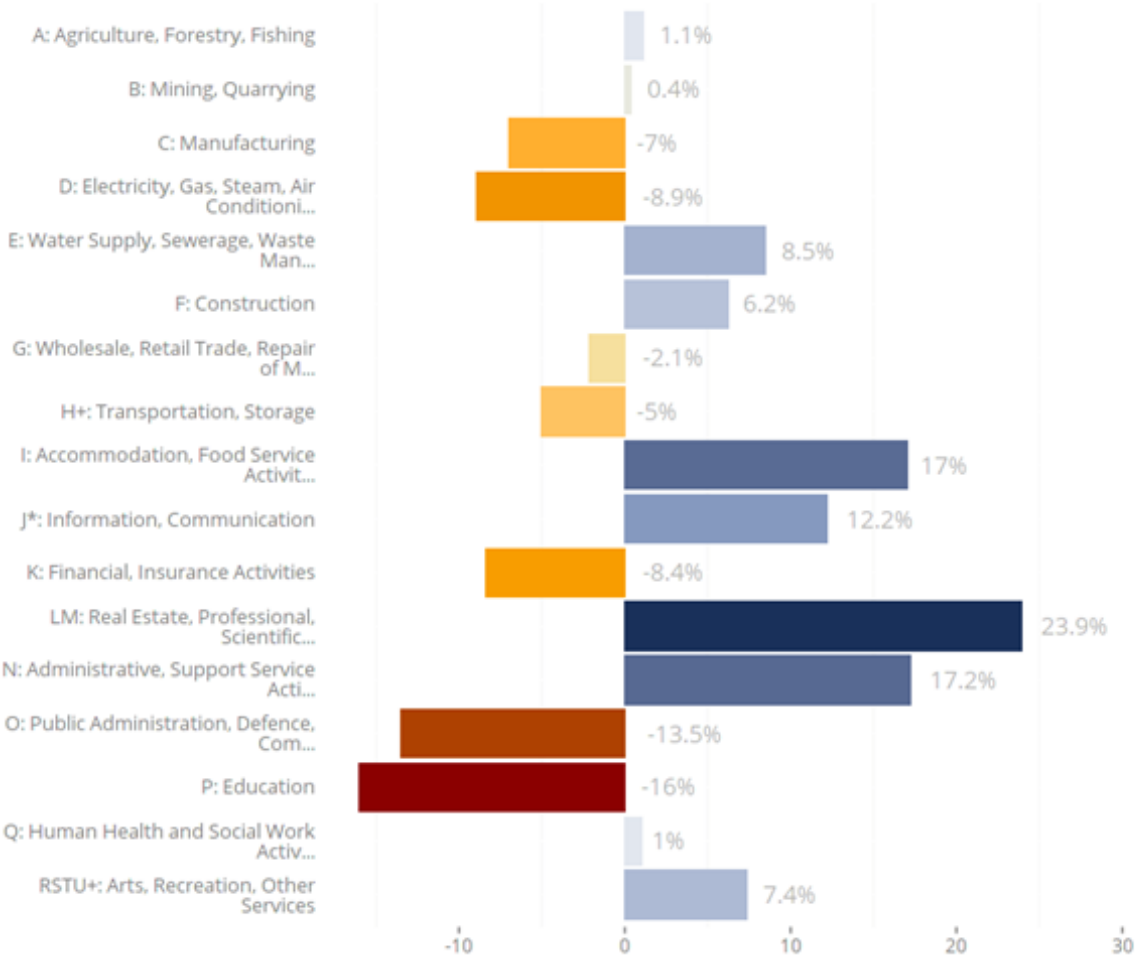
Chart 26 - Employment growth rate (%), by Industry, 2015-2025, Portugal



Source: CEDEFOP, "Skills forecasts online data and results", 2015

It should be noted that, given the level of employment in the trade sector in Portugal, it will always have a very significant contribution to the creation of new employment opportunities in the country, as we see even in the table below - although almost all are due to the need for renewing the labour-force.

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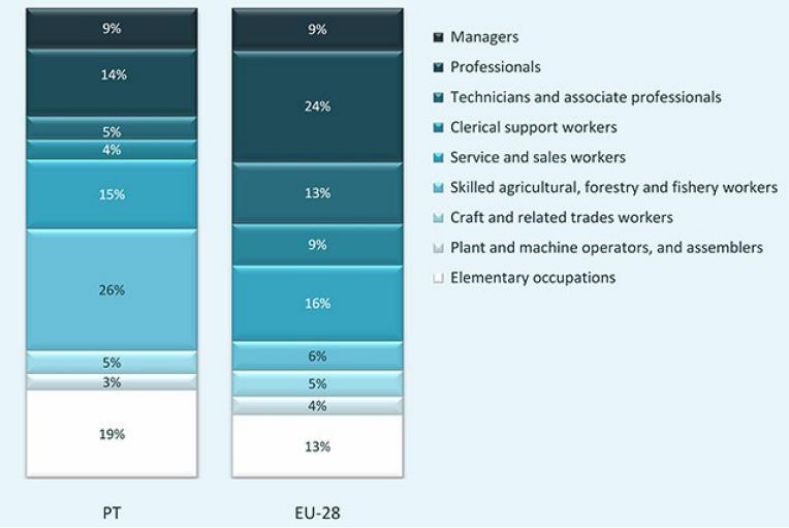
Chart 3 - Employment trends and vacancies provided for in sales and distribution (2013-2025)

	Levels (000s)			Variation (%)			Job opportunities (000s)		
CAE Rev.3	2013	2020	2025	2008-13	2013-20	2020-25	Expansão	Substituição	Total
Wholesale and retail	726	710	723	-10,9%	-2,3%	1,8%	-3	326	323
Wholesale (46) (46)**	316	310	322	-13,6%	-2,0%	3,9%	6	136	142
Retail (47) e (45) (47) e (45)***	410	400	401	-8,6%	-2,5%	0,3%	-9	190	181

Source: CEDEFOP 'Skills Forecasts "I LFS data relating to Portugal, in 2014.

CEDEFOP[6] estimates that, in Portugal, most of the job opportunities to be created, about 26%, can be framed in the fields of agriculture, forestry and fisheries, a much higher proportion than the expected average for the EU, with 6%, where most provided employment opportunities will be targeted at highly qualified professionals in the fields of science, health, engineering, entrepreneurial activities and education. The same source also foresees that 15% of job opportunities are directed to the dedicated professionals in areas related to services and sales, a very similar to the predicted value for the average of the EU countries, - 16% (Chart 27) .

Chart 27 - Distribution of employment opportunities, by occupation, from 2013 to 2025, Portugal and the EU (%)

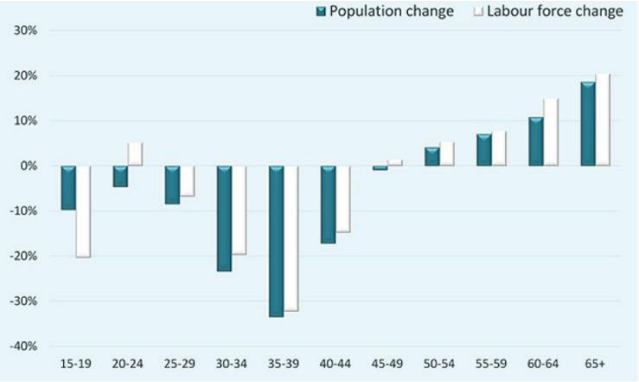


Source: CEDEFOP, "Skills forecasts online data and results", 2015

[6] Source: CEDEFOP (2015) "Portugal skill suplly and demand up to 2025", European Centre for the development and Vocational Training, European Comission

One of the main factors which influence future trends in the commerce sector and respective labor market are the demographic changes, to the extent that the future workforce will depend on the number of people available to work. Indeed, Portugal is an increasingly aged country (Chart 28), reflecting the low birth rate and the increasing migration. It is foreseen that, between 2012 and 2025, the Portuguese population will decrease from 10.5 million people, in 2012, to 8.6 million in 2025. Projections also point to an increase in the ageing index, from 2013 to 2025, from 131 to 307 elderly people for every 100 young people. Consequently, it is foreseen that the participation in the labour market will decrease, from 59% in 2013 to 57% in 2025.[7]

Chart 28 - Changes in the working age population and labour force, by age, 2013-2025, Portugal (%)



Source: CEDEFOP, "Portugal skill supply and demand up to 2025," in 2015.

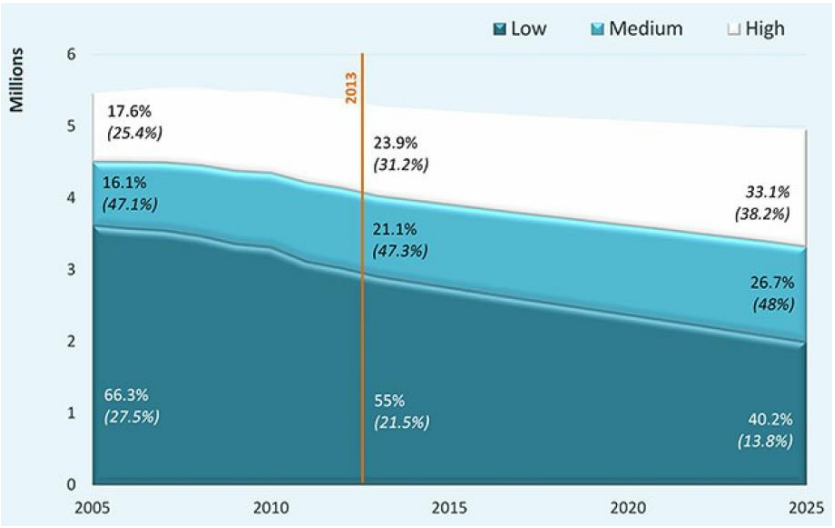
b. Development of employment by qualification levels

Despite growing old, the Portuguese workforce is becoming more skilled (Chart 29). This is explained by the departure of older people and low-skilled labour and by the entrance in the market of younger people with higher qualifications. It is foreseen that, in 2025, 33.1% of the Portuguese labour force will be highly qualified, comparing to 23.9% in 2013 and to only 17,6% in 2005. Regarding the relative percentage of low qualifications, this is expected to decrease, from 55% in 2013 to 40.2% in 2025.

Given the current trends, it is expected that in 2020 about 41% of its population aged 30-34 years will be highly qualified, thereby reaching the EU benchmark aiming for 40% in 2020.

[7] Source: NATIONAL INSTITUTE OF STATISTICS (2014) "Population projections resident from 2012 to 2060," Statistics Portugal, Lisbon.

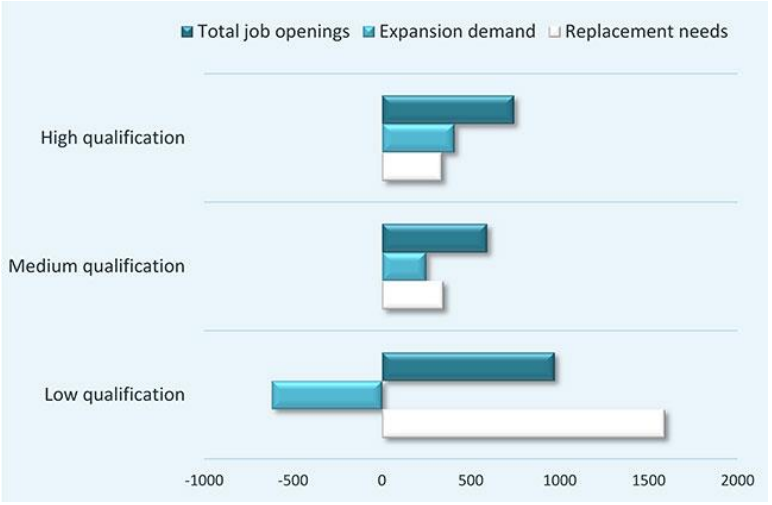
Chart 29 - Trends: workforce by level of education, 2005-25, Portugal (%)



Source: CEDEFOP, "Portugal skill supply and demand up to 2025," in 2015.

CEDEFOP forecasts point to a gradual improvement in the employment qualification structure, in Portugal, until 2025 (Chart 30), showing a higher weight of the high and medium qualifications altogether, than the low ones.

Chart 30 - Evolution of employment (000s) by level of education, 2013 to 2025, Portugal



Fonte: CEDEFOP, *Skills Forecasts up to 2015*, 2015

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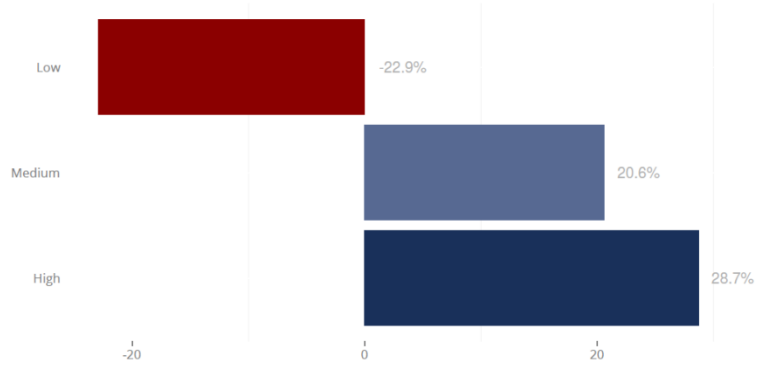
c. Variation in the employment by qualification levels

Despite the very high proportion of labour force with low qualifications in Portugal (still 58% in 2013), this has been decreasing and it is estimated that by 2025 it will have reached 45%. Actually, only the employment of low-skilled workers witnessed a negative growth during the crisis greatest impact period - around 600,000 jobs have been lost between 2008 and 2013 (18% variation). It is not anticipated that this trend will be reversed by 2025, with the continuing loss of low-skilled jobs in Portugal – less 566,000 from 2013 to 2025.

On the contrary, jobs requiring medium and high qualifications are foreseen to evolve positively, with the forecast of over 670,000 new jobs by 2025. Even in times of crisis and of a significant contraction in employment, in Portugal, the most qualified employment - requiring secondary and higher education - has grown (9.3%, and 5.3%, respectively). Projections point to the strengthening of this trend in the next decade, and an increase of 28.7% in the use of high qualifications and 20.6% in the use of intermediate qualifications is expected by 2025, (Chart 31).

Chart 31 – Employment growth rate (%), by level of education, from 2015 to 2025, Portugal



Source: CEDEFOP, "Skills forecasts online data and results", 2015

The study sponsored by CCP and conducted by Quaternaire Portugal (2015)[8] adds that we witnessed, in the last 5 years, a contraction of employment in the sector corresponding to 11%, some very low growth being expected (1.8%) in the period from 2020 to 2025.

[8] Source: QUATERNAIRE (2015), *Strategic Program of training for trade and services (2014-2020)*, CCP, Lisbon.

d. Jobs opportunities by qualification levels

A significant percentage on employment opportunities for high-level qualifications (levels 5 and 6 of ISCED 97) and secondary (levels 3 and 4 of ISCED 97), corresponding to more than 500,000 for each level, is foreseeable[9].

The Agenda for the Competitiveness of commerce, services and restaurants 2014-2020 considers this sector to be central to the increase of employment and economic growth. The Agenda refers the objective of "reviving commerce, services and restaurants, boosting them in a more consistent way, based on five strategic pillars":

- Enhancing knowledge and monitoring;
- Reducing local costs and performing administrative simplification;
- Increasing competitiveness and access to financing;
- Enabling internationalization of the digital economy;
- Revitalizing and promoting restaurants and similar activities.

The integration of markets, in the technological terms, introduces significant disruptions in the business activity, which is strongly differentiated depending on the respective context, branch, and business segments. The evolution trends in the trade subsector explain the gradual transition to a services society.

Having an approach that values the use of different online channels requires the ability to deal with different requirements and challenges, from defining the business strategic position to the price policy, along with the technological tools and logistics resources inherent to the chosen operating model.

However, this increased use of new technologies does not only happen on sales (as usually suggested by e-commerce), but is extended to the provision of pre and post-sale services, as well as to the organization and business management process itself.

SME aiming to strengthen the skills of entrepreneurs and workers should do so, in particular in areas such as the digital economy, strategic approach to business and innovation.[10]

A prospective study dedicated to new labour markets and new professions[11], reveals that "more than half of job opportunities estimated to Portugal for the next decade, requiring high qualifications, will be in four major professional groups, heavily knowledge-intensive: (1) experts in business support functions and activities of business services, especially in finance, administration, commercial, legal,

[9] Source: CEDEFOP (2015) "Portugal skill suplly and demand up to 2025", European Centre for the development and Vocational Training, European Comission.
[10] Source: Idem, Ibidem
[11] Source: VALENTE, Ana Claudia (2014), *New labour markets and new professions - prospective study Consortium Increased Employability*, Student Forum, Lisbon.

social and cultural affairs and specialists in information and communication technologies; (2) health professionals; (3) experts in science and engineering; (4) managers in service activities, including specialized services, hotels, restaurants, commerce and other service activities ".

e. Employment trends and anticipated vacancies

The economic recession contributed to the increase on online sales, boosting this trend, as it made us consumers need to search online the best solutions at the lowest prices, using for this purpose, traditional search tools such as Google or specialized sites, and social networks to acquire and exchange information and opinions.[12]

It is also expected that new technologies will expand the personalization and customization phenomena. In parallel, it is important to recognize that the commerce sector, although with a significant delay compared to many European countries, has been adapting itself to this reality and to the trends that point to the future, seeking to respond to the new technological formats and changes in consumption patterns, inevitably impacting the future of the sector.

