Investing in the Future of Jobs and Skills

Scenarios, implications and options in anticipation of future skills and knowledge needs

Executive Summary

Distribution and Trade

Eurofound

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Overview

This executive summary highlights the main results of the final report *Investing in the Future of Jobs and Skills. Scenarios, implications and options in anticipation of future skills and knowledge needs in the Distribution and Trade Sector*. Apart from analysing sector trends and developments, the study explores four plausible and distinctly different futures and their implications for jobs, skills and knowledge in the year 2020. The study is both forward- and backward-looking. It further presents a variety of options and recommendations to address future skills and knowledge needs, aimed at firms, sector organisations, education and training institutes, policy-makers and other stakeholders. This study appears in a series of 16 sector studies.

The study should be placed against the background of the EU's renewed Lisbon Strategy for Growth and Jobs and the recently launched New Skills for New Jobs initiative. Investing in people and modernising labour markets is one of the four priority areas of the Lisbon Strategy. The New Skills for New Jobs initiative presents a very first assessment of the EU's future skills and jobs requirements up to 2020. The initiative aims to help ensure a better match between the supply of skills and labour market demand and to improve the Member States' capacity to assess and anticipate the skills needs of its citizens and companies.

The distribution and trade sector – main characterisation

The distribution and trade sector, also referred to as commerce, consists of two main sub-sectors: retail and wholesale trade. Traditionally, wholesale trade includes the selling of goods to retailers or to industrial, commercial, institutional, and professional users, whereas retail trade is about selling goods to the consumer without transformation. However, the traditional value chain has changed considerably over the past 20 years. Retail companies have increasingly taken over the wholesale function and nowadays negotiate directly with producers and have introduced retailer brands. Led by a continuous search for scale economies and efficiency, vertical integration, disintermediation (elimination of intermediaries) and reintermediation (provision of extra services by aggregators and infomediaries) have dramatically changed the sector. With the Internet, e-commerce and ICTs in general as major engines, developments could go even further, possibly changing the role of retailers altogether, with producers directly selling to consumers.

The majority of consumer goods in Europe are imported directly or indirectly from abroad, with international procurement being driven by cost advantages and local market factors (local tastes, etc.). The sector spends relatively little on R&D, but is an important purchaser of high-tech inputs developed in other sectors. The main technological change in commerce has come from ICTs, with the sector being one of the largest investors in ICT equipment. ICTs have drastically altered business operations, by providing tools to automate business processes, to analyse performance, and to manage relationships with customers and suppliers. ICTs contributed substantially to advanced supply chain management lowering inventory in warehouses (and thus lowering costs), while decreasing out-of-stock and improve pricing strategies. ICTs have also driven significant trading advantages through smarter customer data as well as the development of e-retailing and home shopping and lean retailing.

Main economic and employment trends

Value added. The commerce sector accounts for 1,352 bn euro of value added, or 11.8% of EU GDP in 2006, with almost 43% of value added being realised in wholesale trade, 40% in retail trade and 17% wholesale and retail trade of motor vehicles and motorcycles (excluded from this study). Almost 93% of value added was realised in the EU15. Overall, annual value added growth exceeded overall GDP growth (3.0% against 2.3%), especially in the new Member States (5.4%) during the period 1995-2006. Overall, annual value added growth exceeded overall GDP growth (3.0% against 2.3%), especially in the new Member States (NMS) (5.4%) in 1995-2006. External trade (not counting internal EU trade) amounted to € 37.5 billion in exports and € 46.2 billion in imports; 3%, respectively 4% of value added. Imports grew faster than exports over the period 1995-2006, yet not in the new Member States.

Employment. The distribution and trade sector accounted for 6.2 million enterprises, employing 33.3 million people or 15.3% of overall EU employment. 18.5 million of these jobs were in retail, 10.4 million in wholesale. Almost 81% of the jobs in the distribution and trade sector were located in the EU-15. Employment in wholesale trade in the EU grew with 2.1% annually during the period 2000-2006, and more than double (4.9%) in the new Member States. Similar growth figures apply to retail, with an overall increase of 2.3% annually and 3.3% in the new Member States.

Employment trends, 1995-2006

Wholesale trade	Employment level 2006 (times 1,000)	Annual growth (%) 95-06	Share in EU sector employment (%) 2006	Change in share in EU sector employment (%) 95-06
EU	10 372	2.1	100	0
EU 15	8 180	1.4	79	-3
NMS	2 192	4.9	21	3
Retail trade				
EU	18 477	2.3	100	0
EU 15	15 017	2.1	81	0
NMS	3 460	3.3	19	0

Source: Eurostat/TNO.

The majority of firms in distribution and trade (99.3%) are small firms employing less than 50 employees. 0.6% are medium-sized firms and only 0.1% are large firms with more than 250 employees. This pattern especially applies to Southern Europe. In the Northern EU-15 Member States firms are bigger on average, with 10% to 16% of firms having more than 10 employees (mainly in the category 10 and 20 employees). In countries with high growth rates, the share of small firms is decreasing, while in countries with low employment growth, the share of small firms is rising somewhat.

