



Boosting Online cross-border Sales for furniture and household SMEs

**O1 - ACT2.1 - Report on skills and knowledge needs for
implementing winning E-Commerce practices in the
furniture sector**

**O1 - Online Sales Manager Training Course (OSM)
ACT2 - Needs validation phase
T1 - Skills needs preset**

VERSION 2



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1. - Introduction

The project, BOSS4SME, has been funded by the European Commission in the framework of the Erasmus Plus Programme – Action KA2 – Cooperation and Innovation for Good Practices.

The project consortium is composed of CENFIM (Spain), AMUEBLA (Spain), CCS (Greece), Eurocrea (Italy), AMIC (Spain), and Danmar (Poland).

BOSS4SME project will develop the European Furniture and household Sector through development of the **Online Sales Manager profile**, a professional capable of devising **e-Commerce** strategies for increasing revenues from cross-border sales through utilisation of the Internet as a sales channel.

In order to achieve its goals the project will develop a training path and related tools aiming to equip furniture and household professionals with the right skills to start selling online, especially cross-border and increase online sales revenues by addressing a much bigger audience.

This report forms part of the IO1 of the BOSS4SME project for the development of the Online Sales Manager Training Course (OSM). The report has been produced on the findings of the previous report developed during the BOSS4SME project:

O1 - A1 - E-commerce practices in furniture industry and GAP identification between partners' Countries and leading countries;

The document provides information on the skills and knowledge, based on ESCO and O*NET, needed to cover the identified GAPS. As result, 58 skills have been defined as necessary to cover the detected GAPS. Skills have been aligned with the related knowledge.

2. - Objective

The objective of this deliverable is to deliver a document which includes the **skills and knowledge needs identified for the Online Sales Manager profile of the furniture sector**, based on the GAPS defined in the previous activity (O1 / A1 - Rationalization Phase) and which are summarized in the following table:

Table 1. Summary of GAPS identified in O1 / A1

	GAPS
LEVEL A	PRODUCT INFORMATION
	BUILD TRUST
LEVEL B	FACILITIES FOR PRODUCT SELECTION
LEVEL C	WEBSITE USABILITY
	MARKETING TOOLS
	INTERNATIONALIZATION

3.- Methodology

Skills, Competencies, Occupations, Knowledge and Qualifications are today defined by different national or international **databases**, such as **ISCO, ISCED, DISCO, ESCO, DOT, O * NET** or **SOC**, whose objective is to classify and standardize the different occupations existing in the labor market and relate them to their training needs and competencies. However, **the classification and standardization of occupations differs between such databases** because they are not classified in the same way in Europe as in the United States.

In addition, the academic literature on jobs and skills is extensive and covers many contributions on job creation, skills upgrading... among a wide range of different topics. Today, **the employment structure is constantly changing and new jobs**, such as **e-commerce in the furniture sector, and skills are emerging**, so literature and databases are constantly being updated.

Therefore, in order to achieve the objectives defined in this stage O1 / A2, **the data provided by two international databases**, the **European ESCO** and the **American O * NET**, **have been analyzed and compared**.

The current version of both databases does not exactly include the occupation "**Online Sales Manager**" or "**e-commerce**", so that, in order to obtain the knowledge and skills of this occupation according to the GAPS, occupations directly related to electronic commerce and the sale of furniture have been identified in both databases, analyzing the different skills and knowledge associated with each one of them. The information extracted has been analyzed and compared, identifying **common knowledge and skills** as well as those that do not appear in both databases, but are detected as necessary to cover each GAP defined in O1 / A1.

The following figure represents a **summary of the methodology used to achieve the objectives of the O1 / A1 phase**. A first step to cover each GAP describes the knowledge that needs to be acquired by SMEs and especially their professionals. In a second step, the knowledge described is related to a specific skill needs. Thus, at the end of the report a table linking gaps, knowledge and skills will be developed.