Consumers live longer, are more urban and diverse, have a higher level of education and are more informed. Therefore, they are more demanding, look for products that have integrated services and are increasingly using information and communication technologies: computer, internet, social networks, mobile phones, virtual reality, new forms of payment and smartphone (apps, mobile marketing and geo-referencing).

We should be aware that new patterns of consumption related to the use of new technologies, resulting in a set of dynamic relationship between the presence in the Internet, the physical space, presence in social networks and the use of mobile communications, which are present, in an increasingly integrated manner, making the shopping experience a multifaceted process.

Quaternaire (2015) made the exercise of identifying the main lines of evolution having a more direct and visible impact on the commerce sector, in order to present the changes that these would lead to, in terms of skills and qualifications.

So, in terms of technological evolution, the same entity sought to develop the way the main existing innovations in this area are appropriated, particularly as regards the use of online technologies and how the latter influence the sales strategies, habits and consumption choices.

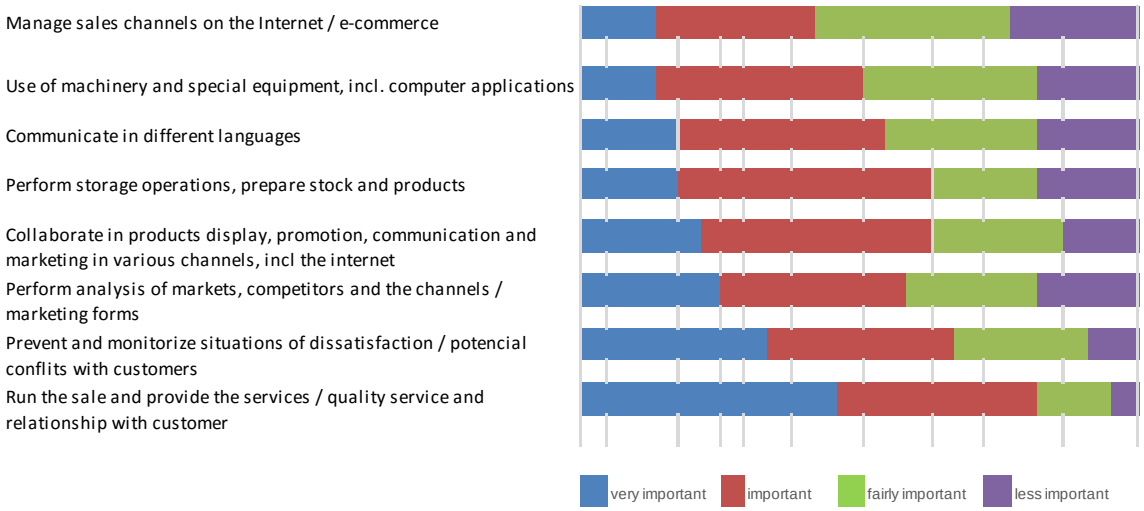
With the speedy evolution of e-commerce, the sector will be required to make an increased investment in technology and talent, which imposes having the needed skilled workers to improve its business performance. Since Portugal has a gap between the existing and the required skills, this calls for an

[12] Source: QUATERNAIRE (2015), *Strategic Program of training for trade and services (2014-2020*), CCP, Lisbon.

urgent investment in the improvement of skills in e-commerce, not only for workers but also for employers.

In this context, the study above mentioned confirmed that entrepreneurs of trade and services sectores recognize the need for qualification of human resources in the above identified areas, ranking the need for improvement of skills of professionals in the commercial and sales areas, the "configuration and sales channel management / e-commerce "as" important "or" very important ", as we can see in the chart below.

Chart 32 - improvement needs of skills of professionals from the commercial and sales

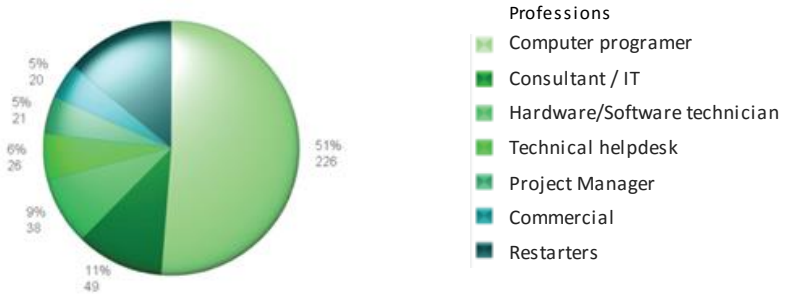


Source: QUATERNAIRE, Portugal Surveys (105 valid surveys)

ANETIE (National Association of Companies of Information and Electronics Technologies), in a study that focused on the needs of human resources in the sector of Information Technology (IT)[13], found that 51% of companies surveyed intended to hire programmers in the next three years, intending, in the same time period, to hire other professionals in the field of IT (Chart 33). The same study refers to the shortage of qualified and specialized human resources in this area who can fill in the number of related jobs, as the different business areas of the companies, in general, are increasingly dependent on ICT.

[13] Source: NATIONAL ASSOCIATION OF ENTERPRISES OF INFORMATION TECHNOLOGY AND ELECTRONICS (2014), *HR Specific needs for the IT sector - Conversion of unemployed*, Anetie, Lisbon.

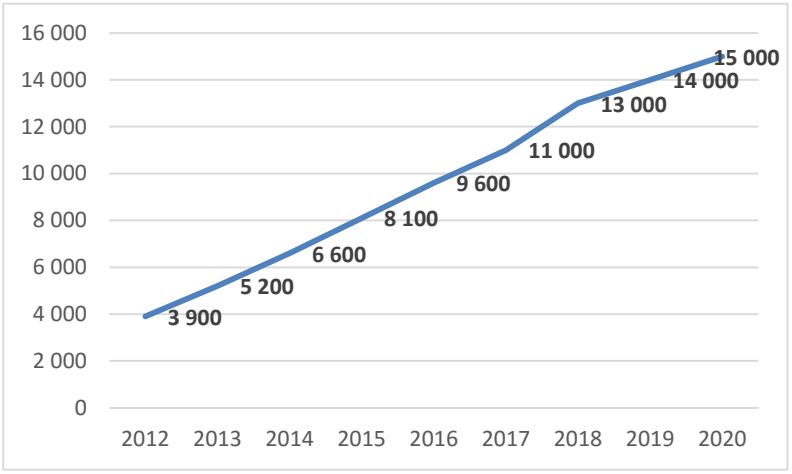
Chart 33 - IT Sector - Number of professionals to hire, by profession



Source: ANETIE, *Specific needs HR to IT industry - Conversion of unemployed 2013-2014*, 2014

These studies indicate the "ICT skills gap" which is registered in Portugal, with hand-skilled labour needs. Moreover, the projections for Portugal (Chart 34) point to 15,000 unfilled for lack of skilled labour in 2020, about five times more than projected for 2012.[14]

Chart 34 - Potential Jobs for ICT professionals in Portugal (2012-2020)



Source: Ana Cláudia Valente, *New labor markets and new professions - prospective study" Student Forum / Consortium Increased Employability*, 2014

[14] Source: VALENTE, Ana Claudia (2015), *Mapping the supply of education and training in Information Technology, Communications and Electronics in Portugal, Portuguese Coalition for Digital Employability*, Calouste Gulbenkian / Foundation for Science and Technology, Lisbon.

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Nevertheless, a trend was found that will not contribute to overcoming the constraints described above: the demand for courses in computer sciences, by the Portuguese youth, is short and is in decline. On the other hand, although the number of graduates in Science, Technology, Engineering and Mathematics (STEM) have been experiencing an increase, their proportion in the whole higher education has been declining, although the employment forecasts in STEM point to a growth of 32% (although the expected growth of employment for the whole Portuguese economy is only 2.2%). Overall, 111.000 job opportunities are estimated in these professions by 2025.[15]

Consequently, it´s fundamental that we put in place requalification strategies able to convert, in due time, unemployed people from other areas for digital jobs, motivating also young people for training and future careers in ICT. Only through an integrated strategy can we take advantage of the qualified job-creation potential and thus respond to the future shortage of qualified professionals in the digital area.

It should also be noted that, when we speak of "digital" nowadays, we don't speak only about Information and Communication Technologies (ICT) any more, but also about innovation based on system design, modeling and 3D printing, sensing things, etc[16]. Thus, the digital can be regarded as a cross-value affecting all sectors, including the trade sector. In fact, we are increasingly close to having almost entirely digital value chains.

Beyond the ICT skills, including the essential digital literacy, when employers recruit young people with higher education, they value a mix of skills, which notably include the following[17]:

- applied knowledge, with experience in real contexts throughout higher education;
- functional availability (multi-skilling and multi-tasking) and for geographical mobility;
- creativity in addressing problems and finding solutions;
- ability and willingness to learn continuously;
- initiative and entrepreneurship;
- ability to work in a project logics and in international networks;
- ability to work in collaborative environments and multidisciplinary teams;
- business skills and business vision;
- foreign languages, including English proficiency.

[15] Source: VALENTE, Ana Claudia (2014), *New labor markets and new professions - prospective study Consortium Increased Employability*, Student Forum, Lisbon.
[16] Source: VALENTE, Ana Claudia (2015), *Mapping the supply of education and training in Information Technology, Communications and Electronics in Portugal, Portuguese Coalition for Digital Employability*, Calouste Gulbenkian / Foundation for Science and Technology, Lisbon.
[17] Source: VALENTE, Ana Claudia (2014), *New labor markets and new professions - prospective study Consortium Increased Employability*, Student Forum, Lisbon

In addition to the trends related to new technologies and skills required, others should be noted, related to employment in the sector and which may involve filling in the respective vacancies provided:

- Expansion of medium-sized supermarkets, although at a slower pace and possibly through acquisitions rather than by duplication of the sales area and, on the opposite, the hypermarkets loss of market-share.
- Continuing expansion of specialized establishments, with a greater focus on non-food trade, so it is expected that such large groups present in Portugal will strengthen their position in areas such as bookstores/newsagents, health spaces, new brands in garment area, etc…
- Development of the concentration process (merger, acquisition and integration) both in the wholesale and retail, resulting in an increased attenuation of the differences between them and a downward trend in the number of operators, due to the difficulties to subsist in an increasingly competitive market. Concentration mechanisms will end up, in the short term and contrary to what some argue, to fewer options - both in terms of commercial spaces, and of products offered.
- An expansion of commercial companies outside Europe, in a clear globalization movement, preferably from large business groups and with a special emphasis in the process of internationalization for emerging countries, especially to China.
- Concerning small businesses, we´ll continue to watch two trends: on the one hand, a significant number of closing companies; and, on the other hand, the visible dynamics of the trade sector and also of services, in terms of new businesses creation. We´ll watch more volatile businesses, which will lead to a decrease in the "life expectancy" of companies in the commerce sector.
- The trade sector will tend to lose weight in total employment, being compensated by the increased employment in other services.
- Growing appreciation of the service component associated to the product, being the products with a strong component of associated service clearly valued.
- In the relationship between retailer brands products (distribution brand) versus branded goods (industry brands), we will also witness a growing in retailer brands and foresee that Portugal will quickly reach the higher levels of private labels´ market share that exist in some other countries, like Spain and Germany, which market shares are around 31%. In some segments, such as, for example, drinks, we can expect that the change in VAT rates will lead to a faster growth of distribution brands.
- In business, we will watch a greater pressure being put on suppliers, together with the development of more aggressive communication and promotion strategies, particularly those anticipating promotion seasons; the launching of a larger number of promotional campaigns; etc.
- A further rationalization of costs, namely by the downsizing of structures and the rationalization of procedures

f. Identification of change drivers on the jobs

When observing changes imposed by the introduction of innovations resulting from technological upgrades, in the trade sector, Quaternaire (2015)[18] also wanted to present the change drivers to which the sector is subject to, resulting from the incorporation of ICT in all activity performed by companies. Some of the identified drivers of change are mentioned below:

- Interaction between ICT and business design and planning functions;
- Use of ICT in back-office functions;
- Use of ICT in communication, information and promotion functions, as well as in customer loyalty strategies;
- Use of ICT in the supply activity;
- Distance-selling supported by the Internet;
- Online and mobile channels in supporting and integrating the marketing functions;
- Communication, sales and after-sales service;
- Automation of sales operations and, that way, the introduction of differentiated business models.

The same organization also mentions the urgency of focusing on integration and monitoring of technological innovations such as platforms required to support the organization and business management, as well as its use for a simplification of procedures and control of activities; in Web development, in information, dissemination and sales online channels management; in the optimization of the presence in online channels, as well as in promoting the use of improvement tools from those same channels and in the ability to use the digital economy to expand markets and the supply of available services.

The importance that the hiring perspectives in areas related to administrative work, sales and logistics assume highlights, on the one hand, the employing importance of the sector and, on the other hand, the importance of focusing on the development of training strategies for the qualification of employment sectors that still have low qualifications.

José Caldeira, President of the Portuguese Innovation Agency, said in an interview with the Observer[19] that *the future goes hand-in-hand with the online*, bringing consequences for companies, but also opportunities. "The investment in R&D and in technology watching, the uncertainties inherent to the launch of new business areas and, also, the requirements in terms of funding are amongst the main challenges of companies." José Caldeira gives examples of cases that emerged from the need for investment in new business areas, such as the case of new print products in three dimensions (3D) and concepts like "virtual reality", "big data" (large volumes of data), "cloud computing" (cloud computing

[18] Source: QUATERNAIRE (2015), *Strategic Program of training for trade and services (2014-2020*), CCP, Lisbon.
[19] Source: http://observador.pt/especiais/economia-digital-digitalizacao-das-empresas-nao-opcao-inevitabilidade/

capacity), "internet of things" (the internet of things, ie, connecting the equipment used in daily internet networks) and robotics.

The European Commission[20] also refers to the digital economy as "the most important driver of innovation, competitiveness and growth in the world. The key to the growth of the European business is precisely on how fast companies will be able to incorporate digital technologies in their operations".

III - How technologies affect jobs in commerce

a. Kind of Impacts

Given its relevance in terms of employability, it´s urgent to analyze the factors that currently have consequences on jobs and on job profiles needed for the sector. One of these factors results from the technological change we have witnessed in recent years, which will tend to evolve continuously, as previously mentioned. The constant search for efficiency in the response to consumer demand requires improvements in the management of any business.

New technologies have, therefore, an important role in company activities and require employees who have a profile able to improve its performance. The use of such tools allows businesses significant efficiency gains, a greater control of the business and an increased capacity to centralize the management of its stores. According to the report the European Commission (2010)[21], Portugal was, in 2010, ahead of their European counterparts in the use of electronic means in terms of business. For instance, Portugal had an average of 55% in the use of applications for integrating internal business processes in every company, compared to the EU average of 41%.

The study from the European Skills Council Commerce (2012), stresses that the new information and communication technologies have become the main key tool for marketing departments. Even without having to be an expert, it is essential that each professional in this area incorporates such knowledge in its relationship with the customer, taking into account the necessary company marketing strategy.

The brand image of a business results from its history, its management, its know-how, the communication and the services provided – but, also, from the expertise and knowledge of its employees, requiring specific training for some of them.

[20] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2015), *Employment and Skills Report 2014 EuroCommerce*, UNI Europa - Commerce Global Union.

[21] Source: EUROPEAN UNION (2010), *Europe's Digital Competitiveness Report 2010*, US, Brussels

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Jobs are increasingly involved with automation mechanisms and simplifying processes. The development of versatility, teamwork, communication skills and the use of technologies have become important and call for an improvement in education and training.[22]

The impact of evolution, caused by a deep transformation in technology, is visible and is beyond the traditional reference to distance selling and e-commerce as the main form of expression. In the context of the quick technological change that we experience, e-commerce - in its traditional sense (distance-selling using a website) - suffered erosion, as a model to project evolution. We have to associate, to it, the effect of diversification of the online use in the context of commercial activity.

On the other hand, the entry of foreign operators in the domestic market stresses the need for competing in a wider and more demanding market, in which innovative models with a wide investment capacity tend to concentrate market shares.

In terms of internationalization of businesses with a physical presence, global trends reinforce business opportunities strongly supported by global brands and concepts, or by investment capacity. In this plan, only a sufficiently innovative market will be able to cope with competitive European markets, and should deepen the new opportunities offered by the technological factor.

Associated with the growing use of new technologies, as well as the greater complexity of business activity, we have witnessed an increasingly developed logistics activity that will tend to gain autonomy in all business areas, especially in large companies. The logistics component proves to be very important, as well, especially for wholesalers who have been assuming a role in the control of distribution.

Also, the ageing population – very marked in Portugal - turns out to have significant impacts on commerce, as it appreciates services of proximity and convenience. The Agency for Competitiveness states that only 15% of the population is under 15 years and 20% is over 64. Service convenience is a component which gains importance for this segment, and imposes itself as a competitive asset for the market proximity (some surfaces offer free delivery to households, for people over 65 years).

One can recognize that the concept of proximity gains a higher expression than the one resulting from the physical presence, then meaning also *trust, quality and service*. These are fundamental values that the new proposal of valuable personal commerce and services must guarantee. It is necessary to combine the sale of customized solutions with emotional benefits, as well as making the shopping experience convenient.