Employment by gender, age and education: distribution and trade, 2000-2006

	EU Level	Change	EU 15 Level	Change	NMS Level	Change
Women	49	1	47	1	54	0
Age < 40	56	-2	54	-3	61	0
Age 40 – 50	24	1	24	2	23	-4
Age > 50	20	1	21	1	16	4
Low education	28	-6	33	-5	6	-3
Mid education	57	4	52	2	79	2
High education	15	2	15	2	15	1
Definition	Level % 2006	Total change %	Level % 2006	Total change %	Level % 2006	Total change %

Source: Alphametrics/TNO based on Eurostat Labour Force Survey

Contrary to wholesale, the share of women employed in retail (62%) is relatively high. The relative distribution of occupations is rather stable over time, with managers and service workers in the EU15 showing the largest change in shares (3 percentage points). Employment is dominated by medium educated employees; this is true for the EU-15, but especially for the new Member States. Strong differences apply to the category of low educated workers, with 33% in the EU-15 and only 6% in the new Member States, with substantial decreases in both EU-15 and new Member States over the last 7 years. More than half of all employees is younger than 40 years. Ageing, however, might lead to problems in the near future, when increasing shares of very experienced workers will leave the sector.

Most jobs in distribution and trade are in the categories service workers, clerks and SME managers. In new Member States the share of service workers even reached 47%. Compared with the new Member States, the EU-15 has more managers, clerks, business professionals and elementary occupations.

Employment trends by job function: shares (2006) and changes in shares (in%), 2000-2006

Distribution and trade	Shares, 2006			Changes in shares, 2000-2006		
	EU15	NMS	EU	EU15	NMS	EU
Managers of SMEs	12	7	11	3	1	2
Other specialist managers	5	4	5	-1	-2	-1
Health professionals	2	2	2	1	1	1
Business professionals	9	7	8	1	2	1
Other professionals and technicians	7	8	7	2	-1	1
Clerks	13	9	13	-1	1	-1
Service workers	30	47	33	-3	1	-2
Mechanics and fitters	5	5	5	-1	1	0
Craft and related trade workers	6	4	6	-1	-2	-1
Motor vehicle drivers /mobile plant operators	3	4	3	0	1	0
Other operators	1	1	1	0	-1	0
Elementary occupations	7	4	6	1	-1	1

Source: Eurostat Labour Force Survey/TNO

SWOT analysis

SWOT analysis Retail

Strengths	**Weaknesses**
• Efficiency • Economies of scale - driven by concentration and search for growth • Bargaining power towards suppliers • Retailer brands • Customer loyalty through loyalty cards and own brands • Focus on core activities, outsourcing of logistics, inventory management • Advanced application and use of ICT tools • Flexibility in workforce and employment is standard practice	• Many small companies, lacking resources and capacity • Low margins • Despite bargaining power and economies of scale no improvement in economic / financial performance in relation to suppliers • Gender inequality: many female employees, earning less than male employees • Low pay – low skills jobs • Extreme labour flexibility: less motivated workers, poor service quality, unsatisfied customers • Gap in labour productivity between USA and Europe

Opportunities	Threats
• More collaboration to increase economies of scale in sourcing, but also in marketing and sales • Retailer brands • Cooperative brand development with suppliers • Co-branding • Experience-shopping • Competition based on services and customer relations: improved profit margin • Advanced customer relation management • Full mass customisation • Including productivity of consumers • E-commerce: multi-channel strategies and sophisticated websites • Location-based marketing • RFID technology: optimise supply chain management, self check-out, reduce theft, decrease out–of-stock • Green retailing • Lifestyle changes • Ageing society: different shopping demands • Liberalisation of trade regulation and trade barriers, less restrictions on FDI • Emerging markets: new markets, expansion • Increasing income per capita • Focus on service: different skills of workers, improved image of sector • Focus on lean retailing: increasing productivity, lower costs, better service	• Fierce international competition, also expected from firms from India and China coming to EU • ‘Unfair’ practices of High Volume Retailers • Focus on price competition: race to the bottom • Driven by e-commerce disintermediation of retailers • Brand-related experiences created by manufacturers: integrating retail function • E-commerce: obstacles related to trust, efficient and reliable payment systems and delivery of goods, average order sizes • E-commerce: consumers becoming retailers (auctions) • E-commerce: consumers better informed, reduced value of and need for retail employees • Regulatory environment: restrictions on location, labour regulation, shop opening hours restrictive and not harmonised in EU • Mature domestic markets • Emerging markets: weak infrastructure, restrictions on FDI, location; political problems, economic imbalances, limited supply of qualified employees • Cultural differences and local tastes can be barriers in global expansion • Ageing of labour force: in retail large share of young workers, low pay • High prices of natural resources in food • High oil prices

Main drivers of change

Distribution and trade is a very open and internationalised sector, which makes it rather sensitive to developments and changes in economy and society. Compared to other sectors, a great number of drivers do impact the sector.