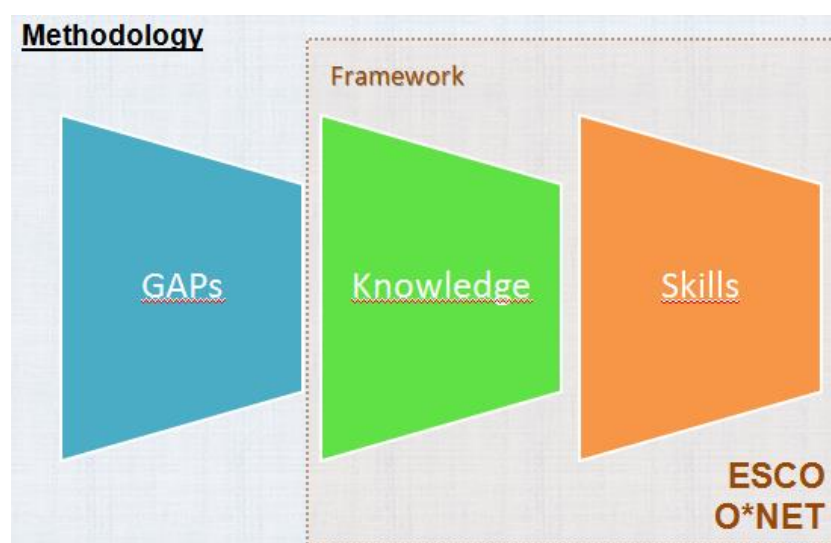


Figure 1. Methodology to define skills needs in E-Commerce in the furniture sector

3.1- ESCO and O*NET Databases

Before starting to extract comparative data it is necessary to know the two databases to be used: **ESCO AND O*NET.**

WHAT IS ESCO?

ESCO: is the multilingual **classification of European Skills, Competences, Qualifications and Occupations.** ESCO is an important deliverable to support the Europe 2020 strategy and the New Skills Agenda for Europe.

The Commission services launched the project in 2010 with an open stakeholder consultation. DG Employment, Social Affairs and Inclusion manages the development and continuous updating of the ESCO classification. In this work, it is supported by stakeholders and by the European Centre for the Development of Vocational Training Cedefop.

The **ESCO classification identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market and education and training.** It systematically shows the relationships between the different concepts. ESCO has been developed in an open IT format, is available for use free of charge by everyone and can be accessed via the ESCO service platform.

A demo version of ESCO (ESCO v0) was published on 23 October 2013. This release marks the beginning of the pilot and testing phase. **The first full version of ESCO (ESCO v1) is expected to be released mid-2017.**