Technology is deployed in coordination and complementarity with other strategies. Trends refer the mobilization of different online channels in the context of commercial activity, assigning specific goals

[22] Source: EXPERT GROUP ON FUTURE SKILLS NEEDS (2010), "Future Skills Needs of the Wholesale and Retail Sector".

and objectives to each of them, including the internet, social networks and mobile applications, for example. The use of these tools introduces a multi-channel approach in the relation with the market or the evolution to the "cross-channel" logics.

The functioning of commercial companies back-offices (stock management, billing and provisioning, for example) is one of the areas where the impact of information and communication technologies remains more latent. The use of ICT allows flexibility and immediacy in purchasing processes and management and coordination of supply flows and exchanges, bringing more flexibility to the operating modes.

The expansion of online transactions increases the requirements for improvements in the transport and distribution sectors, contributing to the introduction of changes in the ways of organizing sales processes, based on more flexible flows of supply and delivery, reducing at the same time the centrality and dimension that are required to the physical space.

As we could observe, the impact of technological dimension cuts across various fields of activity. For this reason, the effects it has on the content of jobs are not limited to trade professions themselves, but are extended to professional areas that, being relevant to trade, are situated in the segment of services providing to companies. In this sense, we can say that the impact of technology diffusion allows the emergence of new and diverse concepts of business, not always easily classified, and that may cover more circumscribed models of distance-selling using the internet, or models that include the use of various channels and tools online to articulate functions of organization, operation, information, selling services and fully automated models for sale.

Markets integration in the technological level introduces significant disruptions in business activity, strongly differentiated according to the context, branch and business segments.

Dionysus (2012)[23] points out some of the most typical features of the buying behavior and research on the internet by consumers, such as: demographic factors, lack of time, degree of knowledge on how to use the internet, size and depth of the user connections, and his attitude towards the risk.

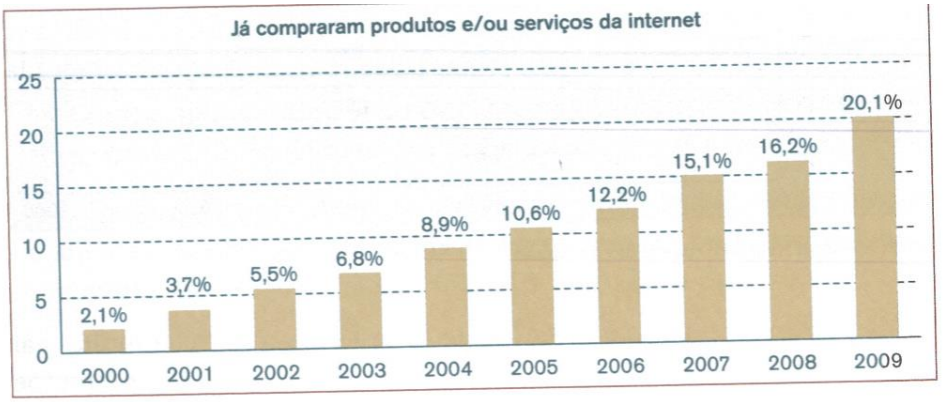
The proliferation of e-commerce has, thus, increased the importance of customer strategies, since in an online context it becomes extremely easy for the consumer to compare prices, conditions and organizational value propositions. While the Internet is assumed as an important tool for different information search and purchase of products, customers continue to use different sales channels, combining online with offline.

A survey carried out by LINI - Lisbon Internet and Networks Institute (In Dionysius, 2012), referring to the first quarter of 2010, indicated that 48.8% of the households in Portugal had Internet access, and 44.6 % of the population used the internet. All senior used the Internet, as well as almost every student

[23] Source: DIONÍSIO, Pedro Gonçalves, Helia, Cardoso, Daisy (2012), *Behaviors of Information Search and Purchase Online*, Confederation of Commerce and Services of Portugal, Lisbon.

(96.1%), scientists, arts dependent workers, and technical staff (94.2%). Based on the same study, professions using less the internet were pensioners (5%) and domestics (10%). The same author also states - using data redrawn from a Marktest study (2011) – that, during the fourth quarter of 2010, 2.59 million residents on the mainland have visited online commerce sites, and that 1,667,000 Portuguese have already shopped online.

Chart 35 - Evolution in the percentage of people who have bought on the Internet



Source: Marktest, Bareme Internet (In Dionysius, 2012: 30)

The preliminary findings of the study "Digital Economy", promoted by IDC Portugal and ACEPI (2015)[24], state the existence of about 7.5 million Internet users in Portugal - approximately 70% of the population - estimating that, by 2020, this figure might have reached 84%, approximately 9 million people. As for e-commerce, the same study estimates online shopping by 40% of the Internet users – spending more than a thousand euros - only in 2015, predicting that by 2020 this figure could reach 50%, corresponding to a volume of over 90 billion euros.

José Caldeira[25] explains that in areas such as communication, design, marketing or sales, it is possible to get a sense of the importance and impact of digitalization. He highlights, in this context, the gains of efficiency that companies get when they simplify, optimize and automate processes. For the specialist, the new virtualization technologies of products and processes are enabling companies to launch, faster and with lower costs and risks, new products and services. Moreover, importance should be given to retraining and reconversion of, either people who are in business, or unemployed - young people with high education in other areas, who can´t find employment.

The APDC (Portuguese Association for the Development of Communications) developed a document that focuses on the "Business Trends and the role of information technology"[26], mentioning the

[24] Source: DIGITAL ECONOMY ASSOCIATION (2014), *Quarterly Barometer of Electronic Commerce in Portugal 4th Quarter 2014 Earnings Release*, ACEPI, Lisbon.

[25] Source: http://observador.pt/especiais/economia-digital-digitalizacao-das-empresas-nao-opcao-inevitabilidade/

[26] Source: PORTUGUESE ASSOCIATION FOR THE DEVELOPMENT OF COMMUNICATION (2015), "Business Trends and the Role of Information and Communication Technologies", APDC, Lisbon.

significant impact that the economic contraction experienced in Portugal has played in private consumption, causing an increase in the real savings rate by citizens. Registered since mid-2010, this phenomenon was based on the fear that the crisis would continue in the medium term, the insecurity of an increasingly precarious labour market, and the low perspectives on new employment opportunities in the country.

The decrease in public and private investment (- 8.5% in 2013, comparing to the previous year), resulting from the exit or lack of investment of some international companies, has been affecting the growth perspectives for the Portuguese economy in the medium and long term.

This adjustment has also been reflected, in a critical way, in the retail sector, which had to adapt itself to a new economic reality. In addition, the digital pure-players competition has posed additional challenges to traditional retailers, who see the need to reinvent themselves and create differentiated value propositions to meet consumers that are increasingly demanding and informed. For example, e-commerce in Portugal presented a weighted annual average growth of 19% between 2010 and 2015, and growing perspectives of 45% for the online channel number of consumers, between 2012 and 2015.

Anyway, industry has been able to reinvent itself throughout the years, adapting to specificities of the markets in which it operates through internationalization strategies and business expansion, responding increasingly faster to the constant changes occurring in consumption profiles.

The next few years will represent a continuous challenge for retailers, both externally - responding to consumers having less purchasing power, but being more demanding and informed, in an increasingly global scenario - and internally, focusing on the efficiency and optimization of their so-called “traditional” distribution structures.

It might also be noted that Retail is undergoing structural changes that affect the entire chain of value, from its shape and relationship with suppliers and partners, to the logistics processes and distribution, and to sales and service to consumer, throughout their buying journey.

Bellow, we indicate some challenges that the retail trade sub-sector is facing:

i. the need to create differentiated experiences, in order to understand consumers, taking into account their needs and preferences, in all channels, to make experiences, products and services personal and to anticipate trends and consumption habits;
ii. omnicanal reality, adjusting the sales channels and points of contact to the consumer, with a consistent and transversal value proposal, allowing access anytime and anywhere, maximizing the customer experience at all touch- points of his journey;
iii. integrated and efficient operations that enable a response capacity in omni-channel reality and an integrated approach, from the supplier to the consume;
iv. leveraging the information power, with the ability to structure and process information, to proactively respond to consumer behaviors and decision-making on business.

The demand from consumers for increasingly uncomplicated experiences, simple and fast, represents a considerable degree of complexity for retailers, both for understanding consumers themselves, and for developing mechanisms and tools that respond to the evolution of the act of purchase and consumption. A study from Accenture in 2013 ("Seamless Retail: Customize, Connect, Converge, Collaborate")[27] notes that about 75% of European consumers would like to use smartphones for price comparison while making their purchases, while 80% wanted access to critical reviews of products and services from other consumers in store environment, with consumer purchasing decisions change after online research.

Other dimensions that influence the internal adjustment of retailers, are related to the investment capacity, limited by low consumption and operating margins that put pressure on retailers in order to provide a redefinition of business models; the increase of systems for information management and support of the decision making (such as identifying consumption patterns, optimizing supply networks and sourcing models) enhancing an increasing number of data available on competitors, consumers, partners and the supply chain, for an increasing number of sources (eg.: social networks, mobile M2M.); increased complexity in understanding the processes of information and decision making; increasing pressure from the requirements of a global market operating in an omnicanal reality leading retailers to focus on the supply chain optimization and integration of information systems with partners and suppliers, on the efficient inventory management based on consumer versus physical store, and on the need for an immediate response to an ever-attentive consumer, more demanding and less loyal to the price factor. Consequently, such requirements lead to a necessary revision and/or modification of the workforce profiles and skills.

b. What new jobs

The importance given by the retail sector to the presence on the Internet continues to increase, both as a marketing factor and to reach an online sales platform (European Skills Council Commerce, 2012)[28].

The European Skills Council Commerce (2014)[29] mentions, in its report and relating to 2013, some of the advantages that betting on a presence on the internet - specialized in e-commerce - brings to companies, such as:

i. the possibility to start a business of the kind, using new technologies without the need to make a major investment;
ii. the inclusion of a virtual client, enabling a potential growth on sales;

[27] Source: DIGITAL ECONOMY ASSOCIATION (2014), *Quarterly Barometer of Electronic Commerce in Portugal 4th Quarter 2014 Earnings Release*, ACEPI, Lisbon.
[28] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2012) *Impact of change & new technologies on skills & occupations in the sector commerce*, Consulting Europe, Brussels.
[29] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2014), *Employment and Skills, Report 2014*, European Comission, Brussels.

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iii. the benefits resulting from advanced commercial technologies, bringing an improvement to the company´s image and prestige; the improvement of the potential market, offering new opportunities for sales increase;
iv. reduction of costs related to human resources, which potentiates a rise in employment; reinforces sharing with other markets, offers advanced services and the improvement of customer satisfaction
v. attraction of new customers and reinforcement of their loyalty, allowing an increase in companies´ competitiveness, by means of a faster response to the customer;
vi. expansion of the business area, with no increase in costs;
vii. higher profit margins, thanks to the new activity.

The growth in online commerce, particularly in the clothing sector, books, electronic products, in which purchases are normally distributed by mail, on a request made through the internet, and the transition from a physical sales model to an online model requires companies to check their logistics strategies and train experts in this field, making them able to understand the specific changes required for each kind of circumstance.

The strong growth in online shopping brought along customer expectations. For this reason, brands must innovate, introduce a transparent dialogue with their customers, diversify their suppliers and rethink the format of their stores. We have to bear in mind that consumers´ choices about products are related to emotional and affective factors, or to subjective values than they assigned to them.

Sales channels should provide customers with an added-value that leads to the purchasing act. In this case, it is essential to ensure that the purchase is safe, that it´s a pleasant and easy experience. E-commerce involves the reorganization of the chain of value, of processes and of its development: stock, inventory, prices and promotions have to be designed differently. The relationship with the client must be harmonized and efficient. The goal of the marketing function will, therefore, be to raise awareness of the product, to make customers realize their interest and lead them to purchase it. The selling method varies depending on the product, customer and company size. The sale should be conducted "face to face" at the store or through your computer, phone or over the internet (e-commerce).

The technological and innovation breakthrough requires their integration and monitoring as necessary platforms to support the organization and business management, as well as the simplification of processes and the monitoring of the activity. Thus, it is relevant to promote, in the sector, the Web development, the management of online channels for information, dissemination and sales, and optimizing the presence in online channels. We also need to increase the ability to explore the digital economy, in order to expand markets and supply of available services.

The question that arises is how to identify and anticipate skills needs in the trade sector. The need to provide answers to this question, in a long-term perspective, is reflected at the European Union level, in particular through the work that has been developed by CEDEFOP, which efforts have been notorious in anticipating and analyzing new skills scenarios in different sectors.

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The online requests grow increasingly; as such, there are jobs that face different realities, depending on customer needs, which impacts the necessary tools and skills required to some professionals, so that they can respond to new ways of working.

"Multichannel" consumers can obtain information on the location of a retail shop, they can learn more about the products before arriving at the stores, and can also buy online at late hours. This requires the improvement and construction of new profiles and new jobs (or functions), such as e-merchandiser; e-commerce front office employee and/or back-office; e-commerce entrepreneurs; technical specialist in e-commerce; e-commerce operator; graphic designer; "Integrator" (integrator); traffic controller; analytical Web systems; CRM manager; project technician and web functions manager; online shop controller; systems manager and e-commerce director (European Skills Council Commerce, 2012)[30].

It is expected, for example, that the quick development of ICTs opens new perspectives for business and the creation of new professions, such as specialist in big data and cloud computing, digital entrepreneurs or managers with expertise in e-business and e-leadership (European Commission, 2010)[31].

b. What new skills

In Portugal, companies that sell and buy abroad need sound strategies and adequate facilities to monitor the markets they work in, so as to create permanent basis. This requires workers with specific and specialized skills, so that they can manage important import and export activities on a global scale. These professionals need to be able to negotiate with clients from different cultures and to coordinate adequate support services to these activities (logistics, financial operations, security, etc ...).

According to information from INE (the National Institute for Statistics), in 2000, 64.2% of the active Portuguese population didn´t have a certificate of qualification considered valid. This became, then, the main priority, leading to the development of a system that would allow access to the recognition, validation and certification of skills. Concerning the European Sector Skills Council Commerce Report (2014)[32] were worked, for this purpose, the following qualifications: clerk, logistics assistant, commercial manager, logistics manager, marketing manager, sales engineer and computer technician. That way, the sector´s adult workers with appropriate knowledge and skills could see their experience dully certified.

[30] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2012) *Impact of change & new technologies on skills & occupations in the sector commerce*, Consulting Europe, Brussels.
[31] Source: EUROPEAN UNION (2010), *Europe's Digital Competitiveness Report 2010*, US, Brussels..
[32]Source: European Skills Council Commerce (2014), *Report 2014, Employment and Skills,* European Comission, Brussels

This system contributed to the improvement of the skill levels in the trade sector, in Portugal, and reinforced cooperation between the different stakeholders in the fields of training and education (schools, training experts, skills recognition centers) and labour market (enterprises, social partners , local and regional development organizations). In trade, the same system enabled us to identify the existence of qualified and skilled people and defined teams that would ensure the efficiency, quality and sustainability of the certification process, enabling employers to recruit staff with higher qualifications, leading the same way to the recognition of knowledge, skills and abilities that could contribute to an increase in companies´ productivity and competitiveness.

Presently, a new update of qualifications integrated into the CNQ (Qualifications National Catalogue) is needed, since the situation in 2000 no longer exists. If, at the time, the main concern was still to promote basic training and qualification for all population, now this goes beyond, aiming to keep pace with technological developments, promoting the acquisition of skills needed for the new emerging functions.

As mentioned in the study of the European Skills Council Commerce (2012), the fields of skills recognition and certification are fields which the European Commission has been addressing much, and it keeps developing key initiatives for the future. The European strategy for raising professional skills and profiles is based on different logics:

i. the logic of equivalence, measured either by the equivalence among qualifications, or by training courses and professional upgrade
ii. the logic of transparency, with a conceptual basis to enhance communication between the different countries;
iii. the logic of the development of references, following the trends in the market.

Taking into account these tools and programs aiming at analyzing existing skills and improving transition from school to the labour market, two community initiatives exist, which aim to facilitate the identification and reconciliation of skills in Europe: EQF and the ECVET.

Information and communication technologies have a central role in the development of innovative experiences that encourage the emergence of new learning needs. The use of technological development has different impacts on retail and wholesale, where the focus on logistics is more important. Challenges in innovation are crucial to these sectors, especially in aspects such as the improvement of “inventory” management, the organization of space and the improvement of demand and supply techniques.

The arrival of new technologies in the trade sector has brought severe implications, if we take into account the development of new profiles in the sector. These trends lead to monitoring the integration of these technologies in the development strategies of business activities and in the anticipation of more skills, so that they can be more competitive. Concerning the needed skills in the commercial area,

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we can highlight the profiles: "buyer", which should have the ability to negotiate and to make the purchase order at the best price, expanding its function to the buying services and to the knowledge of other markets; the sales manager; and the commercial technician. In the area of logistics, we can refer the logistics manager; the shopkeeper; the responsible for deliveries; the maintenance technician. Concerning the supporting functions, we highlight the administrative worker, the financial, the accountant, the internet and Information System (IS) specialist; the marketing technician; the quality and sustainable development technician.

The drivers of change in the business world and, in particular, the introduction of new technologies have led to the arising of new skills. The trade sector can be defined by a set of profiles resulting from the impact that such changes had on its activity, often leading to the emergence of new professions[33].