Ageing drives change because of different consumer needs (demand), but also affects the structure of the labour force. Changes in *income* determine demand, with sharper differences between high and low incomes possibly resulting in more distinct market segments. Competition is increasingly taking place *globally* and more markets are opening up thus creating market opportunities. Nevertheless, doing business outside Europe does not necessarily result in more employment in Europe. ICT tools enable retailers to build up closer customer relationships and *mass customisation*. This will lead to, through 24/7 availability of services, a more flexible workforce and service skills. *Lifestyle changes*, such as healthier living and environmentally friendly consumption will affect demand and skills requirements. Lifestyle changes also affect the demands by employees, e.g. in finding a satisfying work-life balance. Application of *ICT tools* and *e-commerce* may result in job losses, because of increased efficiency and labour productivity, but also create jobs due to enhanced growth and more value added services influencing skills requirements. As logistics and transport are very important for the commerce sector, *availability and price of oil and energy* are a main but rather uncertain driver. *Liberalisation* both internationally and at the European level will help the sector to expand its business and to grow, which will affect employment in the sector. Most important *regulation* is labour regulation, which is mostly nationally defined with minimum requirements set by the EU. Regulation on opening hours is relevant as well as environmental regulation (road pricing, costs and urban logistics). Regulation on security and safety in relation to food requires substantial investments in supply chain management tools, supply chain infrastructure, and in skills. Similar for environmental regulation, substantial impacts on volume and composition of employment are not expected, however.

	Main drivers of change											Source: ©TNO-SEOR-ZSI
Category	Driver	Is this driver relevant for the sector? Y / N	How relevant is this driver for the sector? Scale 0-10	How uncertain is this driver for the sector? Scale 0-10	Are substantial impacts expected on the volume of employment? Y / N	Are substantial impacts expected on employment composition? Y / N	Are substantial impacts expected on new skills? Y / N	Short, medium or long run impact? S	M	L	Are substantial differences expected between countries? Y / N	Are substantial differences expected between sectors? Y / N
Demographics	Ageing - Adapt to market demands of ageing and more diversified society	Y	8	0	N	Y	Y			X	N	N
	Ageing – declining labour force	Y	8	3	Y	Y	N		X	X	Y	N
Economic	Income per capita and household	Y	8	7	Y	N	N	X	X	X	Y	N
	Income distribution	Y	8	7	Y	N	Y	X	X	X	Y	N
	Increasing global competition	Y	9	2	Y	N	Y	X	X	X	N	N
	Emerging economies driving global growth (new market demand,BRICs)	Y	9	5	N	N	Y	X	X	X	N	N
Cultural values	Increasing market segmentation (tailor made;mass customization)	Y	10	0	Y	Y	Y	X	X	X	N	N
	Lifestyle changes	Y	10	2	Y	N	Y	X	X	X	Y	N
	Increasing demand for environmentally friendly products	Y	10	4	Y	N	Y	X	X	X	Y	N
	Opening hours regulation	Y	8	5	Y	N	N	X	X	X	Y	Y
Technology, R&D and innovation	IT progress affecting organizational structures & new business models	Y	9	0	Y	Y	Y	X	X	X	N	N
	Internet changing production and consumption patterns	Y	9	0	Y	Y	Y	X	X	X	N	N
	New/additional value-added services	Y	8	3	Y	Y	Y	X	X	X	N	Y
Natural resources	Availability (and price developments) of oil and energy	Y	8	8	Y	N	N	X	X	X	N	Y
	Availability & price of other natural resources	Y	8	8	Y	N	N	X	X	X	N	Y
	Labour market regulation	Y	8	7	Y	Y	N	X	X	X	Y	Y
	Security and safety regulation	Y	8	2	N	N	Y	X	X	X	Y	N

Scenarios and implications for employment

Four future scenarios have been constructed and explored: 1) *Shop Around the Clock,* 2) *Shopping Malls Rule,* 3) *V-Stores,* and 4), *My Speciality Store* (see also figure). The scenarios depict plausible and credible futures for the commerce sector in Europe by 2020.

Construction, hypotheses and use of the scenarios

In constructing the scenarios, a clear distinction has been made between exogenous and endogenous drivers, the main difference being the scope and ability for direct influence. Exogenous drivers are drivers that form a "given" for the sector without much room for influence for and by individual actors. Endogenous drivers are drivers that can be influenced at the sector level, for instance by national or European policy-making, or collective effort from within the sector. In constructing the scenarios, those drivers have been selected that scored high on the criteria relevance, impact and uncertainty.