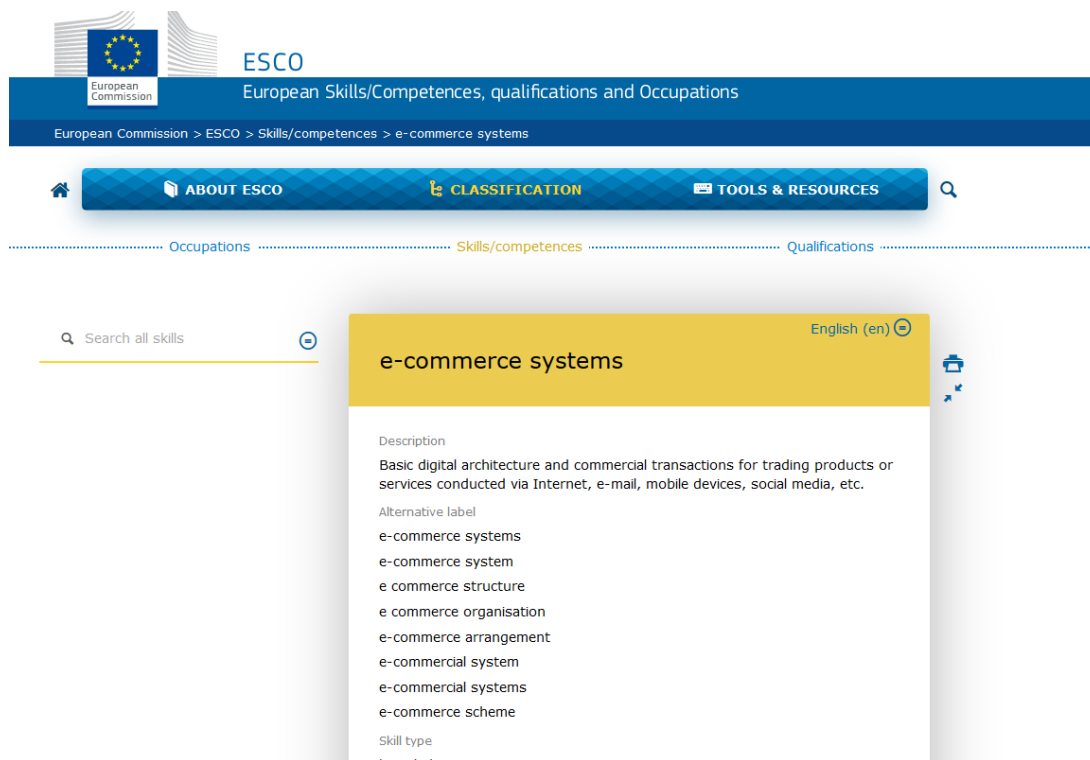


Figure 2. Web of ESCO

WHAT IS O*NET?

O*NET: The O*NET Program is the nation's primary source of occupational information.

Valid data are essential to understanding the rapidly changing nature of work and how it impacts the workforce and U.S. economy. From this information, applications are developed to facilitate the development and maintenance of a skilled workforce.

Central to the project is the O*NET database, containing hundreds of standardized and occupation-specific descriptors on almost 1,000 occupations covering the entire U.S. economy. The database, which is available to the public at no cost, is **continually updated from input by a broad range of workers in each occupation.**

O*NET information is used by millions of individuals every year, including those taking advantage of O*NET Online, My Next Move, and other publicly and privately developed applications. The data have proven vital in helping people find the training and jobs they need, and employers the skilled workers necessary to be competitive in the marketplace.

The Occupational Information Network (O*NET) is developed under the sponsorship of the **U.S. Department of Labor/Employment and Training Administration (USDOL/ETA)** through a grant to the North Carolina Department of Commerce.