As mentioned in the OECD report (2011), the routine-based jobs have been largely affected in recent years, especially by needs related to computing and outsourcing. In contrast, little evolution on jobs that require complex skills in communication and in tasks requiring the lack of routine and an analytical ability represent a significant challenge to the education and training system, since the easiest skills to teach and validate are those that tend to disappear quickly from the labor market, in more developed economies.

The European Skills Council Commerce Sector indicated, in its report on employment and qualifications - 2014[34], that a way of responding to new skills needs is to establish a specific qualification that provides potential employees with skills directly established by the labour market.

This effort has been recently made in Portugal, for example in the qualification “international trade specialized technician” - the first qualification, ever, of level 5 for the trade sector. This gives access to a post-secondary qualification level that helps to ease transition from school to work and allows, at the same time, progression to a higher level of education. In addition, this strategy also provides access to an attractive and necessary qualification that may promote young people´s employability.

This measure brought innovation and attractiveness to the trade sector and met a real need expressed by Portugal and international companies operating in the country, for proper professional training to those who can support these companies in the internationalization process. Companies promote training in their workplace with a view, in particular, to future recruitment procedures.

A survey conducted among 47 member companies of BCSD Portugal - Business Council for Sustainable Development - identified the five less available skills in Portugal[35]:

- Technological engineerin;
- Commercial, marketing and communication of information;

[33] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2012) *Impact of change & new technologies on skills & occupations in the sector commerce*, Consulting Europe, Brussels.
[34] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2014), *Employment and Skills, Report 2014*, European Comission, Brussels.
[35] Source: http://www.bcsdportugal.org/

- economic Sciences;
- Operations and logistics;
- automation[36].

Among the referred skills, we can find the following examples of professions: network technicians, programmers and systems analysts (engineering technology), CRM technical / relationship marketing and e-commerce (business, information marketing and communication) and automation programmers (automation).

In addition to those scarce skills, the survey also identified five critical skills for business, i.e., those which are essential to the development of companies and their respective businesses, such as:

- operations and logistics (chain of value)
- automation;
- commercial, marketing and communication of information;
- materials and mechanical engineering;
- technological engineering.

In the commercial, marketing and communication of information, the most critical skills are purchasing and negotiation, relationship marketing and commercial prospecting.

In terms of behavioral skills, the study found out that leadership is the most needed skill for professionals, while customer orientation and results orientation are considered the most critical for the development of business.

Today, we can identify a set of priorities for skills development, taking into account the evolution trends and the objectives for development of the trade and services sector. In this sense, it´s possible to identify the set of qualifications, skills and training references that will need to be reassessed, in order to get better adjusted to the sector needs.

The study developed by Quaternaire (2015)[37] warns about the technology push and calls for the mobilization of skills needed for networking, using various communication channels supported by ICT. The table below shows, briefly, the work carried out by Quaternaire (above mentioned), which is based on the development of new qualifications, that are structured in competency units.

Table 3 - Proposed Benchmarks of Skills, from Quaternaire Portugal

The qualification Technician/Sales and Marketing assumes, as an organizational principle, the gathering of the sales component currently present in the Technical/Sales and its association with areas of skills that are included in the Technician/Marketing. Thus, it seeks to promote a greater functional integration between the components promotion and sale, widening the scope of employability of the Marketing Technician which, according to the formation gathered, faces a decrease in demand from

[36] Source: http://www.bcsdportugal.org/

[37] Source: QUATERNAIRE (2015), *Strategic Program of training for trade and services (2014-2020*), CCP, Lisbon.

the labour market. The areas of competence related to e-commerce, e-marketing, and to after-sales service are some of those justifying a higher update.

The qualification Trade Technician welcomes, as main areas to update, reception and advice to the client, marketing using online channels, after-sales service and follow-up, visual merchandising and skills needs for business undertaking and management.

The qualification Secretariat Technician maintains the general framework of the qualification that already exists in the National Qualifications Catalogue, but an update of skills is proposed, to be mainly developed with regard to the areas of support to contracting procedures, the management of information, communication and the coordination of work teams.

The qualification Logistics Technicians also exists in the National Qualifications Catalogue, but is subject to a review in the current proposal. In addition to the updating of more "classic" contents related to warehouse management component, this qualification intends to include also the intervention of the logistics component in the planning of production processes, to deepen the components coordination and monitoring of activity and of work teams, as well as of the distribution management. Soft skills in communication and in team-coordination are also included in this exercise.

The qualification Communications and Customer Service Technician corresponds to the proposal for a new qualification that resulted from contributions received via ANQEP and pointing in the direction of creating a qualification in the area of contact centers and customer service. As it is perceived in the diagnosis, this is an area with growing dynamics in the field of new services configuration and, hence, of employment. The presented proposal seeks, however, to slightly extend the scope of such intervention to this new qualification, considering a broader space for customer service. In this perspective, this qualification intercepts the qualification Sales and Marketing Technician and the qualification Trade Technician, assuming some of the skills that are worked there and strengthening communication skills and skills associated to web technologies and information and communication systems. The dimensions of promotion and sale and, in this context, the use of online platforms and of distance communication resources are areas of development of further skills.

The qualification Support Management Technician updates the level 4 qualification already existing in the National Qualifications Catalogue, but raising the level of learning outcomes to achieve. Indeed, the diagnosis stresses the dynamics of the employment qualification that occurs in the subsector of business services and, in that respect, refers the importance of better leveraging the learnings baseline in the field of management. In this respect, the reference tries to maintain a transversal approach to skills, promoting their updating taking into account, also, the level of qualification that now includes this qualification. The domain of management control, the aspect of interaction in expanded work teams, and of coordination of smaller teams, the field of marketing and communication, are privileged areas for the process of skills reviewing and updating that was implemented.

The qualification of International Trade Specialist Technician already exists in the National Qualifications Catalogue, its revision having been done on the basis of the collected diagnostic data and of the working proposals that had been sent to ANQEP for this purpose. The strands of markets prospection and business planning, management of transaction processes and communication skills are some of the privileged aspects in the review process.

The option for referring proposals for partial and specialization certifications, for each reference developed, should also be mentioned.

These certifications seek to strengthen the ability of the system to respond in terms of lifelong learning promotion, establishing qualification routes composed by sub-sets of skills units included in the qualification framework, and which seek to respond to training needs valued by the labour market. Below, we can find the meaning given to each of these levels of certification:

Partial certifications, organized by the selection of a set of skills units from the core of the skills framework.

Specialization certifications, organized by the selection of a set of skills units from the flexible component of the skills framework (skills units stock).

In the case of partial certification, the number of units of associated skills and the corresponding training course represent a part of the skills framework considered necessary for the award of a level 2, 4 or 5 qualification of the National Qualifications Framework, and it reflects the definition of coherent sets of skills that contribute to professional development.

In the case of specialization certifications, the training course considers the deepening of learnings that correspond to professional specialization areas. From the organization of skills frameworks point of view, these fields are built by identifying a set of skills units – included in the SU stock - which enable the specialization of areas of expertise, from the core of the skills framework.

Source: QUATERNAIRE (2015), Study of "Strategic Training Programme on Trade and Services (2014-2020)", Final Report, Quaternaire Portugal, Lisbon (pp 156-158.).

IV - Skills, competences and training needs related to the use of ICT

I - Results from Qualitative Research

a. Methodology adopted:

The Portuguese partnership, constituted by CCP, CECOA and ANQEP, organized a Focus Group, which took place in CCP's premises in October, 9, 2015, around four central themes for this project. This report includes the analysis resulting from the discussion on the first three mentioned topics, since the fourth will be included in the report on activity 3 of All-Ecom project ("Growth trends/developments in the sector"; "How technologies affect jobs in trade "; " Training needs in Electronic Commerce "and" The provision of training and innovative learning methods "). The main objective of the session was to promote a discussion on these issues, among a number of stakeholders from the trade sector.

In order to promote an active involvement from the invited participants, and therefore ensure the success of the session, a document about the project, the thematic study, the objectives set for the focus group, and the methodology to be used in the session, was previously sent to them.

During the session, a *round the table* has been done, promoting all input providing, from all stakeholders, that could be fruitful and gave everyone the opportunity to submit their opinions, criticisms and notes on the subject of each topic at stake.

Concerning the necessary consultation to employers, the partnership chose to undertake it by e-mail, following the same methodology of the project presentation and of the issues under discussion, to which it added some ideas resulting from the previous focus group. The methodology adopted then tried to overcome the difficulty that employers, in the trade sector, have to be absent from their workplace in festivities seasons, as it was Christmas.

It should be noted that the consultation carried out with stakeholders and employers was able to achieve the goal outlined by the project, having resulted in a set of ideas/conclusions, which are presented below.

B. Main conclusions reached:

Themes 1 and 2: Growth Trends / developments and challenges facing the sector / Technology and employment in the trade sector

The following two points have been unanimously outlined:

- ICT and e-commerce influence traditional professions.
- New qualifications arise, as a result from ICT and e-commerce.

Besides the above mentioned points, it was still possible to assemble a set of notes from the discussion, which can be grouped into three distinct levels: consumer level, company level and employment level, as outlined below.

1.1. From the Consumer point of view

- Consumers have, now, a longer life and more qualifications. They are also better informed, and are increasingly using information and communication technologies. As such, we witness a more sophisticated consumption new standard, with a necessary impact on the trade sector.
- From the new patterns of consumption related to the use of new technologies, results an effective dynamics of relationship between the presence in the Internet, the physical space, the participation in social networks and the use of mobile communications, which are present in an increasingly integrated way, making the shopping experience a multifaceted process.
- This way, the client is, nowadays, more demanding and less tolerant about inefficiency, looking for rapid and effective responses from companies, to meet his needs. Before visiting the physical store, he will already have done, in most cases, research on the product he is looking for, making demands on the company's employees grow, not only in the virtual shopping, but also in the physical space. It is essential that e-commerce platforms can also include adequate information on the product availability.
- On the other hand, young people are much more sensitive to purchase online, making platforms need to be more appealing.

1.2. From the Company point of view:

Focusing on company issues, it was possible to highlight both a number of opportunities and some challenges that they will face, resulting from the integration of ICT in their business.

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Opportunities:

- The existence of several “places” where you can shop = multichannel;
- The Online shopping will continue to grow, and the trend will be that we stop looking at the physical establishment as we know it;
- The existence of online supports brings the companies´ ability to respond closer, regardless of their size;
- The co-existence of online and offline business models.

Challenges:

- The "old" business models have to be open to innovation and new business models;
- The presence of the multichannel business is inevitable, today, and these should be aware of the need for specialized training in the digital area;
- Operations will become digital;
- Online sales platforms will have to be simplified, as a way to attract new agents/customers to the business ;
- Both logistics and customer support are different in the e-commerce model, when compared to the “traditional” logistics, requiring a different organization and management;
- Given the context of digital economy, the need arises to pay attention on issues related to a legal framework on data protection and privacy on the web, as well as on competition on the web.

1.3. From the Employment point of view

Given the changes resulting from technological evolution, we highlight below some factors that push for a change in the trade sector, resulting from the incorporation of ICT in all activity:

- Use of ICT in back-office functions; in communication, information and promotion; in customer loyalty strategies and in supply;
- Interaction between ICT and the business designing/planning function;
- Distance Selling supported by the Internet;
- Online and mobile channels in support of marketing functions;
- Communication, sales and after-sales service;
- Automation of sales transactions and introduction of differentiated business models.

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Theme 3: Training Needs in Electronic Commerce

Taking account of the factors from the preceding paragraphs, it´s urgent to invest in the integration and monitoring of technological innovations, such as mandatory platforms to support business organization and management; optimization of the presence in online channels; and exploitation of the digital economy, for markets expansion and service offering.

Employment dynamics oriented towards administrative work and logistics create the need for investment in the qualification of human resources, in areas related to trade - in particular, sales.

At the same time, qualification of employment sectors marked by low qualifications is considered necessary.

According to the identified trends, in terms of qualification the following interventions are considered a priority:

- **The current qualifications have to be enriched/updated to meet the skills needs resulting from the trends;**
- **Creation of new skills is needed. The lack of competence in ICT, from those who think business, can be critical to their success.**

Thus, it was possible to list a set of ideas resulting from the above highlighted points:

- There are many factors that influence business activity, however, they all require adaptation related to the introduction of technology.
- The technology push calls for mobilization of expertise for network performance through communication channels supported by ICT.
- Fast evolution of e-commerce will require an increased investment in technology and talent from the sector, to train human resources with the key skills to potentiate better business performance. The core skills identified were: information management; having an analytical mind; learn to learn; the ability to communicate at a distance, both orally and in writing, in a foreign language; and the ability to build intercultural relations.
- Given the existing gap between the needed and the existing skills, it´s urgent to focus on the improvement of skills in e-commerce, not only for company´s employees, but also for employers (for business owners and managers, attending a training action in digital entrepreneurship would be fundamental).
- Mainstreaming "e-commerce" in the different existing qualifications, as well as the creation of a new offer of Technical Specialist in e-commerce - which could be level 4 or 5 – is considered relevant.

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- Considering the above mentioned, it´s urgent to define the set of qualifications and the set of skills and training references/standards that will require a reassessment in order to better adjust themselves to the sector's needs (on request from CCP, Quaternaire Portugal developed a Study aiming to develop a set of skills references reflecting the changing dynamics occurred in each professional domain of the sector activities. Thus, amendments have been proposed to the National Qualifications Catalogue in areas such as: Sales and Marketing; Trade Technician; Secretariat Technician; Logistics Technician; Communication and Customer Service Technician, Management Support Technician; and Specialist Technician in International Trade - as outlined in Table 3 of this report.)

II – Results from Quantitative Research

1. Results from Employers Questionnaires

Part A: General information about Companies and Employers

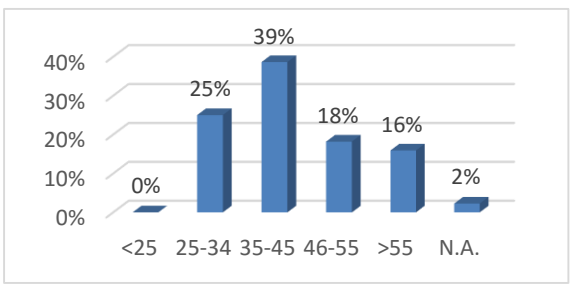
It was made a survey to a significant number of companies through the affiliated Associations in CCP and it was possible to obtain 44 responses.

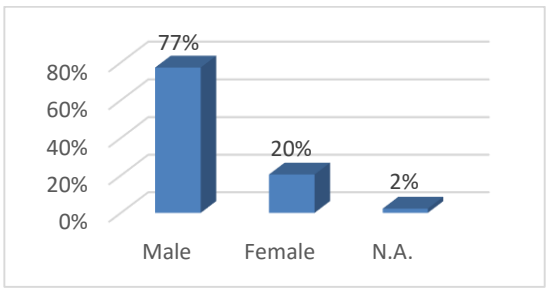
I – Employers information

1.1. Age and Gender

Regarding age and gender, the majority of respondents are located in the age group between 35 and 45 years old, and are mostly male employers.

Charts 36 and 37 – Distribution by age and gender (employers respondents)

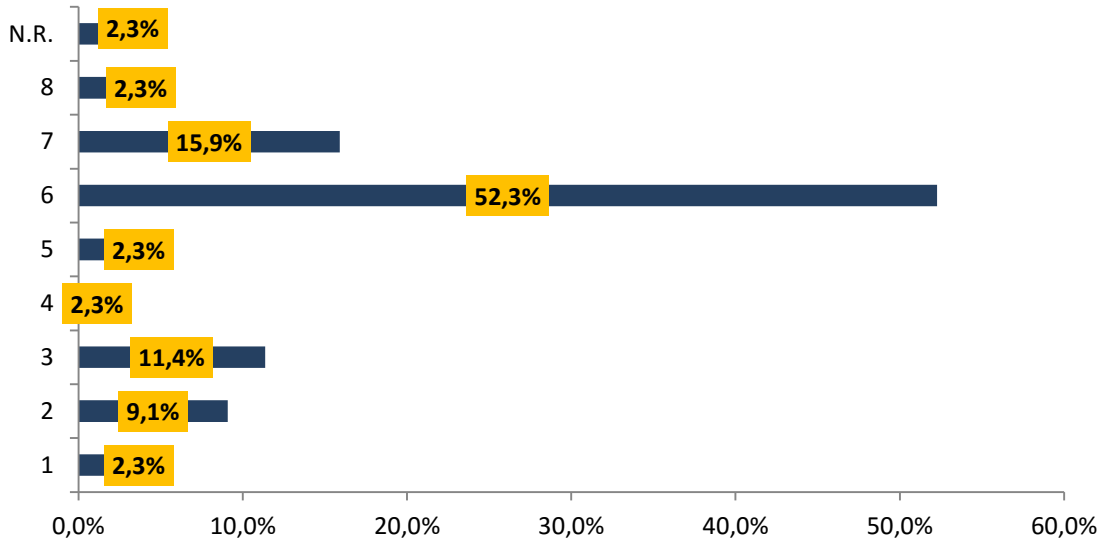




1.2. Qualification Level

Concerning qualification levels, most of the surveyed entrepreneurs have educational qualifications, equivalent to level 6 of the National Qualifications Catalogue, as shown in chart 38. These values that somehow contradict what was previously mention regarding the level of qualification of the majority of the persons employed in the commerce sector, are associated with the number of entrepreneurs in the pharmaceutical industry (see chart 50) who were invited to participate in this study.