Four future scenarios for the distribution and trade sector and main underlying drivers

Endogenous, sector-specific drivers:
- Regulation on location
- Regulation on shop opening hours
- Labour market regulation
- Health & Safety regulation

- Flexible
- Harmonised
- Open and multilateral

Exogenous drivers:				
- Technology: ICT tools and Internet	Fast changes and full adoption	**Shop Around the Clock (Scenario I)**	**Shopping Malls Rule (Scenario II)**	Slower changes and hesitant adoption
- Market segmentation	Strong segmentation, and mass customisation			Strong market segmentation focus on segments
- Income	Growth in income Stronger distribution			Growth in income More equal distribution
- Lifestyle	Ego-driven consumption, prosperity driven			Experiencing life, attention for quality of life, well-being driven
- Global competition	Strong global competition	**V-stores (Scenario III)**	**My Specialty Store (Scenario IV)**	Competition within regions, more than between or globally
- Emerging economies	Strong driver for growth, also for European companies			Strong growth in emerging countries, served by local companies
- Natural resources	Scarce and expensive			Scarce and expensive

- Strict
- Not harmonised
- Restrictive for companies
- Labour force protection
- Environmental concerns

Source:
TNO-SEOR-ZSI

The scenarios apply to both retail and wholesale trade. The sub-sectors differ in their future development paths, as they face very different dynamics in terms of market structure and developments. The way the scenarios have been constructed does not preclude such differentiation. Note that demographics – ageing (less young, more retirees) – and its effects on labour supply have not explicitly been identified in selecting the drivers, as demographics in the time frame of 2009-2020 are relatively certain (i.e. predictable). They do play a role in all scenarios, however. Education and training which can also be perceived as a set of endogenous factors have been excluded from the scenarios. They are together with a number of other strategies and/or policies discussed as solutions in response to the scenario outcomes.

Scenario I: ***Shop Around the Clock***

Consumers are in the lead, know what they want and consume "anywhere (in virtual and in physical stores), anyplace, anytime". Technological progress enables a one-on-one relationship with the consumer, personalized marketing and mass customization, which requires full flexibility: flexible labour force, opening hours, (retail) locations, etc. Strong market segmentation is supported by technological solutions enabling full multi-channel sales and marketing strategy, fine-tuned logistics and optimised supply chain management. Consumers are very price-sensitive to regular products and services, but also spend money on exclusive and tailor-made products. Governments acknowledge the need for flexibility and design flexible and harmonised regulation accordingly. Global competition is fierce, yet emerging economies offer ample growth opportunities. Environmental protection protection of employees is limited (flexible contracts). Natural resources are scarce and expensive, but do not limit growth as demand is strong.

Scenario II: ***Shopping Malls Rule***

Technological change happens, but slower, with consumers being hesitant to adopt all technological possibilities. Consumers use the Internet for specific products only (e.g. travelling, books and music), but continue to shop in physical stores, looking for a full shopping experience: fun shopping in combination with other entertainment experiences (e.g. going to the movies, sports, games and casino). Large shopping malls address this need, delivering more than just floor space. The establishment of large shopping areas is not hindered by environmental or other regulation. Regulation on location, labour and opening hours is loose and flexible and shopping malls serve their clients 24/7. Regulation with regard to the position of employees is weak. Although there is global competition, retailers increasingly serve local and regional markets, making it easier to address local customer needs. Companies that not already are in business in emerging markets refrain from setting up businesses overseas as competition increasingly comes from local companies. Natural resources are scarce and expensive, and strengthen the local and regional focus.

Scenario III: ***V-stores***

Restrictive regulation on location and labour and technological change promote the rapid growth of e-business and virtual stores 24/7, but delivery is restricted to certain hours. Nevertheless, almost everything is purchased via Internet, not just books, music and travelling. E-businesses serve worldwide, and increasingly supply emerging markets. Although this scenario results in more transport around the globe, expensive and scarce natural resources stimulate new types of delivery (e.g. consumers collecting deliveries at local distribution centres). Physical expansion of retail outlets is limited, which is beneficial to the environment (reduced "greenfield" investment), but may also lead to deterioration city centre shopping area quality. Virtual stores offer tailor-made goods and services and fast technological development *and* adoption enable one-on-one relationships with customers, supporting full mass customisation. V-stores could also result in disintermediation of retail and wholesale, with manufacturers establishing direct relationships with consumers.

Scenario IV: *My Speciality Store*

Technological developments are slow and people are not really interested in adopting high-tech shopping solutions. E-business remains a niche-business, mainly used for specific products, e.g. music, books and travelling. Consumers like to shop, but not necessarily in large shopping malls. Large shopping areas open 24/7 are restricted by regulation on location, labour and shopping hours. Consumers favour proximity buying, and look for smaller, specialised shops. This results in differentiated, high-quality shopping centres in cities, but also in local neighbourhoods, and shopping close to local producers (e.g. farm shops). Quality of life and sustainability are important values to consumers. Retailers have a one-on one relationship with consumers, but customer relation management is based on physical contact and small networks rather than automated customer information systems. Companies favour proximity purchasing, focusing on the local and regional markets and suppliers, strenghtened by more expensive and scarce natural resources. Strict regulation on labour can help to improve the position of personnel working in retail, although smaller firms have less capacity to optimise working conditions.