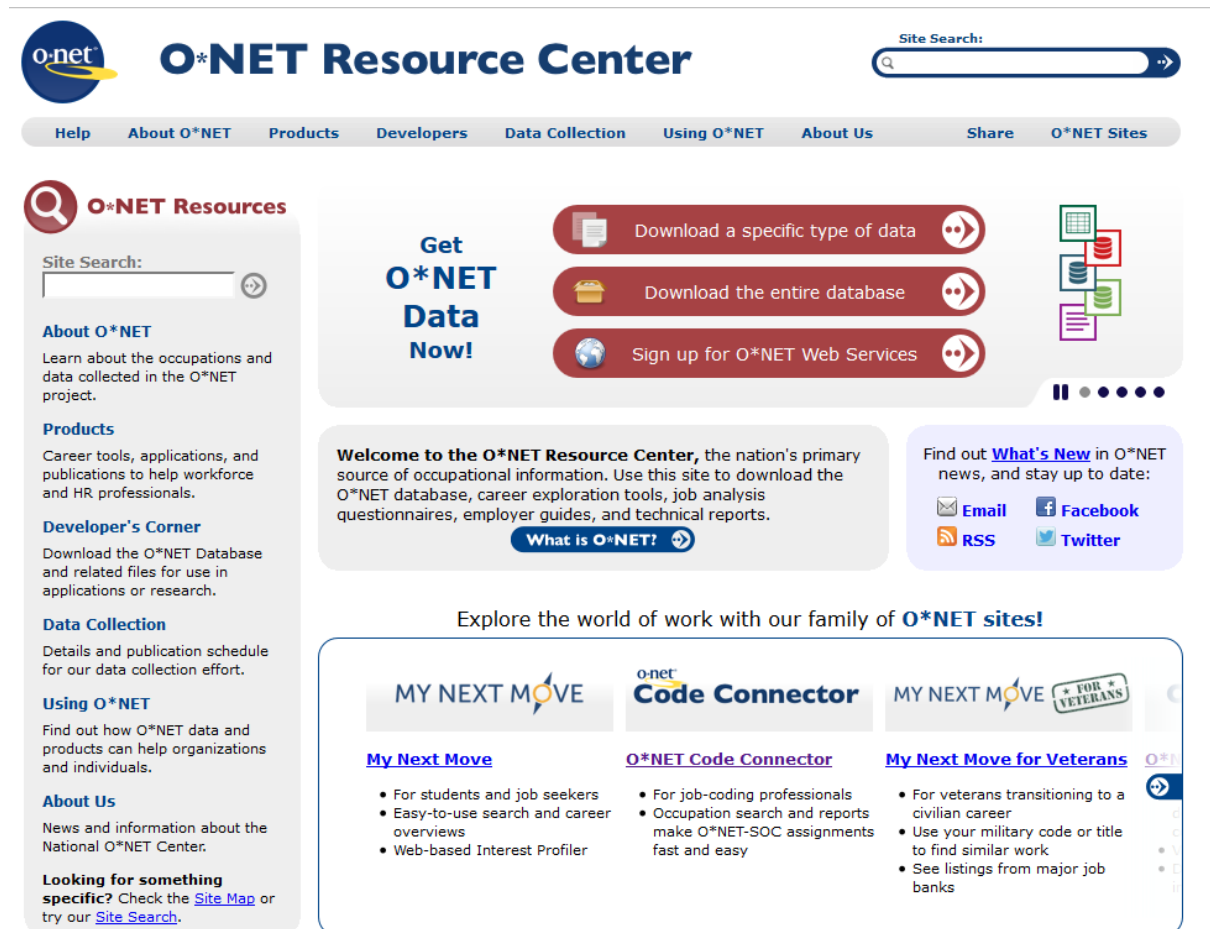


Figure 3. Web of O*NET

3.2- Knowledge related to E-commerce

As it was presented, the **O * NET database** includes information on skills, knowledge, work activities and interests related to different occupations. Therefore, in order to determine the necessary knowledge required by an **E-commerce profile**, based on the GAPS defined in O1/A1, first it was selected from **O*NET** database the occupations related to the **Online Sales Manager**.

The occupations in **O*NET** are classified and standardized according to **O*NET-SOC Code** (https://www.bls.gov/soc/2018/soc_2018_definitions_without_changes_tracked.pdf), of which six have been identified as occupations related to the **Online sale of furniture: Online Merchants, Search Marketing Strategists, Sales Managers, Web Developers, Web Administrators and Graphic Designers**.

The following table shows the **O*NET – SOC Code** and the description of each of the 6 occupations related to the **Online Sale Manager**:

Table 2. O*NET-SOC Code and occupations related to the Online sale of furniture

O*NET-SOC Code	Occupation	Description
13-1199.06	Online Merchants	Conduct retail activities of businesses operating exclusively online . May perform duties such as preparing business strategies, buying merchandise, managing inventory, implementing marketing activities, fulfilling and shipping online orders, and balancing financial records.
15-1199.10	Search Marketing Strategists	Employ search marketing tactics to increase visibility and engagement with content, products, or services in Internet-enabled devices or interfaces . Examine search query behaviours on general or specialty search engines or other Internet-based content. Analyze research, data, or technology to understand user intent and measure outcomes for ongoing optimization.
11-2022.00	Sales Managers	Plan, direct, or coordinate the actual distribution or movement of a product or service to the customer . Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.
15-1134.00	Web Developers	Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content .

O*NET-SOC Code	Occupation	Description
15-1199.03	Web Administrators	Manage web environment design, deployment, development and maintenance activities. Perform testing and quality assurance of web sites and web applications.
27-1024.00	Graphic Designers	Design or create graphics to meet specific commercial or promotional needs , such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects. (Artist, Creative Director, Creative Manager, Design Director, Designer, Graphic Artist, Graphic Designer, Online Producer , Production Artist, Publications Designer)

The next step has been to **extract the knowledge of each of these occupations from the O * NET database and compare them to each other, extracting the common knowledge (Essential Knowledge)** in at least two of the occupations to finally **align them with the GAPS identified in A1 / O1.**

Annex I contains the comparison of the knowledge of each one of the occupations related to the e-commerce in the furniture sector, extracting the **common ones of all of them.**

Table 5 shows the key of colour for common knowledge in more than one occupation. Thus, Communications and Media, English Language and Computers and Electronics are Knowledge common to the six occupations related to e-commerce in the furniture sector according to the O*NET database.

Table 3. Common knowledge in occupations related to the e-commerce. O*NET Database

COMMON KNOWLEDGE IN AT LEAST TWO OCCUPATIONS
Usability — Knowledge of methods for improving ease-of-use of the web during the design process
Search tools — Knowledge in search tools on web pages for product localization.
Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modelling, leadership technique, production methods, and coordination of people and resources.