Chart 38 – Qualification Level



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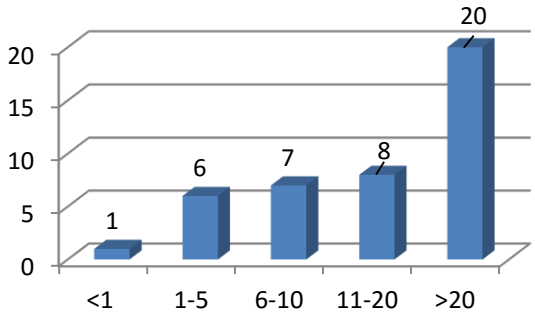
II – Company information

2.1. Company existence in the market

As we can see in graphic 39, most part of the companies have been working in the market for 21 years or over.

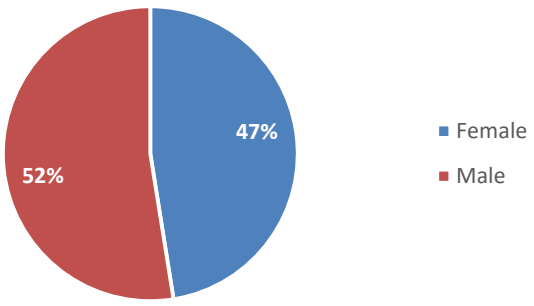
Chart 39 - Distribution of companies by their time of existence



2.2. Persons employed by gender

According to the answers given, 52% are male e 47% female (Chart 40).

Chart 40 - Distribution of employees by gender



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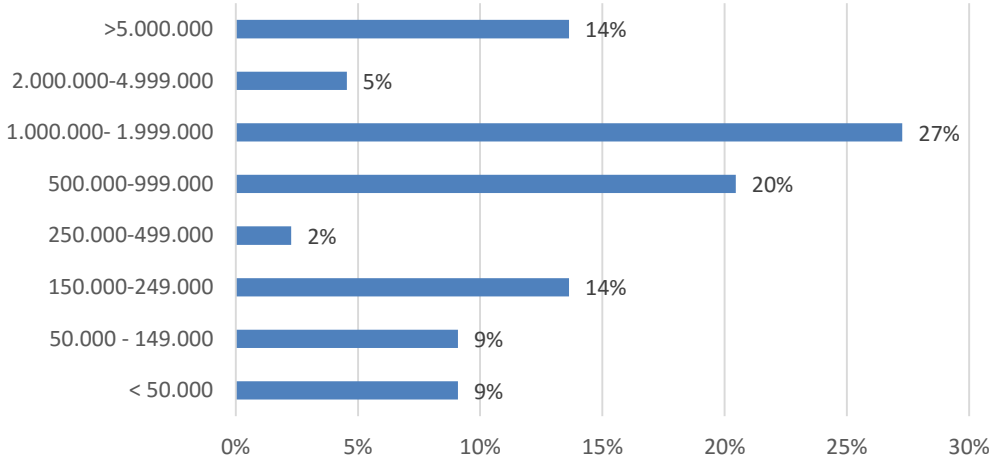
2.3. Turnover

The overwhelming majority of the respondents claims to have a turnover corresponding to a range of 1 000 000.00€ to 1 999 000.00€.

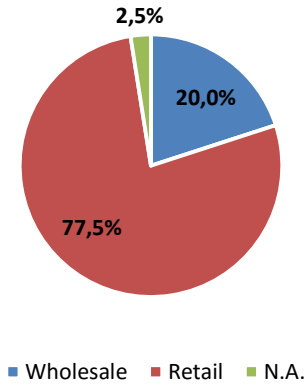
Chart 41 – Annual turnover (2014)



2.4. Sector of Activity

About 80% of the enterprises surveyed frame their activity in the subsector of retail and just 20% classified themselves as wholesale companies. The chart 43 highlight the sub-sectors of activity where the companies of this survey are framed.

Charts 42 and 43 – Distribution by Sector of Activity



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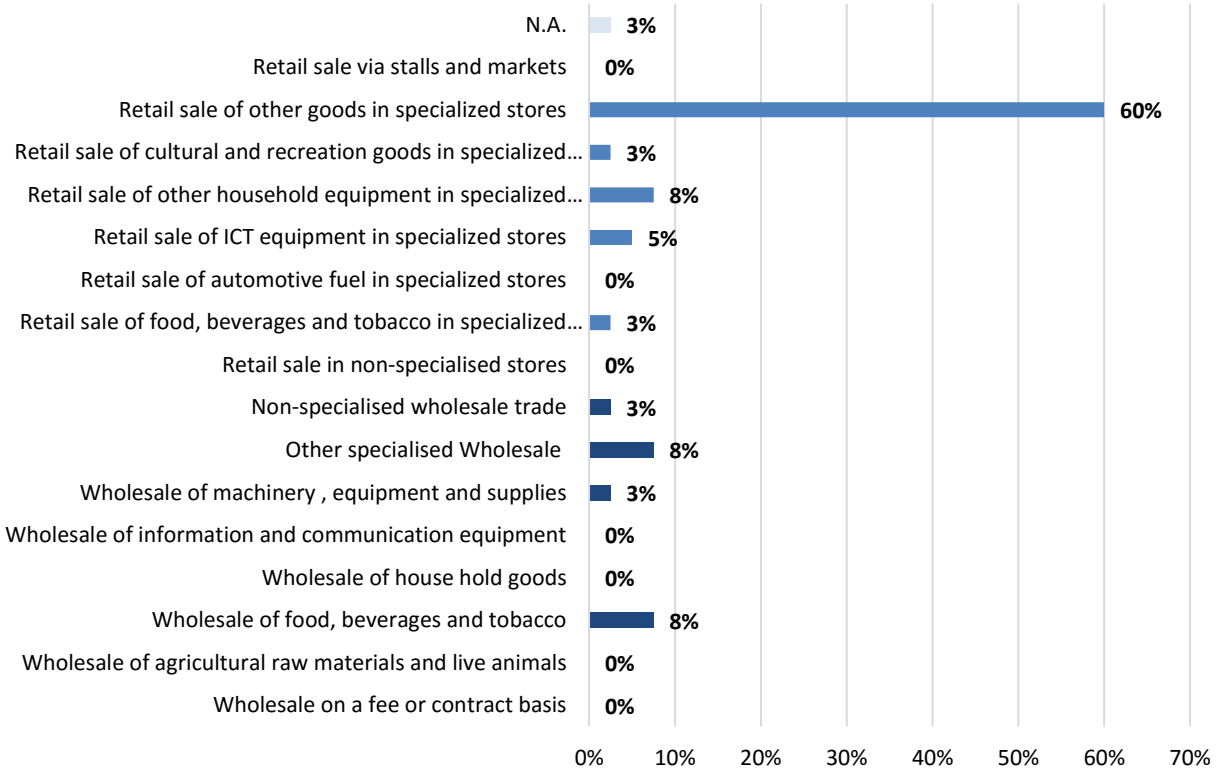

2.5. Use of new Information and Communication Technologies (ICT)

Regarding the use of ICT, especially the use of Internet, the surveyed companies have a strong adhesion to this tools, especially in order to communicate with their suppliers (95%) and interact with clients (93%). However, it is confirmed that only 20% of them have an Internet presence through online stores and use ERP application software, beside only 43% use CRM software.

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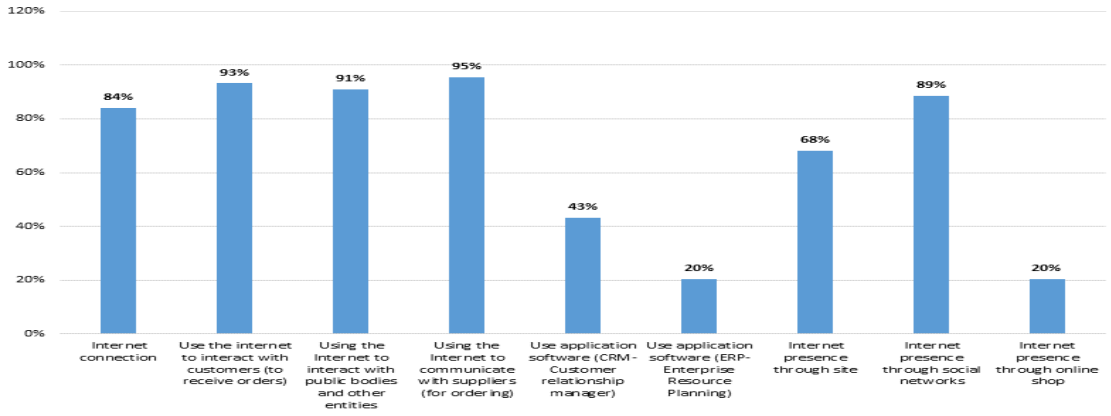
Chart 44 –Type of use given to ICT by the companies surveyed



Part B: General Development of the Sector and Companies

1 - Digital challenges triggered by "digital age"

The questionnaire addressed to companies asked them to identify the main challenges that have been triggered by the digital era, both for companies and for the sector. The chart shown below illustrate the factors that, in recent years, constituted a challenge. Respondents recognize as the greatest challenge the one related with the occurrence of changes in the behaviour and the needs of consumers (64%: company, 68%: sector).

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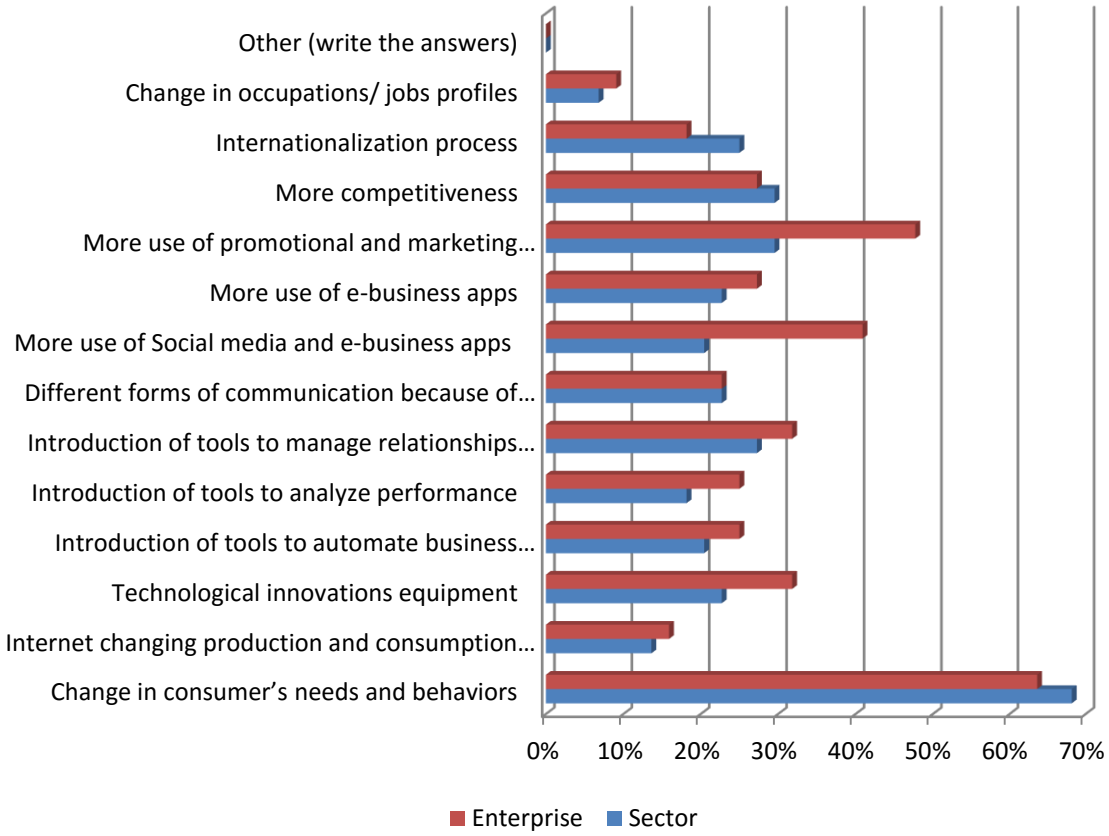
Chart 45 – General overview of the sector and companies: challenges encountered



2 – ICT skills currently existing in enterprises

2.1. Digital Skills / Technological and Attitudinal skills

The identified challenges, whether in the company or in the sector, resulting from the current technological advancement, led to a gradual adjustment of companies that should develop appropriate digital and attitudinal skills.

Therefore and as we can see through the charts 46 and 47, the skills developed by the companies surveyed in recent years, were general digital skills (91%) and basic computer skills (89%), as well as sense of responsibility and commitment to the execution of assigned tasks (86%), this last one on an attitudinal perspective.

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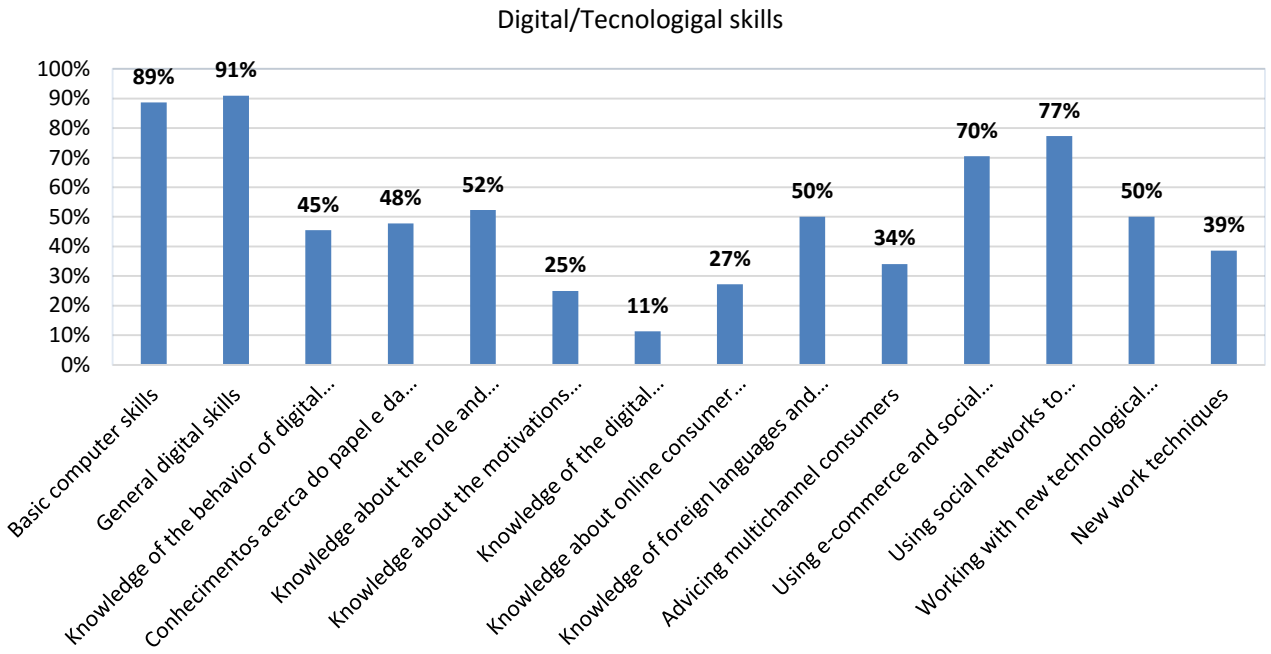
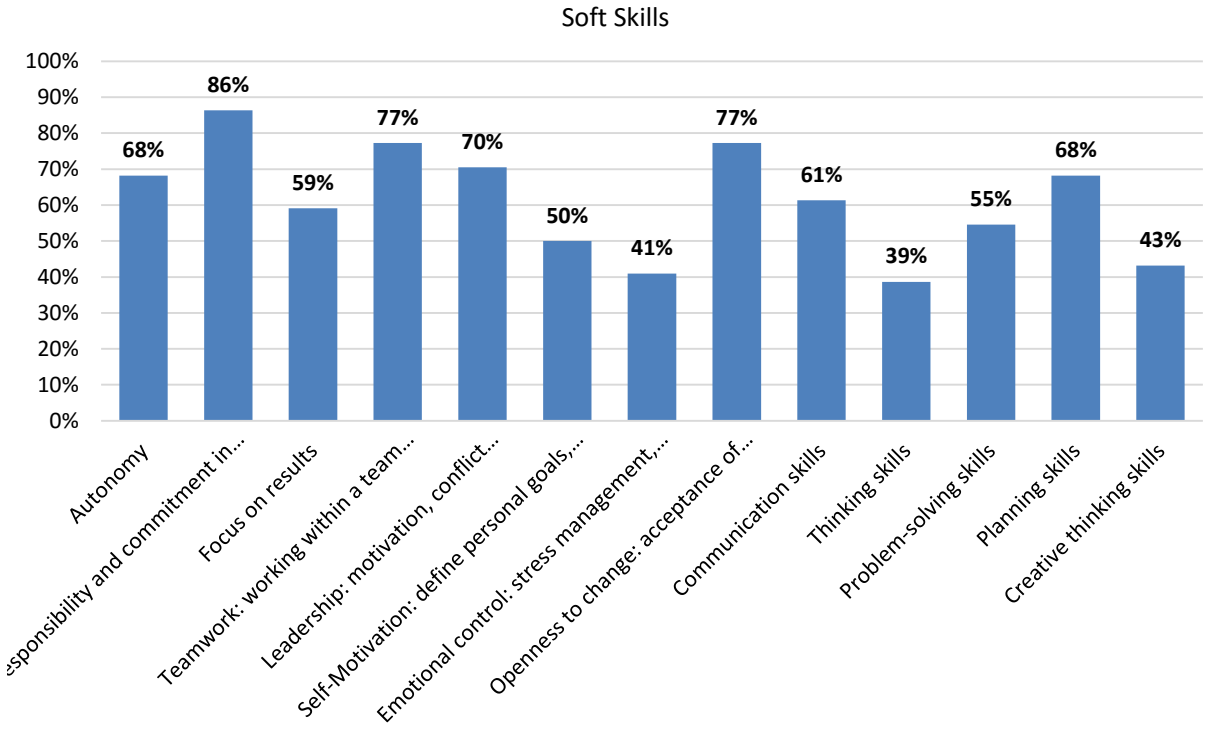
Charts 46 and 47 – Current skills considering the sector evolution