Implications of scenarios for jobs, skills and knowledge by job function

Implications of scenarios: job volume changes by function, 2009-2020

	Shop Around the Clock	Shopping Malls Rule	V-stores	My Specialty Store
Managers of SMEs	+	0/-	0	+
Specialist managers	+	0	0/+	0
Health professionals	0	0	0/-	0/+
Accounting & finance professionals	-	0	-	0
Sales & Marketing professionals	+	0/+	+	0/+
Supply chain professionals	+	0	-	0
Administrative support wokers	0/-	-	--	+
Service workers	0	+	-	+
Craft workers	0/-	0/-	-	+
Motor vehicle drivers	0/+	0	0/+	0
Machine operators	0	-	-	0
Logistics workers	-	0	-	0
Overall job change	***0/+***	***0***	***-***	***0/+***

Source: TNO-SEOR-ZSI. Note: - = decrease, + = increase, 0 = maintain

All scenarios lead to substantial change in the structure of employment and skills requirements, even though the overall volume change in most scenarios will be stable or lightly positive. Only the V-stores scenario will lead to an overall decline in employment (see table). To give an impression of the underlying changes at job function level, we zoom in on the example of the *Shop Around the Clock* scenario. As the focus is on mass customisation and one-on-one customer relation management, more sales & marketing managers and professionals are needed, and likewise SME managers. Similarly, more global business requires more supply chain managers and professionals. Yet the number of accounting and finance professionals decreases, as their work will increasingly be computerised and replaced by technological solutions (e.g. RFID). Technology leads also to a slight decline of the number of administrative support staff, with the number of service workers remaining stable, however. Although more stores require more shop sales workers and more service workers (e-business), adoption of e-business tools, in-store sales and service technology (e.g. automatic scanning of goods, displays on shopping trolleys giving information about goods and discounts) requires less service workers. The 24/7 and global sales developments result in more transport and freight, requiring more drivers. Technological change lead to efficiency improvements in freight handling and less logistics workers. The number of craft workers decreases little, because of less need for repair and craft services, yet with likely to replace goods sooner than they do now.

Future skills and knowledge needs by job function

For all job functions future skill needs have been identified based on six clusters of similar and related skills (see box below). Across all job functions soft skills will become increasingly important, especially so for high skilled professional job functions. The general trend of up-skilling across job functions is bound to continue in the coming years. Due to the changing nature of jobs, predefined technical knowledge capabilities will become somewhat less important while skills to adapt and learn new competences and life-long learning will be put at a premium. Certain knowledge – notably e-skills – will become more important. Emerging competences of higher skilled jobs mostly refer to *how* to learn, communicate, interact and adapt to changing environments in addition to a high quality education. Emerging competences in medium-educated job functions that mostly execute defined tasks and processes refer mostly to specific knowledge sets that can be taught through learning.

Overview of skills and knowledge needs identified for each job function and scenario
Knowledge ('hard skills')
• Legislative / regulatory knowledge (environmental / safety / labour / contracting); Language*; e-skills; Marketing skills; Technical knowledge; Product knowledge; Product development
Social Skills • Team working skills; Social perceptiveness (listening / understanding); Communication; Networking; Language*; Intercultural
Problem-solving Skills • Analytical skills; Interdisciplinary; Initiative, Multi-skilling; Creativity
Self-management Skills • Planning; Stress and time management; Flexibility; Multi-tasking
Management skills • Strategic & visionary; Coaching and team building; Change management; Project management; Process optimizing; Quality management; People skills crucial for collegial management style
Entrepreneurial skills • Supplier and customer relationship / understanding; Business understanding / development; Trend setting / trend spotting
Source: TNO-SEOR-ZSI

We illustrate the key emerging skills and knowledge needs for three of the most important job functions in terms of volume, including are service workers (with currently a 33% share of total employed in the sector), managers of SMEs and sales & marketing.[1]

Managers – Entrepreneurial skills are essential in all scenarios in order to maintain and expand business. These skills are particular relevant in the Shop Around the Clock and the My Specialty Store scenarios. Managers have to be able to better understand the customers' needs and to build up strong relationships with customers. Success is defined by how well they are able to spot trends and fully exploit customer relations. Creativity and marketing skills are required in all scenarios; in scenarios I to III to expand business and exploit favourable market opportunities; in Shopping Malls Rule to maintain business and find strategies to survive. In My Specialty Store demand for high quality and sustainable products requires more social perceptiveness and excellent quality management. Taking initiative and developing new business to enhance sustainable business strategies is important. Language and intercultural skills are especially important in Shop Around the Clock and V-stores.