COMMON KNOWLEDGE IN AT LEAST TWO OCCUPATIONS
Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Table 4. Key of colours

KNOWLEDGE IN ONE OCCUPATION
COMMON KNOWLEDG IN TWO OCCUPATIONS
COMMON KNOWLEDG IN THREE OCCUPATIONS
COMMON KNOWLEDG IN FOUR OCCUPATIONS
COMMON KNOWLEDG IN FIVE OCCUPATIONS
COMMON KNOWLEDG IN SIX OCCUPATIONS

Finally, the table below shows the **GAPS defined in O1/A1 aligned** with the corresponding **knowledge** extracted from **Annex I**:

Table 5. Knowledge E-commerce aligned with GAPS

LEVEL	GAPS	KNOWLEDGE
LEVEL A	PRODUCT INFORMATION	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

LEVEL	GAPS	KNOWLEDGE
		Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
		Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
	BUILD TRUST	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
LEVEL B	FACILITIES FOR PRODUCT SELECTION	Search tools — Knowledge in search tools on web pages for product localization.
LEVEL C	WEBSITE USABILITY	Usability — Knowledge of methods for improving ease-of-use of the web during the design process.
	MARKETING TOOLS	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
	INTERNATIONALIZATION	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

NOTE: at the time of this analysis, ESCO Database did not collect the knowledge associated with each occupation, so it was not possible to compare the two databases.

3.3.- Skills needs

Once the necessary knowledge has been identified and as has been done in the previous section, the **occupations related to e-commerce in the furniture sector have been identified in the European ESCO database.**

In ESCO, each occupation is mapped to exactly one **ISCO-08 code**. ISCO-08 can therefore be used as a hierarchical structure for the occupations pillar. Since **ISCO** is a statistical classification, its occupation groups do not overlap. Each **ESCO occupation** is therefore mapped to only one **ISCO** unit group. It follows from this structure, that **ESCO** occupation concepts can be equal to or narrower than **ISCO**

unit groups, but not broader. The result is a strictly mono-hierarchical structure where each element at level 2 or lower has exactly one parent.

A few groups of ISCO-08 do not contain ESCO occupations. These are usually occupation groups with no economic activity in the EU

Translations of ISCO

ESCO does not adapt the ISCO occupation groups, but the Commission manages translations of ISCO labels in the official languages of the European Union. For the various language variants ESCO uses the translations of the Commission Recommendation of 29 October 2009 on the use of the International Standard Classification of Occupations (2009/824/EC) if available.

Therefore, the occupations identified in the ESCO database related to electronic commerce in the furniture sector are:

Table 6. ESCO occupations related to e-commerce in the furniture sector

ISCO-08 Code	Occupation	Description
1221	SALES MANAGER	Sales managers develop sales and targeting strategies for a company. They manage sales teams, allocate sales resources based on the plans, prioritise and follow up on critical leads, develop sales pitches and adjust them over time, and maintain a sales platform to track all leads and sales.
2513	WEB DEVELOPER	Web developers develop, implement and document web-accessible software based on the designs provided. They align the client's web presence with its business strategy, troubleshoot software problems and issues and look for ways to improve the application.
3514	WEB MANAGER	Web content managers curate or create content for a web platform according to the long-term strategic goals, policies and procedures for an organisation's online content or their customers. They control and monitor compliance with standards, legal and privacy regulations and ensure web optimisation. They are also responsible for integrating the work of writers and designers to produce a final layout which is compatible with corporate standards.
2166	GRAPHIC DESIGNER	Graphic designers create text and images to communicate ideas. They make visual concepts by hand or using computer software, intended for publishing in paper or online media such as advertisements, websites, and magazines.
3514	MANAGER, E-COMMERCE: MANAGING WEBSITE	Manager e-commerce creates and executes a company's electronic strategy plan for selling products and services online. They also improve data integrity, placement of online tools and brand exposure and monitor sales for companies that market products to customers using the

ISCO-08 Code	Occupation	Description
		internet. They collaborate with the marketing and sales management team using ICT tools to reach sales goals and provide accurate information and offerings to business partners.
5221	RETAILER ONLINE	Online marketers use e-mail, internet and social media in order to market goods and brands.