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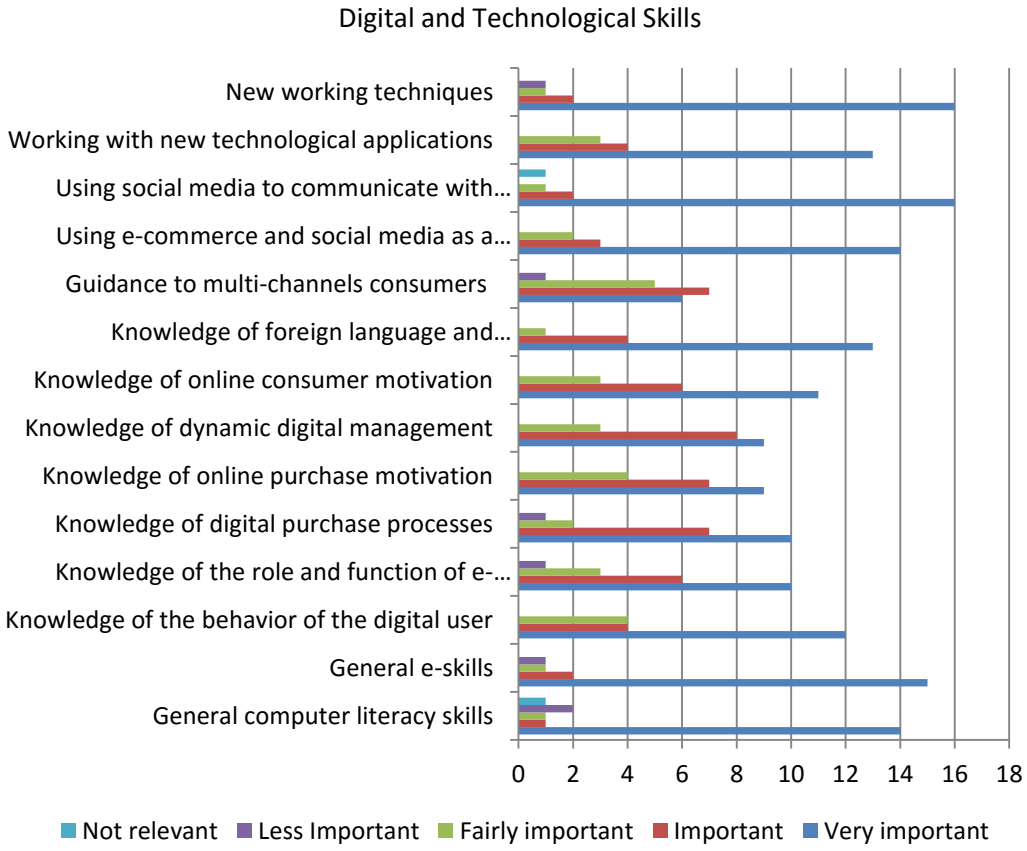
3. Importance of new skills taking into account the evolution of the sector

3.1. Digital Skills / Technological and Attitudinal skills

Bearing in mind the challenges faced by companies concerning the development of skills arising from the rapid technological advancement, the respondents considered as "Very Important" the investment in basic computer skills, such as "knowing how to use the computer and its most common software and internet" as well as general digital competence, such as" knowing how to use in general information and communication technologies". It is also important to menttioned the development of "new work techniques" (see chart 48).

With respect to attitude change, it was considered very important to develop skills related with teamwork, focus on results and responsibility and commitment to assigned tasks (see chart 49).

Charts 48 and 49 – Importance of new technologies in the the sector evolution point of view



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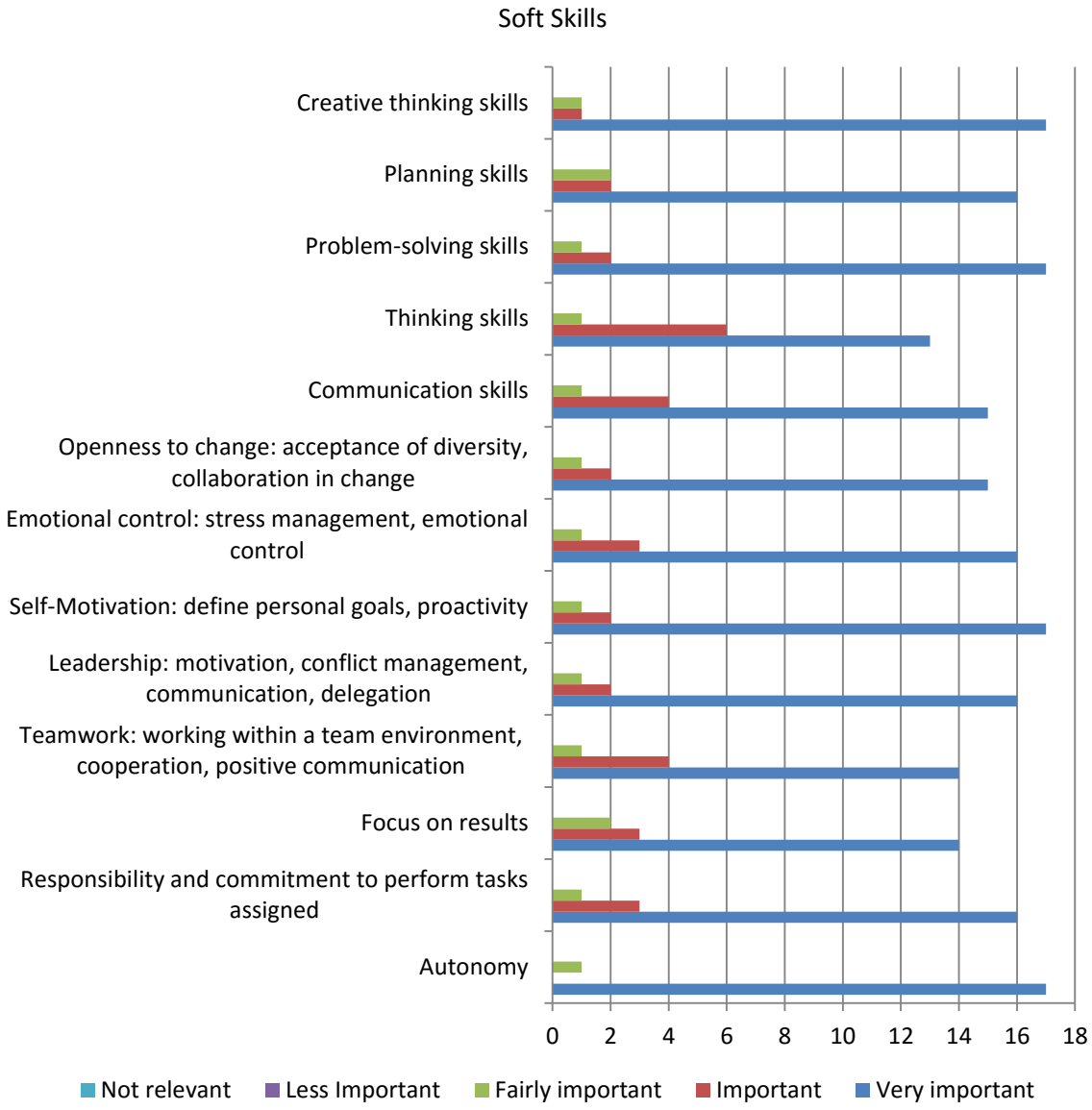

4 – Persons employed with expertise in e-commerce, by gender

The chart 50 shows that the functions with greatest number of people with skills in e-commerce are those related to the pharmaceutical industry, this sector is responsible to have persons employed with higher skill levels.

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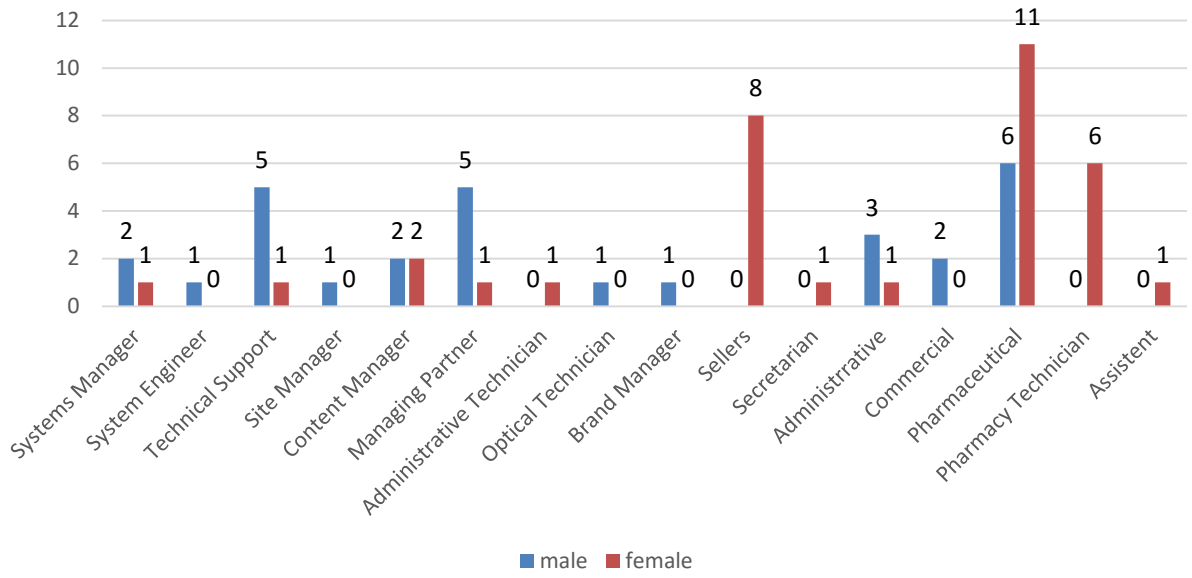
Chart 50 – Employees in Electronic Commerce area, by gender and by function



5 – Functions / relevant emerging professions for business competitiveness (short term)

The companies were also asked to indicate the type of emerging occupations related to the challenges facing the sector by integrating ICT in their daily activity. The vast majority pointed out the "e-merchandiser" as one of the occupations / professions more relevant to the adequacy of the sector to the digital presence, also “CRM specialist” was indicated as one of the most important occupations for the sector (Chart 51).

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Chart 51 – New Occupations taking into account the challenges identified

2. Results from Employees Questionnaires

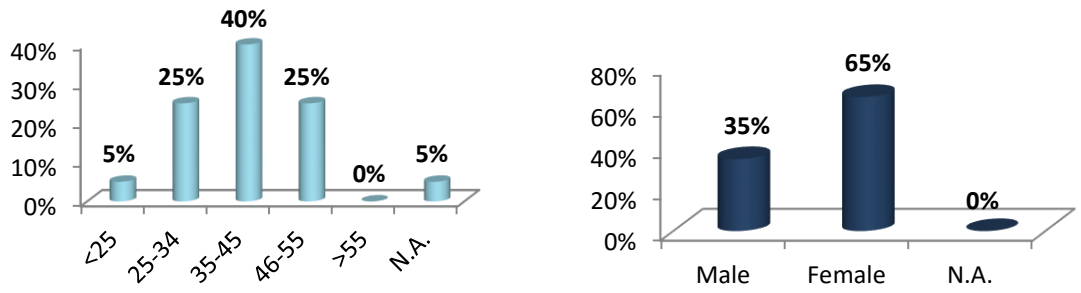
Part A: General information of the Employee and the Company

I – Employee Information

1.1. Age and gender of respondents

The survey was addressed to a group of employees of the commerce sector (20 responses were achieved) and through the characterization of this group of respondents, we find out that the vast majority (40%) had between 35 to 45 years old and were female (65%) (charts 52 and 53).

Charts 52 and 53 – Age and gender



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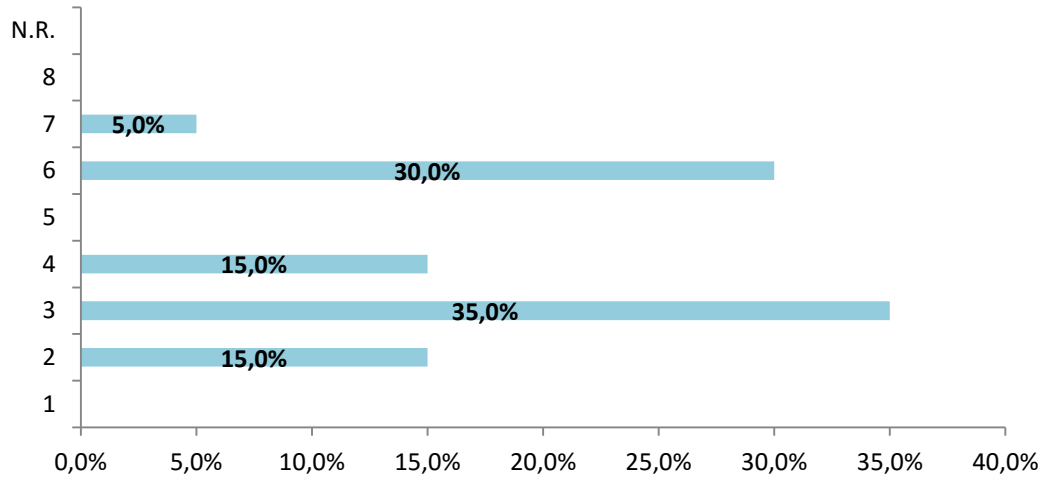
1.2. Qualification level

As far as qualifications levels is concern, 35% of respondents have a level 3 qualification, according to National Qualifications Framework (NQF), followed by level 6 (30%), as represented in the chart below.

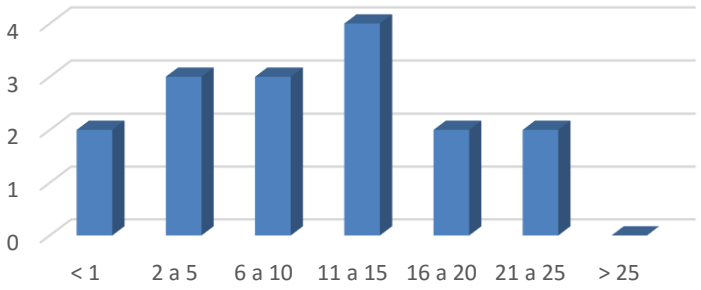
Chart 54 – Qualification level (according to the EQF)



1.3. Years of service in the company

When asked about the period of permanency in the company where they are at the moment, it appears that most of them work in the same establishment for more than 11 years and less than 15.

Chart 55 – Period of permanency in the company (years)



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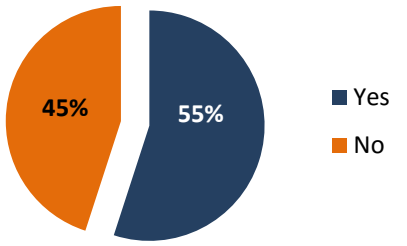
1.4. Function performed in ICT

An interesting fact, of this survey directed to employees, is related to the functions exercised in ICT, since 55% of them plays a role in this area. It is described below some of these occupations.

Chart 56 – Function performed in ICT



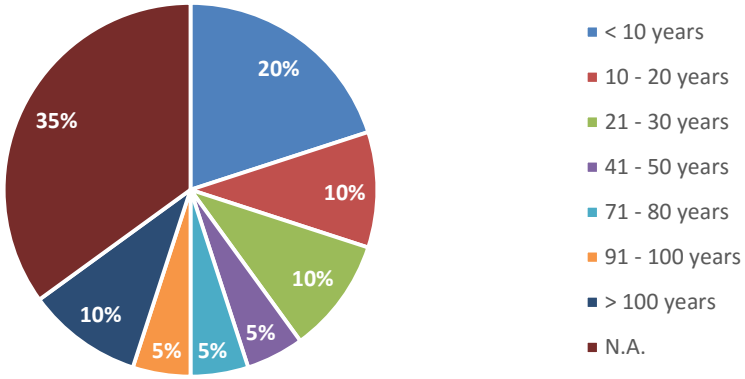
Managing Partner
Graphic Designer
Marketing Manager
Manager
Administrative
Marketing Assistant and Product Manager
Store manager
Commercial director
Technician

II – Company information

2.1. Period of permanency of the company in the market

To the question related to the period of time the company is in the market, we found out that a large percentage have not completed 10 years of existence, nevertheless it is noted that most of the respondents did not answer this question.