Sales and marketing professionals - In Shop Around the Clock and V-stores more sales and marketing specialists are needed because of the increasing importance of one-on-one customer relationships and mass customisation. Shop Around the Clock asks for flexibility from all employees, also from sales and marketing professionals. In Shopping Malls Rule, the need for sales and marketing professionals will be less urgent because of slower economic growth and less focus on market segmentation. However, they are still needed to keep customers coming and to develop business and marketing strategies together with companies active in entertainment. In the My Specialty Store scenario, marketing and sales professionals need to develop social perceptiveness and focus on understanding the customers' needs for sustainable and premium quality products and services.

Service workers - Service workers are key personnel in retail, which is also reflected in the number of emerging skills and competences required. Understanding customers and good customer relation management skills are needed in all scenarios, as well as good sales and communication skills. The sales staff in physical stores need to have an even better developed social perceptiveness and be creative in approaching and convincing customers. Taking initiative is important in attracting customers and to serve them once they are in. The flow of customers can have high peaks, asking for stress and time management skills. The international business environment with globalised supply chains in the Shop Around the Clock and V-stores scenarios asks for good language and intercultural skills. The latter are also important in the other two scenarios, as clients increasingly have a multicultural background. In My Specialty Store, service workers need to work on their analytical skills to adequately address customer demands.

[1] For a summary of expected changes in skills and knowledge needs for these and other job categories, see the tables at the end of this summary. More extensive and detailed accounts on future skills and knowledge needs can be found in the main report, with further differentiations made by scenario.

Main strategic choices to meet skill and knowledge needs

In order to meet future skills and knowledge needs, apt and timely solutions – referred to here as strategic choices - are required (see table below). Strategic choices refer and relate to the medium- and longer term, even though emerging skills and knowledge needs in practice may also apply to the now and tomorrow. Essential in seeking appropriate solutions is to keep this longer time perspective in mind. Rather than focusing on one single solution, a set of linked strategic choices will in most cases be the best strategy to follow. Prioritising both in time (what first, where to follow up) and in allocation of resources (including budgetary focus) followed by further fine-tuning is a clear necessity to guarantee that skills needs are targeted and solved. Skill needs can be identified at various levels, ranging from assessments at the national or even European sector level to more precise assessments at the regional and company level. Increasingly the identification of skills and knowledge needs but also the search for adequate solutions will have to become an integral part of an overall longer-term business strategy, also for SMEs. Some solutions will be found within the company itself, e.g. through reorganising functions within or between plants, by offering (re)training trajectories or by active global sourcing of personnel. For SMEs and especially for micro-enterprises such longer-term, more strategic human resource management often will be more difficult to organise and operationalise.

In order to address the identified future skills and knowledge needs in an encompassing and timely manner, appropriate joint action is needed by all stakeholders, including the industry (firms, sector organisations and social partners), training and education institutes, intermediary organisations and, last but not least, government at all levels (EU, national, regional and local). Collaboration is needed in order to agree on and implement a package of feasible solutions. Timely, targeted and reliable information to make decisions – i.e. adequate monitoring and analysis - is an essential prerequisite.

Example. Strategic Options Decision Tool -- job function: Managers of SMEs		
1. What is the maximum volume effect? 2. What is the maximum change in skills? 3. Do SMEs play a large role? 4. Is the sector national/EU/global? 5. Is the workforce old? 6. Is the workforce low educated?	Increase 19 Yes National/ Yes[2] No[3]	
Option	**Is this option viable?**	**Actors**
A. Recruiting workers from other sectors	Yes, for larger SMEs in the growth scenarios.	C
B. Recruiting workers from other Member States	Less likely for local SMEs.	C
C. Recruiting workers from Non-member States	Less likely for local SMEs.	C, G
D. Recruiting unemployed with or without re-training	Yes, for larger SMEs in scenarios where numbers expected to increase.	C, E, I, G
E. Recruiting young people from the education system	Yes, for larger SMEs in scenarios where numbers are expected to stay stable or increase.	C, G
F. Training and re-training employed workers	Yes, for all managers an important option.	C, E, S, I
G. Changing work organisation	Yes, for larger SMEs e.g. teamwork to combine several skills.	C
H. Outsourcing and offshoring	Yes, for larger SMEs outsourcing certain management functions to freelancer is viable in all scenarios.	C
I. Changing vocational education	Yes, stronger integration of practice cases and support of especially bachelor students in finding placements.	E, C, I, G
J. Designing and offering new courses	Yes, in the emergent skills, and for transferring business and for migrant business.	E, S, I, C, G
K. Providing information about emerging skills	Yes, in particular for Micro businesses.	E, S, I, C
L. Improve the image of the sector	Yes, necessary for young high educated managers in their first job	S, I, E
M. Stronger cooperation between stakeholders	Yes, in particular to develop new courses and to exploit the innovation potential of the sector.	E, S, C, I, G, U

Notes: 1. C (company), S (sector organisations and chambers of commerce), E (education & training), G (governments and regulators), I (intermediary organisation, public or private), U (trade unions).