The following table shows the occupations identified in ESCO and O * NET databases related to e-commerce in the furniture sector and whose skills are going to be compared:

Table 7. Relationship between e-commerce in the furniture sector identified in ESCO and O*NET database

ESCO occupations	O*NET occupations
SALES MANAGER	SALES MANAGER
WEB DEVELOPER	WEB DEVELOPERS
WEB MANAGER	WEB ADMINISTRATORS
MANAGER, E-COMMERCE: MANAGING WEBSITE	SEARCH MARKETING STRATEGISTS
RETAILER ONLINE	ONLINE MERCHANTS
GRAPHIC DESIGNER	GRAPHIC DESIGNER

Next, skills corresponding to each of the occupations identified in each of the databases have been extracted. Annex II contains a list of the skills corresponding to the six occupations related to e-commerce in the furniture sector in the European ESCO database.

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
ONLINE MERCHANTS	SEARCH MARKETING STRATEGISTS				
E-commerce (business development)	E-commerce (vulnerability analysis)				
E-commerce (legal implications)	E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	Access control systems (installation)	ACT!	ACT!	JavaScript	
			JavaScript	JavaScript	
			Active Server Pages (ASP)		Active Server Pages (ASP)
			Active X		
	Adaptable Data Base System (ADABAS)				
Adobe Authorware	Adobe Authorware		Adobe Bridge		Adobe Bridge
					Adobe ColdFusion
			Adobe Contribute	Adobe Contribute	
			Adobe Flash Builder	Adobe Flash Builder	
					Adobe Freehand
					Adobe ImageReady
					Adobe PageMaker
					Adobe PageMill
					Adobe Photoshop
Advanced Business					

To determine the skills corresponding to the Online Sales Manager profile of the furniture sector, according to the similar occupations extracted from ESCO, **it has been proceeded to identify those that appear in at least two of the occupations.**

Table 8. Common skills in ESCO

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Client/server (programming)
PHP programming
Web programming
E-commerce (systems development)
Fireworks (web development program)
Flash
Graphical user interface system development
Linux
MySQL (database development)
Oracle (database administration)
Oracle E-Business Suite
OS/2 operating system
SASD management and development model
TIBCO Business Connect
UNIX
Web application development
Windows NT
Windows NT Advanced Server
Windows XP
ACT!
ActionScript
Adobe Authorware
Adobe Bridge
Adobe Contribute
Adobe Flash Builder
Ariba
ASW (business administration system)
Bulletin Board System (BBS)
Business analysis
Business and accounting systems (teaching)
Business development
Business systems
Cascading Style Sheets (CSS)
CICS (Customer Information Control System)
Commerce and administration programme (teaching)
Developing countries affairs

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Development economics
Development of statistical methods
Development work
Directing (multimedia development programme)
Dynamic HTML
E-commerce (business development)
E-commerce (legal implications)
E-commerce (vulnerability analysis)
Education development work
Electric Image Animation System (EIAS)
Electronic commerce (providing training)
E-mail (vulnerability analysis)
Embarcadero Delphi (development environment)
Ethics management and development model
Hardware development
HTML5
Infor Epiphany
Infor Orbis Marketing Resource Management (MRM)
Integrated services digital network (vulnerability analysis)
Interaction design
International development (teaching)
Internet/intranet (vulnerability analysis)
Java-script
JSP
LANtastic
LAN (vulnerability analysis)
Leadership development
Logic management and development model
MacOS
Market analysis
Minilab (photographic developing and printing)
Object-oriented analysis and design (OOAD)
Organisational development
OS 2200
Payment systems
PeopleSoft business administration system
Performance appraisals (administration)
Performance appraisals (methods)
Perl programming language
PerlScript

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
PL/SQL (database development)
Product development
Product development (teaching)
Rational Unified Process (RUP)
Sage CRM Cloud
Sage SalesLogix
SAP Business All-in-One
SAP Business ByDesign
SAP Business One
SAP ERP
SAS (statistics software)
Software development
Staff development
Standard Generalized Markup Language (SGML)
Sybase PowerBuilder
System design
System development (Macintosh computers)
System development (mainframe computers)
System development (PCs)
System development (teaching)
Systems development
System testing
Systems integration
Systems investigation
Test management (data systems)
Trade mark development
Websphere Process Server
Wide area network (vulnerability analysis)
Windows 2000
Windows 3.x
Windows 95/98
Windows Me

Table 8 shows a list of the **108 skills that are common in at least two of the six occupations identified in ESCO**. According to the color key (Table 4), 89 skills are common in two occupations (yellow), 16 are common in three (orange) and **only 3 skills related with programming are common in four (green) of the six occupations**. It is striking that no appears common skills in all six occupations.