Chart 57: Time of Establishment (years)



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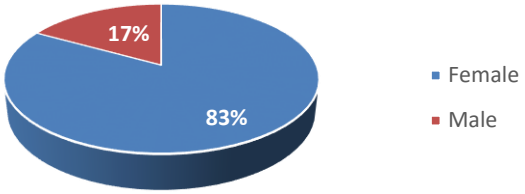
2.2. Persons employed by gender

Considering the knowledge that respondents hold about their company, 83% of the persons employed in them are female.

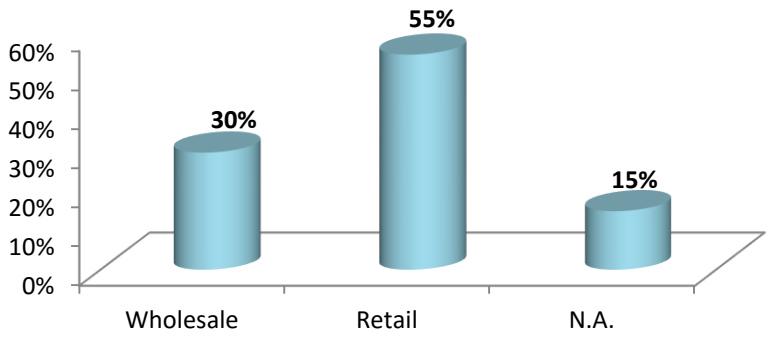
Chart 58: Persons employed by gender



2.3. Sector of Activity

As regards to business sector, 55% of the companies in question has an activity framed in the subsector of retail, against 35% in the wholesale sub-sector. Be noted the lack of response from 15% of the respondents.

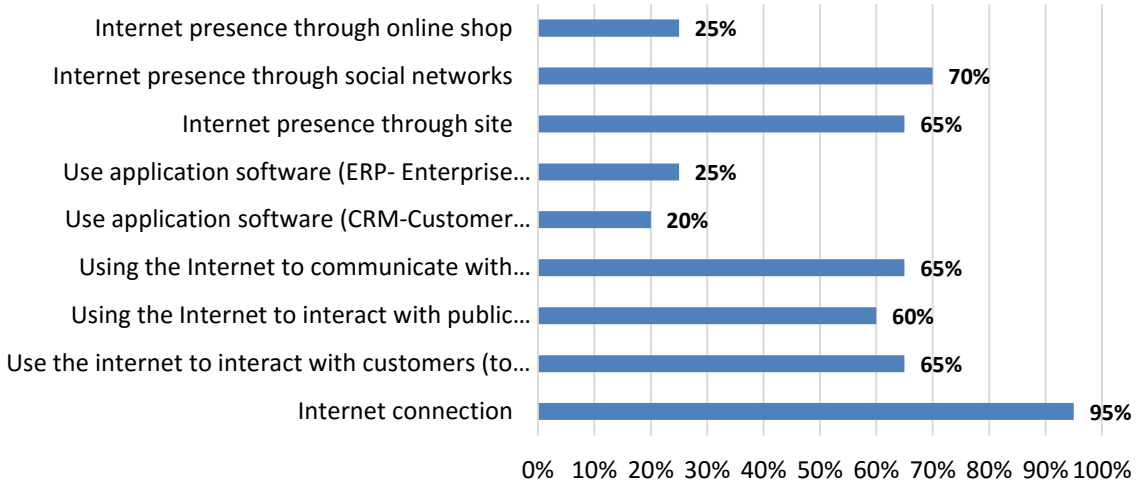
Chart 59 – Distribution by Sector of Activity



2.4. Use of Information and Communication Technologies

Moving on to an analysis about the use of ICT by companies in the perspective of its employees, we find out an almost complete adherence to internet, since 95% said that they have an internet connection, also emphasizing a presence on internet through social networks (70%). The use of CRM and ERP software, as well as the presence on internet through online shopping, had percentages of around 20% and 25%, continue to figure as key indicators with less expression in this companies.

Chart 60 – Recourse to the use of ICT



Part B: Existing ICT skills or to develop

1 – ICT skills currently existing in enterprises

1.1. Digital Skills / Technological and Attitudinal skills

With regard to the existence of digital skills that companies need nowadays, it was possible to conclude thought the employee's survey, a strong investment in the development of basic computer skills, as well as in digital skills (Chart 61), by the way this corroborates the information obtained in the inquiry made to employers.

Concerning soft skills, in general, they were widely highlighted by the respondents, with percentages above 55%, however, we can see a focus on autonomy (Chart 62).

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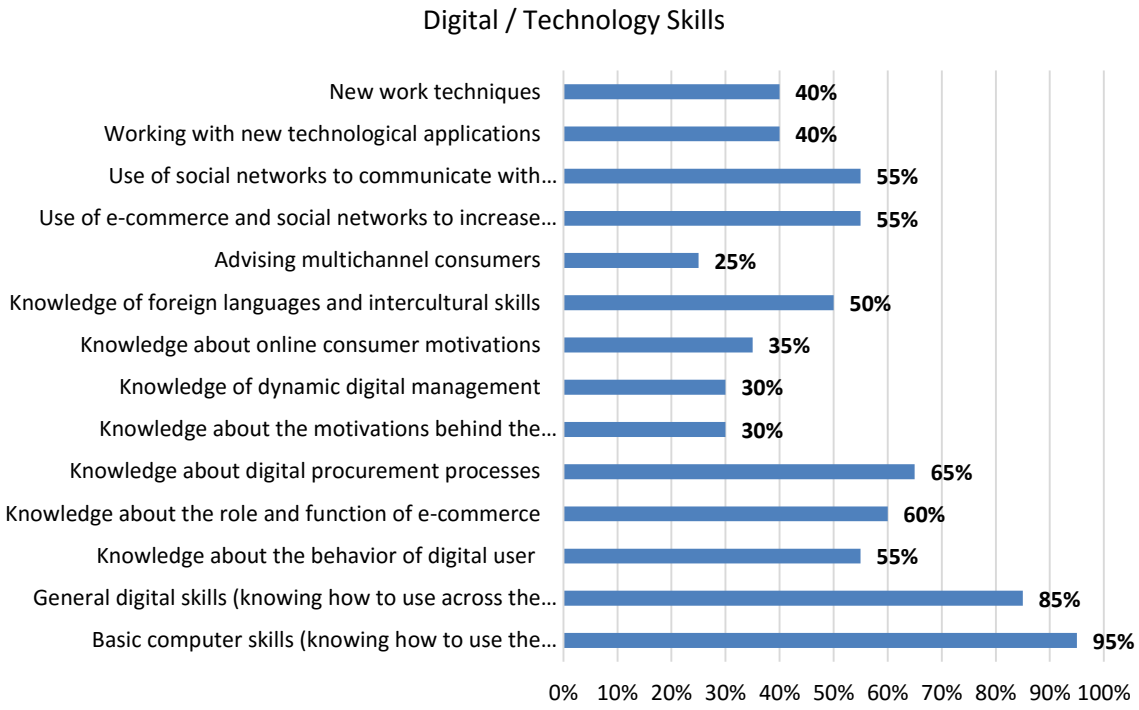
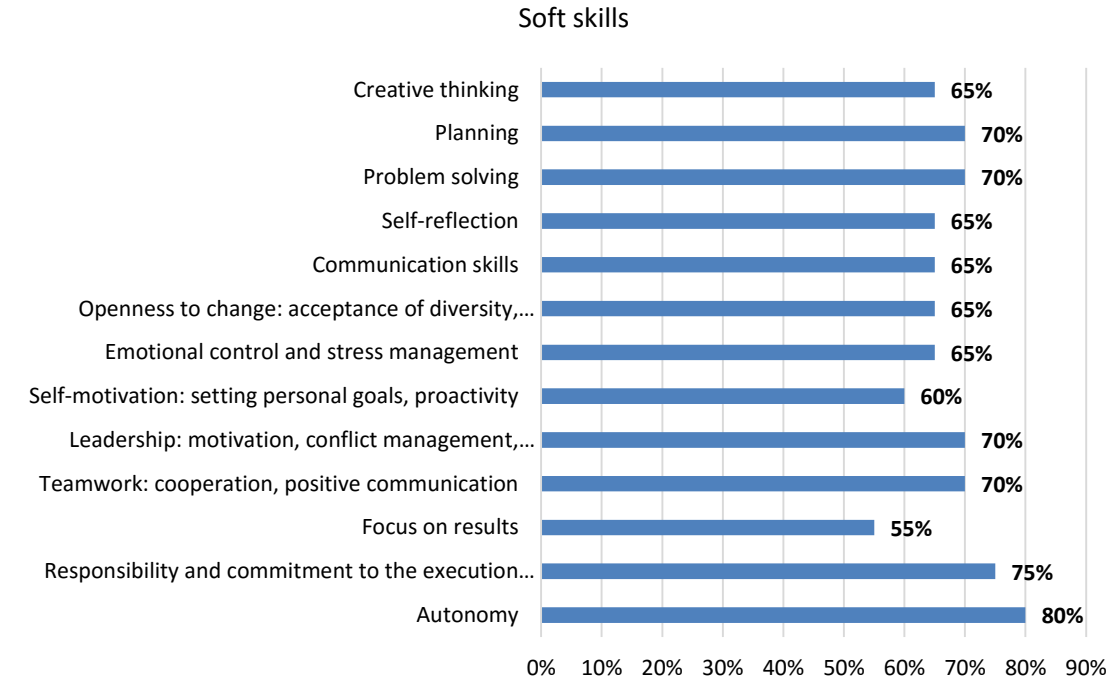
Charts 61 and 62 – Existence skills arising from the development of the sector/company





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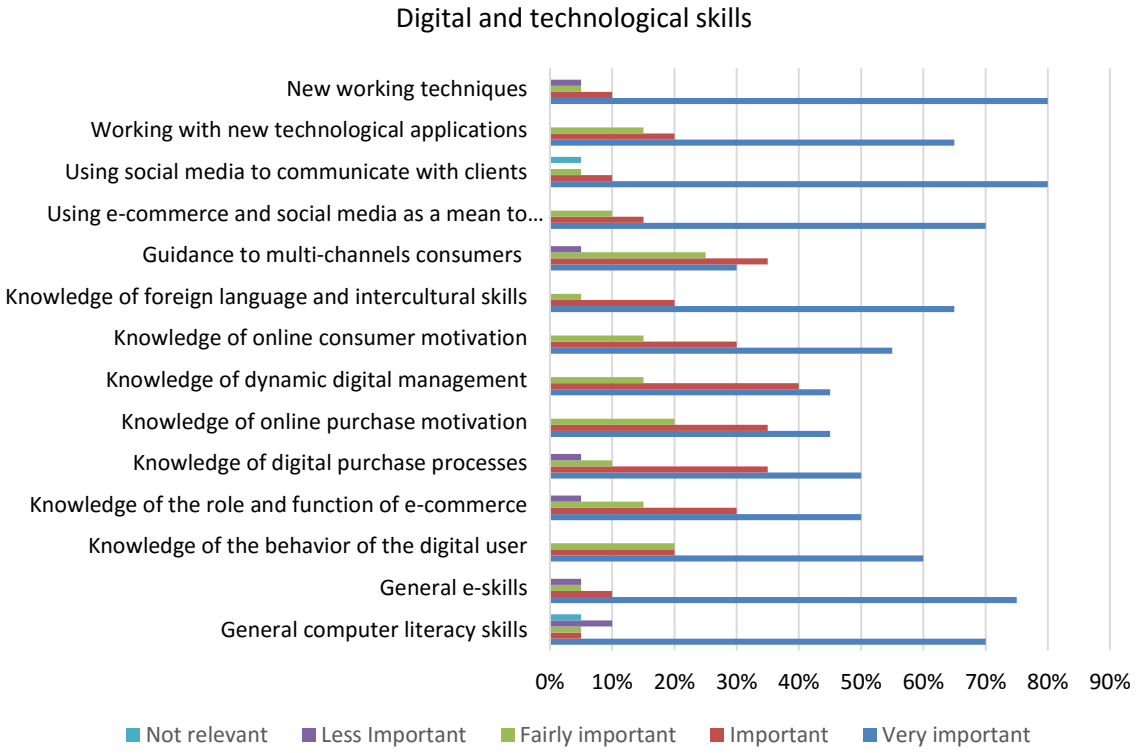
2 - Importance of new skills taking into account the evolution of the sector

2.1. Competências Digitais /Tecnológicas e Competências Atitudinais

By analysing the importance given to the development of new digital skills, and taking into account the evolution of the sector and the respective company, it was considered by the respondents as key skills, the ones, related to new working techniques and to the use of social networks in order to communicate with customers (80%), followed by the increase in general-skills (75%), having stayed by 70% the importance attached to basic competencies in information technology, as well as the use of e-commerce and social networks to increase sales.

When checked the degree of relevance assigned to skills in a perspective of changing attitudes, it was considered by the respondents as key, practically all the indicators mentioned in the questionnaire, which were marked by more than 65% of the respondents, with particular emphasis on factors related to creative thinking, problem solving, self-motivation and autonomy.

Charts 63 and 64 – The importance of new skills taking into account the evolution of the sector / company



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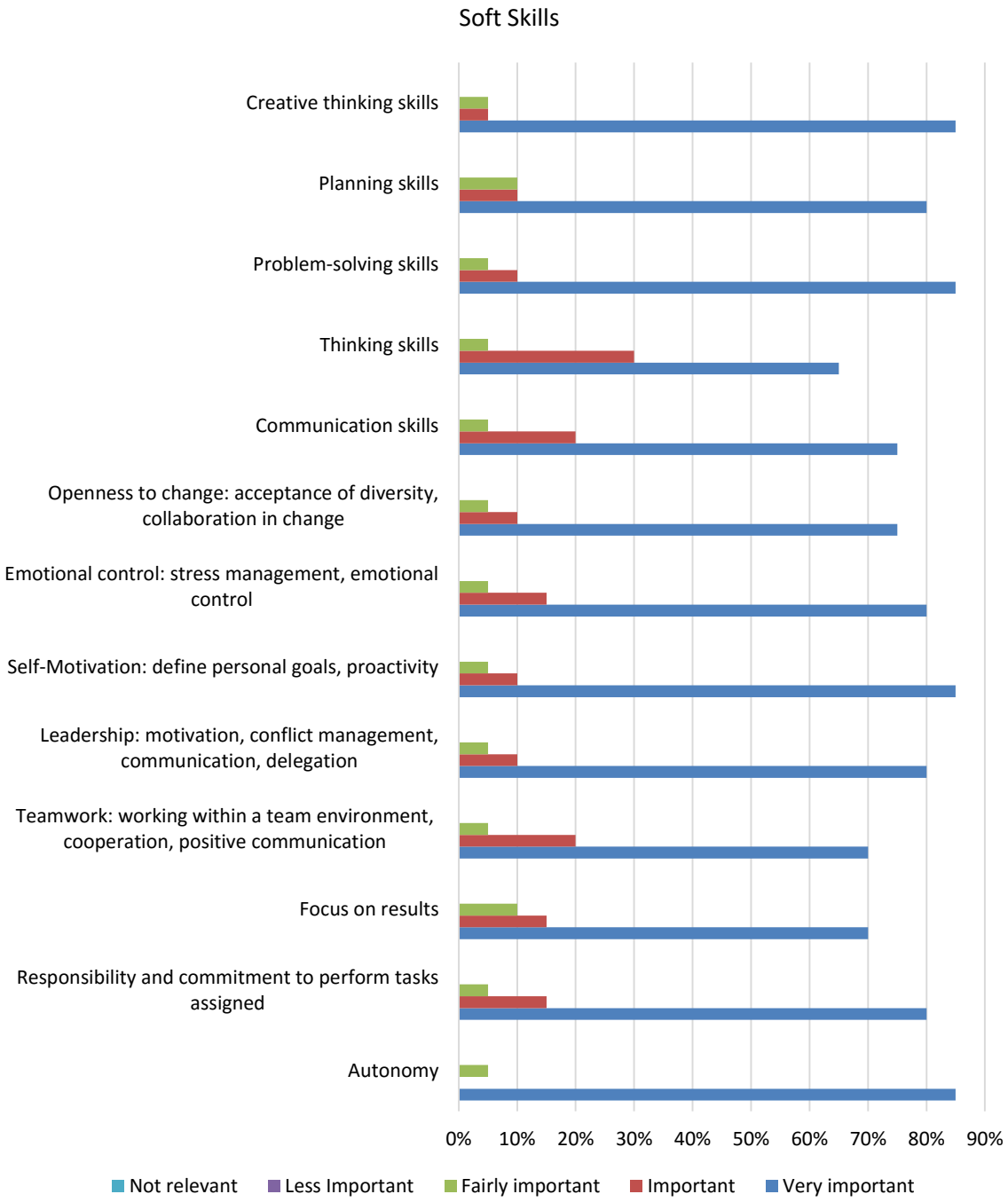

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V - General Conclusions

1. E-commerce: general numbers on the state of the art

Sector´s Global Data

- According to data from INE, concerning 2013, the trade sector comprised 198,513 companies, 60,052 from the wholesale sub-sector and 138,461 from the retail sub-sector. These companies were overwhelmingly micro and small companies, accounting for approximately 95% of the all sector.
- The trade sector reached in 2013 a turnover of more than 104 billion euros, being the wholesale responsible for 59% of this amount. Given the companies´ size, the huge majority had a turnover of less than € 50,000, which justified that large companies represented 38% of the business turnover, although representing only 0.05% of the total number of companies.
- The trade sector was responsible for employing almost 21% of the total number of workers in Portuguese companies, confirming its relevance to the level of employment in the country. Besides, micro and small companies in the wholesale trade sector (78.1%) and retail trade (67.5%) are the main responsible for the highest percentage of employed people.
- The highest percentage of employed people in the wholesale were male (68%), while in the retail were women (59%), aged between 25 and 54 years.
- As for the level of qualifications, the sector was characterized, still in 2013, by its workers low education levels, including a significant percentage of workers having a qualification level lower or equal to level 2.
- Analyzing the past 10 years, it seems that employment has remained relatively steady in the trade sector, excepting for a decrease in employment in companies from 2008 on, when the economic and financial crisis started.