[2] 35% older than 50 years and 31% aged between 40 and 49 years. While ageing of (SME) managers is at stake, age per se is not a barrier for employability or high productivity. This is particularly true for management functions. The participation rate of older workers in further training is generally low.
[3] Statistics show that 33% of managers of SMEs are low educated, 50% medium educated.

Conclusions

Implications, conclusions and recommendations have been made at two distinct levels: the individual job function (micro) level focusing on options by function and those, more generally, aimed at sectoral stakeholders (including education and training) and policy-makers (meso-level). The former are summarised in the table below . At the meso-level a further distinction has been made between education and training and 'other' main conclusions and recommendations.

Conclusions and recommendations on education and training

1) Adapt and modernise vocational education and training (VET) and general education systems, but do this nationally rather than at the EU level

2) Collaborate with all relevant stakeholders and intensify co-operation in education and training

3) Preparing for re-training, up-skilling and multi-skilling

4) Enhance flexibility and modularisation

5) Development of e-learning and blended learning, European wide recognition of skills

6) Joint Training Networks to foster apprenticeships in the sector

7) Special training offers for SMEs (managers and staff)

8) Addressing the demand of businesses run by migrants

9) Foster sector specific skills at an early stage.

Main other conclusions and recommendations

1) Improve collaboration between all stakeholders

2) Improve the image of the sector – among the young, the high-educated and especially women

3) Improve career guidance

4) Improve diversity within the sector

5) Organise European wide recognition of skills

6) Invest strongly in human capital and lifelong learning.

Summary of changes in job volume, skills changes, main strategic choices and main players in anticipatory action by scenario

		Shop around the Clock	Shopping Malls Rule	V-stores	My Specialty Store
Managers of SMEs	1. Employment volume change	+	0/-	0	+
	2. Skills changes counted	19	8	17	19
	3. Emerging skills needs	Entrepreneurship, Management skills, Self management, Social skills, e-skills	Entrepreneurship, Management skills, Social skills	Entrepreneurship, Management skills, Social skills, e-skills	Entrepreneurship, Management skills, Social skills, Problem solving skills, Self management, Hard skills
	4. Most important solutions	Training / retraining; Recruiting; Changing vocational education; New courses; information; Improving image; Cooperation	Training / retraining; Recruiting; Changing vocational education; Providing information; Improving image; Cooperation	Training / retraining; Recruiting; Changing vocational education; New courses; Information; Improving image; Cooperation	Training / retraining; Recruiting; Changing vocational education; Information; Improving image; Cooperation
	5. Most important actors	C, E, G, I, S	C, E, G, I, S	C, E, G, I, S	C, E, G, I, S
Specialist managers	1. Employment volume change	+	0	0/+	0
	2. Skills changes counted	17	8	16	19
	3. Emerging skills needs	Entrepreneurship, Management skills, Social skills, Hard skills	Entrepreneurship, Management skills, Social skills	Entrepreneurship, Management skills, Social skills, Hard skills	Entrepreneurship, Management, Problem solving, Social, Hard Skills
	4. Most important solutions	Training / retraining; Recruiting; Changing vocational education; New courses; Information; Improving image; Cooperation	Training / retraining; Recruiting; Changing vocational education; New courses; Information; Improving image; Cooperation	Training / retraining; Recruiting; Changing vocational education; Changing work organisation; New courses; Information; Improving image;Cooperation	Training and retraining; Recruiting; New courses; Information; Improving image; Cooperation
	5. Most important actors	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G
Health professionals	1. Employment volume change	0	0	0/-	0/+
	2. Skills changes counted	9	4	8	7
	3. Emerging skills needs	Hard skills, Management skills, Social skills	Hard skills, Management skills	Hard skills, Management skills, Social skills	Hard skills, Management skills, Entrepreneurship, Social skills
	4. Most important solutions	Training / retraining; New courses; Information; Cooperation	Training / retraining; Information; Cooperation	Training / retraining; Outsourcing / offshoring; New courses; Information; Cooperation	Recruiting; Training / retraining; Information; Cooperation
	5. Most important actors	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G
Accounting & Finance	1. Employment volume change	-	0	-	0
	2. Skills changes counted	4	4	4	4
	3. Emerging skills needs	Hard skills, Problem solving skills, Self management	Hard skills, Problem solving, Self management	Hard skills, Problem solving skills, Self management	Hard skills, Problem solving skills, Self management
	4. Most important solutions	Training / retraining; Changing work organisation; Outsourcing and offshoring; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; New courses; Information; Cooperation	Training / retraining; Changing work organisation; Outsourcing / offshoring; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; New courses; Information; Cooperation
	5. Most important actors	C, E, S	C, E, I, S, G	C, E, S	C, E, S