The same process has been done for the **O * NET database, extracting skills** corresponding to the six chosen occupations. **Annex III** contains the identification of these skills and their relationship between them.

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
				Access software — Citrix	
Accounting software - Financial accounting		Accounting software — Sage 50 Accounting; Tax software			
		Analytical or scientific software — Minitab; SAS; SPSS		Analytical or scientific software — Google Analytics; SAS; WebTrends Analytics	
			Application server software — Oracle WebLogic Server; Red Hat WildFly	Application server software — Apache Webserver; Microsoft Virtual Server; Oracle Application Server; Oracle WebLogic Server; Red Hat WildFly; VMWare ESX Server	
Business intelligence and data analysis software — IBM Digital Analytics; Search engine optimization SEO software	Business intelligence and data analysis software — Atlas Search; BrightEdge; Conductor Searchlight; IBM Digital Analytics; Searchmetrics Suite	Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau	Business intelligence and data analysis software — MicroStrategy Hot technology; Qlik Tech QlikView Hot technology; Tableau	Business intelligence and data analysis software — Oracle Business Intelligence Enterprise Edition	
		Calendar and scheduling software — Contact management software; Scheduling			
Communications server software — IBM Domino			Communications server software — IBM Domino		

Figure 5. Extract from Annex III of the O*NET skills

In this case, **44 skills are common in at least two of the six occupations**, with 10 common skills in all of them, 8 common in five occupations, 6 in four, two in three occupations and 18 skills common in two occupations.

The 10 common skills: **Data base user interface and query software, Electronic mail software, Graphics or photo imaging software, Office suite software, Reading Comprehension, Spreadsheet software, Video creation and editing software, Web page creation and editing software, Web platform development software and Writing**, are going to be considered essential skills for the formation of the Online Sales Manager profile in the furniture sector (Table 9 and colour key in table 4).

Table 9. Common skills in O*NET

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Data base user interface and query software — FileMaker Pro; IBM Informix; Structured query language SQL; Transact-SQL
Electronic mail software — IBM Notes
Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio
Office suite software — Microsoft Office
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Spreadsheet software — Microsoft Excel

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze
Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Microsoft FrontPage; Salesforce Marketing Cloud
Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; Joomla; jQuery; Microsoft Active Server Pages ASP; Oracle JavaServer Pages JSP; PHP; Hypertext Preprocessor
Writing — Communicating effectively in writing as appropriate for the needs of the audience
Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau
Document management software — Adobe Systems Adobe Acrobat
Internet browser software — Web browser software
Object or component oriented development software — Advanced business application programming ABAP; Apache Spark; Apple Cocoa; C#; C++; jQuery; Microsoft ActiveX; Microsoft Visual Basic.NET; Microsoft Visual C#.NET; Objective C; Oracle Java; Practical extraction and reporting language Perl; Python; Swift
Presentation software — Microsoft PowerPoint
Project management software — Microsoft Project; Oracle Primavera Enterprise Project Portfolio Management
Sales and marketing software — Google Ad Words
Word processing software — Microsoft Word
Customer relationship management CRM software — Avidian Technologies Prophet; Blackbaud The Raiser's Edge; Eden Sales Manager; HEAT Software GoldMine; Maximizer Software Maximizer Enterprise; NetSuite NetCRM; Oracle Eloqua; Sage ACT!; Salesforce software; Salesforce.com Salesforce CRM; Software on Sailboats Desktop Sales Manager; Vanguard Software Vanguard Sales Manager
Data mining software — Google Analytics
Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Development environment software — Adobe Systems Adobe ActionScript; Apache Maven; C ; Common business oriented language COBOL; Eclipse IDE; IBM Rational Rose; Integrated development environment IDE software; Microsoft .NET Framework; Microsoft PowerShell; Microsoft Visual Basic; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual SourceSafe; Microsoft Visual Studio; Oracle Java 2 Platform Enterprise Edition J2EE; Ruby Hot technology; Subversion
Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere
Enterprise resource planning ERP software — Microsoft Dynamics; NetSuite ERP; SAP Business Objects
Data base management system software — Amazon DynamoDB; Amazon Kinesis; Apache Cassandra; Apache Hadoop; Apache Hive; Apache Pig; Apache Solr; MongoDB; MySQL; NoSQL; Oracle PL/SQL; Relational database management software; Sybase; Teradata Database
Operating system software — Android; Hewlett Packard HP-UX; Job control language JCL; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; Ubuntu; UNIX
Accounting software — Sage 50 Accounting; Tax software
Analytical or scientific software — Minitab; SAS; SPSS
Application server software — Apache Webserver; Microsoft Virtual Server; Oracle Application Server; Oracle WebLogic Server; Red Hat WildFly; VMWare ESX Server
Communications server software — IBM Domino
Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD Systems SignCAD
Content workflow software — OpenText Livelink ECM; Vignette Content Management
Enterprise system management software — IBM Power Systems software; Splunk Enterprise
Financial analysis software — Delphi Technology
Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle
Information retrieval or search software — LexisNexis, Pinterest