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The use of ICT in Trade

- According to data from INE (2013), a large percentage of companies in the sector in question (over 95%), employing 10 or more workers, were connected to the Internet; and the majority of businesses used the Internet to interact with public authorities.
- From those companies, 40.7% were involved in e-commerce that same year, 35.2% of which having made orders via electronic networks, and 16.5% having received the orders using the same channel.
- As for the use of software applications such as CRM and ERP, there was a different reality, since 25% of companies used the first kind of application and 39.7% the second. Besides, large companies were the ones having a higher percentage of users of the mentioned software applications.
- Concerning a presence on the Internet, only 54.3% of the sector companies with 10 or more workers correspond positively to this indicator, reaffirming a larger share of large companies (96%), when compared to smaller ones (49.3%).
- Only 19% of companies in the sector have specialized human resources in ICT, and large companies are the ones having a greater need for workers skilled in this area (74%).

2. Main trends in the sector, in Portugal

In terms of the key trends/changing *drivers*:

- Developments in the trade sector have been influenced by several drivers, among which globalization, demographic changes, the economic crisis and the resulting decline in purchasing power, technological innovations and the use of e-commerce.
- The globalization of markets has led to the setting up of supply and sales global networks, and to the relocation of ICT supported business activities.
- The development of processes of concentration and internationalization is foreseen, both in wholesale and in retail.
- Franchising can be seen as a "vehicle" for the internationalization of some business models, supported by the development of concept and brand.
- Consumers tend to live longer, are more urban and diverse, have a higher level of education and are more informed. Therefore, they, are more demanding, look for products that have integrated services and are increasingly using information and communication technologies, resulting in new consumption patterns, as the multi-channel approach to the market (cross-channel).
- Therefore, there is a higher valuation of the assistance and service quality, as well as of the advising function.

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- A growing use of ICT in all functional areas of business is foreseeable (not only in sales), as well as the individualization of lifestyles and consumption habits.

In terms of employment and levels of qualifications:

- Until 2025, employment will grow, but not reaching its level of the pre-crisis period (2008).
- There´s a foreseen employment growth of 1,8% for wholesale and retail, having the wholesale a higher potential for job creation than the retail sub-sector.
- The trade sector will tend to lose weight in total employment, with a decrease in the "life expectancy" of companies, but it will still continue to contribute strongly for new job opportunities.
- Projections until 2025 suggest a decline in jobs requiring low skills, and a growth in jobs requiring intermediate/medium and high qualifications.
- By 2025, about 33% of the workforce will be highly qualified, representing an increase of 9.1% when compared to 2013.

In terms of employment opportunities:

- About 15% of job opportunities created by 2025 will be directed to professionals dedicated to the areas of services and sales.
- It is estimated that more than half of the job opportunities estimated for the next decade, requiring high qualifications, will occur in four major professional groups, heavily knowledge-intensive: experts in business support functions and activities of business services, especially in finance, administration, commercial, legal, social and cultural affairs, and specialists in information and communication technologies; Health professionals; experts in science and engineering; managers in service activities, including specialized services, hotels, restaurants, trade and other service activities.
- Possible creation of new jobs in small supermarkets and in specialized establishments, like for example: libraries / stationery and clothing.

In terms of skills:

- There is a lack of digital skills, and the need for skilled workers in this area isn´t satisfied. Moreover, the projections point to 15,000 unfilled vacancies in this area, due to the lack of skilled workers in 2020.

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- New and different skills are increasingly required - a mix of technology skills, business and entrepreneurship, a strong customer orientation, foreign languages, negotiating skills and contracts management, project management and the ability to work in multidisciplinary teams.

Main challenges for the sector

- The slowdown/stagnation in the growth of the available income results in a higher selectivity for consumer strategies, and the resulting choice based on the value proposition (price *versus* quality);
- In business, we will watch an effort from the companies´ management to reduce costs (e.g.: downsizing and rationalization of procedures) and to raise sales (e.g.: implementation of more aggressive communication and promotion strategies);
- Automation of the sales operations will occur, as well as the introduction of differentiated business models and a digitalization on operations;
- It will be necessary to make online platforms less complicated, in order to attract new agents/clients to the business;
- Integration of the sales and service areas;
- Logistics in the e-commerce model is different from the so-called “traditional” logistics, as well as the supporting activities to the client, demanding a differentiated organization and management;
- The demand from consumers for increasingly uncomplicated experiences, simple and fast, represents a considerable degree of complexity for retailers, both for understanding consumers themselves, and for developing mechanisms and tools that respond to the evolution of the act of purchase and consumption;
- There will be a need to create differentiated experiences, in order to understand consumers, taking into account their needs and preferences, in all channels, to make experiences, products and services more personal and to anticipate trends and consumption habits;
- Today´s reality is omnical, adjusting the sales channels and points of contact to the consumer, with a consistent and transversal value proposal, allowing access anytime and anywhere, maximizing the customer experience at all touch- points of his journey;
- Operations should be integrated and efficient, allowing a response capacity in omni-channel reality and an integrated approach, from supplier to consumer;
- There is a leveraging of the information power, with the ability to structure and process information, to proactively respond to consumer behaviors and decision-making on business;

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3. The impacts of New Technologies in the sector

Kinds of Impacts:

- Given its relevance in terms of employability, it´s urgent to analyze the factors that currently have consequences on jobs and on job profiles needed for the sector. One of these factors results from the technological change we have witnessed in recent years, which will tend to evolve continuously.
- New technologies have, therefore, an important role in company activities and require employees who have a profile able to improve its performance.
- Jobs are increasingly involved with automation mechanisms and simplifying processes. The development of versatility, teamwork, communication skills and the use of technologies have become important and call for an improvement in education and training[38].
- The impact of evolution, caused by a deep transformation in technology, is visible and is beyond the traditional reference to distance selling and e-commerce as the main form of expression. To this, we have to associate the effect of diversification of the online use in the context of commercial activity.
- In terms of internationalization, only a sufficiently innovative market will be able to cope with competitive European markets, and should deepen the new opportunities offered by the technological factor.
- The very marked ageing of population in Portugal has, also, significant impacts on commerce, since it implies a valuation of proximity and convenience.
- Associated with the growing use of new technologies, as well as the greater complexity of business activity, we have witnessed an increasingly developed logistics activity that will tend to gain autonomy in all business areas, especially in large companies.
- The impact of ICT is also reflected in the functioning of commercial companies back-offices (stock management, billing and provisioning, for example). The use of ICT allows flexibility and immediacy in purchasing processes and management and coordination of supply flows and exchanges, bringing more flexibility to the operating modes
- The impact of technological dimension cuts across various fields of activity. For this reason, the effects it has on the content of jobs are extended to professional areas that, being relevant to trade, are situated in the segment of services providing to companies.
- The proliferation of e-commerce has, thus, increased the importance of customer strategies, since in an online context it becomes extremely easy for the consumer to compare prices, conditions and organizational value propositions.
- New technologies related to virtual products and processes enable companies to launch new products and services, faster and with lower costs and risks.

[38] Source: EXPERT GROUP ON FUTURE SKILLS NEEDS (2010), “Future Skills Needs of the Wholesale and Retail Sector”.

What new jobs

- The technological and innovation breakthrough requires their integration and monitoring as necessary platforms to support the organization and business management. Thus, it is relevant to promote, in the sector, the Web development, the management of online channels for information, dissemination and sales, and optimizing the presence in online channels. It´s also urgent to increase the ability to explore the digital economy, in order to expand markets and supply of available services.
- Online requests/purchases grow increasingly; as such, there are jobs that face different realities, depending on customer needs, which impacts the necessary tools and skills required to some professionals, so that they can respond to new ways of working.
- According to a study from the European Commission on digital competitiveness[39], the quick development of ICTs opens new perspectives for business and the creation of new professions, such as specialist in big data and cloud computing, digital entrepreneurs or managers with expertise in e-business and e-leadership.
- The European Skills Council Commerce adds, in its report which deals with issues related to the impact of new technologies in the sector[40], that "Multichannel" consumers - who may obtain information by several means and at late hours - refer the improvement and construction of new profiles and new jobs (or functions), such as: e-merchandiser; e-commerce front office employee and/or back-office; e-commerce entrepreneurs; technical specialist in e-commerce; e-commerce operator; graphic designer; "Integrator" (integrator); traffic controller; analytical Web systems; CRM manager; project technician and web functions manager; online shop controller; systems manager and e-commerce director.

The main profiles, skills and training needs in ICT

- In Portugal, companies that sell and buy abroad need sound strategies and adequate facilities to monitor the markets they work in, so as to create permanent basis. This requires workers with specific and specialized skills, so that they can manage important import and export activities on a global scale. These professionals need to be able to negotiate with clients from different cultures and to coordinate adequate support services to these activities (logistics, financial operations, security, etc ...)
- The arrival of new technologies in the trade sector has brought severe implications, if we take into account the development of new profiles in the sector. These trends lead to

[39] Source: EUROPEAN UNION (2010), *Europe's Digital Competitiveness Report 2010*, US, Brussels.
[40] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2012) *Impact of change & new technologies on skills & occupations in the sector commerce*, Consulting Europe, Brussels.

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monitoring the integration of these technologies in the development strategies of business activities and in the anticipation of more skills, so that they can be more competitive.

  - Concerning the commercial area, we can highlight the following needed profiles: "buyer", which should have the ability to negotiate and to make the purchase order at the best price, expanding its function to the buying services and to the knowledge of other markets; the sales manager; and the commercial technician.
  - In the area of logistics, we can refer the logistics manager; the shopkeeper; the responsible for deliveries; the maintenance technician and expert.
  - Concerning the supporting functions, we highlight the administrative worker, the financial, the accountant, the internet and Information System (IS) specialist; the marketing technician; the quality and sustainable development technician.

- The European Skills Council Commerce Sector indicates, in its report on employment and qualifications - 2014[41], that a way of responding to new skills needs is to establish a specific qualification that provides the qualification or reconversion of potential employees with skills directly needed by the labour market.

4. The vision from different stakeholders

Taking in consideration the changes resulting from technological evolution, we highlight below some changing *drivers* that the trade sector is subject to, taking into account the main notes provided by the stakeholders:

- The existence of several “places” where you can shop = multichannel;
- Online shopping will continue to grow, and the trend will be that we stop looking at the physical establishment as we know it;
- The existence of online supports brings the companies´ ability to respond closer, regardless of their size;
- The co-existence of online and offline business models.
- Use of ICT in back-office functions; in communication, information and promotion; in customer loyalty strategies and in supply;
- Interaction between ICT and the business designing/planning function;
- Distance-selling supported by the Internet;
- Online and mobile channels in support of marketing functions;
- Communication, sales and after-sales service;

[41] Source: EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2014), *Employment and Skills, Report 2014*, European Comission, Brussels.

- It´s urgent to invest in the integration and monitoring of technological innovations, such as mandatory platforms to support business organization and management; optimization of the presence in online channels; and exploitation of the digital economy, for markets expansion and service offering;
- Given the context of digital economy, the need arises to pay attention on issues related to a legal framework on data protection and privacy on the web, as well as on competition on the web.

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VI – Recommendations

- **The current qualifications have to be improved/updated, in order to respond to the skills needs resulting from the trends identified in this report.**
- **New skills need to be created. The lack of ICT skills in professionals who think business can be critical to their success.**

- Given the employability perspectives in ICT areas, pointed out by several studies – both at national and at European levels – it will be relevant to implement qualifications strategies able to reconvert, in due time, qualified unemployed people from other areas to the digital jobs.

- There is also a need to provide qualifications in the employment segments marked by low qualifications.

- Fast evolution of e-commerce will require an increased investment in technology and talent from the sector, to train human resources with the key skills to potentiate better business performance.

- It´s urgent to define the set of qualifications and the set of skills and training references/standards that will require a reassessment in order to better adjust themselves to the sector's needs.

- Core skills identified:
  - Information management;
  - Having an analytical mind;
  - Learn to learn;
  - The ability to communicate at distance, both orally and in writing, in a foreign language;
  - The ability to build intercultural relations.

- On the other hand, it is essential to review the ICT qualifications references currently in place, assuring the possibility for their restructuring, so that they can be more adjusted to market needs and more easily upgradeable.
- Given the existing gap between the needed and the existing skills, it´s urgent to focus on the improvement of skills in e-commerce, not only for company´s employees, but also for employers (for business owners and managers, attending a training action in digital entrepreneurship would be fundamental).

- Mainstreaming "e-commerce" in the different existing qualifications, as well as the creation of a new offer of Technical Specialist in e-commerce - which could be level 4 or 5 – is considered relevant.

- Concerning the training offer in this area, there is a necessary liaison between the teaching institutions and companies, impacting on the quality of training provided and in the trainees employability, as well as an urgent match between the training offer and the employers´ needs.

- In order to respond to the “ICT skills gap” that presently exists in our country, including the lack of labour-force, it´s essential to discover new publics for ICT and to innovate the training offers. This strategy clearly imposes the innovation of traditionally available offers that are focuses on a certain kind of student, impacting on the adaptation of the education and vocational training institutions. Moreover, training provided in a certain area where innovation occurs fast, should not be outdated.

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This project has been funded with support from the European Commission

IX – Bibliographic References

CEDEFOP (2015) "Portugal skill suplly and demand up to 2025", European Centre for the development and Vocational Training, European Comission.

CEDEFOP (2015) "Skills forecasts Country Portugal", European Centre for the development and Vocational Training, European Comission.

DIGITAL ECONOMY ASSOCIATION (2014), Quarterly Barometer of Electronic Commerce in Portugal 4th Quarter 2014 Earnings Release, ACEPI, Lisbon.

DIONÍSIO, Pedro Gonçalves, Helia, Cardoso, Daisy (2012), Behaviors of Information Search and Purchase Online, Confederation of Commerce and Services of Portugal, Lisbon.

ECONOMY ASSOCIATION DIGITAL / DATA INTERNATIONAL CORPORATION (2013), Digital economy in Portugal 2009-2017, ACEPI / IDC, Lisbon.

ECONOMY ASSOCIATION DIGITAL / DATA INTERNATIONAL CORPORATION (2015), Digital Economy in Portugal 2009-2020, ACEPI, Lisbon.

EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2012) Impact of change & new technologies on skills & occupations in the sector commerce, Consulting Europe, Brussels.

EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2014), Employment and Skills, Report 2014, European Comission, Brussels.

EUROPEAN SECTOR SKILLS COUNCIL COMMERCE (2015), Employment and Skills Report 2014 EuroCommerce, UNI Europa - Commerce Global Union.

EUROPEAN UNION (2010), Europe's Digital Competitiveness Report 2010, US, Brussels.

EXPERT GROUP ON FUTURE SKILLS NEEDS (2010), “Future Skills Needs of the Wholesale and Retail Sector”.

NATIONAL ASSOCIATION OF ENTERPRISES OF INFORMATION TECHNOLOGY AND ELECTRONICS (2014), HR Specific needs for the IT sector - Conversion of unemployed, Anetie, Lisbon.

NATIONAL STATISTICS INSTITUTE (2012), Survey on the Use of Information and Communication Technologies in Companies, INE, Lisbon.

NATIONAL STATISTICS INSTITUTE (2014) "Population projections resident from 2012 to 2060," Statistics Portugal, Lisbon.

NATIONAL STATISTICS INSTITUTE (2014), Survey on the Use of Information and Communication Technologies in Companies, INE, Lisbon.

NATIONAL STATISTICS INSTITUTE (2014), "Trade Statistics", INE, Lisbon.

PORTUGUESE ASSOCIATION FOR THE DEVELOPMENT OF COMMUNICATION (2015), "Business Trends and the Role of Information and Communication Technologies", APDC, Lisbon.

QUATERNAIRE (2015), Strategic Program of training for trade and services (2014-2020), CCP, Lisbon.

VALENTE, Ana Claudia (2015), Mapping the supply of education and training in Information Technology, Communications and Electronics in Portugal, Portuguese Coalition for Digital Employability, Calouste Gulbenkian / Foundation for Science and Technology, Lisbon.

VALENTE, Ana Claudia (2014), New labour markets and new professions - prospective study Consortium Increased Employability, Student Forum, Lisbon.

Consulted sites:

www.ine.pt
www.pordata.pt
http://observador.pt/especiais/economia-digital-digitalizacao-das-empresas-nao-opcao-inevitabilidade/
http://www.bcsdportugal.org/