		Shop around the Clock	Shopping Malls Rule	V-stores	My Specialty Store
Sales & marketing	1. Employment volume change	+	0/+	+	0/+
	2. Skills changes counted	14	10	13	11
	3. Emerging skills needs	Entrepreneurship, Management skills, Social skills	Entrepreneurship, Management skills	Entrepreneurship, Management skills, Social skills	Entrepreneurship, Management skills, Social skills
	4. Most important solutions	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation
	5. Most important actors	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G	C, E, S, I, G
Supply chain management	1. Employment volume change	+	0	-	0
	2. Skills changes counted	9	8	8	6
	3. Emerging skills needs	Hard skills, Social Skills	Hard skills, Social skills	Hard skills, Social skills	Hard skills, Social skills
	4. Most important solutions	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Vocational education; New courses; Information; Cooperation	Recruiting; Training / retraining; Outsourcing; Changing vocational education; New courses; Information; Cooperation	Outsourcing / offshoring; Changing vocational education; New courses; Information; Cooperation	Recruiting; Training / retraining; Work organisation; Outsourcing; Changing vocational education; New courses; Information; Cooperation
	5. Most important actors	C, E, I, S, G	C, E, I, S, G	C, E, I, S, G	C, E, I, S, G
Administrative support staff	1. Employment volume change	0/-	-	--	+
	2. Skills changes counted	10	8	9	8
	3. Emerging skills needs	e-skills, Self management, Social skills	Hard skills, Self management, Social skills	Hard skills, Self management, Social skills	Hard skills, Self management, Social skills
	4. Most important solutions	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training/ retraining; Work organisation; Changing vocational education; New courses; Information; Improving image; Cooperation
	5. Most important actors	C, E, S, I, G, U	C, E, S, I, G, U	C, E, S, I, G, U	C, E, S, I, G, U
Service workers	1. Employment volume change	0	+	-	+
	2. Skills changes counted	14	12	8	14
	3. Emerging skills needs	Entrepreneurship, Social skills, Self management, Problem solving, Hard skills	Entrepreneurship, Social skills, Problem solving, Hard skills	Entrepreneurship, Social skills, Hard skills	Entrepreneurship, Social skills, Problem solving skills, Hard skills
	4. Most important solutions	Recruiting; Training / retraining; Work organisation; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Work organisation; Outsouring / offshoring; Changing vocational education; New courses; Improving image; Cooperation, Information	Recruiting; Training / retraining; Changing vocational education; New courses; Information; Improving image; Cooperation
	5. Most important actors	C, E, S, I, G, U	C, E, S, I, G, U	C, E, S, I, G, U	C, E, S, I, G, U

		Shop around the Clock	Shopping Malls Rule	V-stores	My Specialty Store
Craft workers	1. Employment volume change	0/-	0/-	-	+
	2. Skills changes counted	13	5	11	10
	3. Emerging skills needs	Hard skills, Problem solving skills, Self management, Management skills	Hard skills, Problem solving skills, Management skills	Hard skills, Problem solving skills, Self management, Management	Hard skills, Problem solving skills, Self management, Management skills
	4. Most important solutions	Recruiting; Training / retraining; Changing work organisation; Changing vocational education; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; Changing vocational education; New courses; Information; Cooperation	Recruiting; Training / retraining;; ditto vocational education; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; Changing vocational education; New courses; Information; Cooperation
	5. Most important actors	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G
Motor vehicle drivers	1. Employment volume change	0/+	0	0/+	0
	2. Skills changes counted	7	6	7	6
	3. Emerging skills needs	Hard skills, Self management, Social skills	Hard skills, Self management	Hard skills, Self management, Social skills	Hard skills, Self management
	4. Most important solutions	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation	Recruiting; Training / retraining; Changing work organisation; Outsourcing / offshoring; Changing vocational education; New courses; Information; Improving image; Cooperation
	5. Most important actors	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G
Machine operators	1. Employment volume change	0	-	-	0
	2. Skills changes counted	7	6	7	7
	3. Emerging skills needs	Hard skills, Self management, Social skills	Hard skills, Self management, Social skills	Hard skills, Self management, Social skills	Hard skills, Self management, Social skills
	4. Most important solutions	Recruiting Training / retraining; Changing work organisation; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; New courses; Information; Cooperation	Recruiting; Training / retraining; Changing work organisation; New courses; Information; Cooperation
	5. Most important actors	C, E, I, U, S, G	C, E, I, U, S, G	C, E, I, U, S, G	C, E, I, U, S, G
Logistics workers	1. Employment volume change	-	0	-	0
	2. Skills changes counted	9	6	9	6
	3. Emerging skills needs	Self management, Social skills, Hard skills, Management skills	Self management, Management skills	Self management, Social skills, Hard skills, Management skills	Self management, Management skills
	4. Most important solutions	Recruiting; Training / retraining; New courses; Information; Cooperation	Recruiting; Training / retraining; New courses; Information; Cooperation	Recruiting; Training / retraining; New courses; Information; Cooperation	Recruiting; Training / retraining; New courses Information; Cooperation
	5. Most important actors	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G	C, E, I, S, U, G

C Companies; S=Sectoral organisations, U=trade Unions; E=Education and training institutes; G=Government (EU, Member State, regional, local); I = Intermediary organisations =