COMMON SKILLS IN AT LEAST TWO OCCUPATIONS
Instant messaging software — Twitter; WhatsApp
Inventory management software — Inventory software
Music or sound editing software — Sony Sound Forge
Object oriented data base management software — Hibernate ORM; PostgreSQL
Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBoooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow
Portal server software — Apache HTTP Server; Vignette Portal
Transaction security and virus protection software — SSL
Transaction server software — Customer information control system CICS Hot technology ; Microsoft Internet Information Service IIS

After analyzing and extracting the common skills in each database, it has been compared the 108 skills extracted from ESCO with the 44 extracted from O * NET in order to extract common skills again between the two databases and finally align them with the identified GAPS. The common skills between both databases are considered ESSENTIAL SKILLS for the training in Online Sales Manager profile of the furniture sector.

Annexes IV and V contain the comparative tables of common skills between ESCO and O * NET.

COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS		COMMON SKILLS IN AT LEAST TWO O*NET OCCUPATIONS	
1	Client/server (programming)	1	Data base user interface and query software — FileMaker Pro; IBM Informix; Structured query language SQL; Transact-SQL
2	PHP programming	2	Electronic mail software — IBM Notes
3	Web programming	3	Graphics or photo imaging software — Adobe Systems Adobe
4	E-commerce (systems development)	4	Office suite software — Microsoft Office
5	Fireworks (web development program)	5	Reading Comprehension — Understanding written sentences
6	Flash	6	Spreadsheet software — Microsoft Excel
7	Graphical user interface system development	7	Video creation and editing software — Adobe Systems Adobe
8	Linux	8	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player;
9	MySQL (database development)	9	Web platform development software — Adobe Systems Adobe
10	Oracle (database administration)	10	Writing — Communicating effectively in writing as appropriate
11	Oracle E-Business Suite	11	Business intelligence and data analysis software — IBM Cognos
12	OS/2 operating system	12	Document management software — Adobe Systems Adobe
13	SASD management and development model	13	Internet browser software — Web browser software
14	TIBCO BusinessConnect	14	Object or component oriented development software —
15	UNIX	15	Presentation software — Microsoft PowerPoint
16	Web application development	16	Project management software — Microsoft Project; Oracle
17	Windows NT	17	Sales and marketing software — Google AdWords
18	Windows NT Advanced Server	18	Word processing software — Microsoft Word

Figure 6. Extract from Annex IV comparing common skills extracted from ESCO and O * NET

O*NET	ESCO		SKILLS ESCO
COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS	COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS		SKILL O*NET
Data base user interface and query software — FileMaker Pro; IBM	Graphical user interface system development		
Electronic mail software — IBM Notes	E-mail (vulnerability analysis)		
Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop	Fireworks (web development program)		
Office suite software — Microsoft Office			
Reading Comprehension — Understanding written sentences and paragraphs in a variety of informational, literary, and technical texts			
Spreadsheet software — Microsoft Excel			
Video creation and editing software — Adobe Systems Adobe Director; Adobe Systems Adobe Premiere Pro	Flash	Adobe Flash Builder	
Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia			
Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Java	PHP programming	Cascading Style Sheets (CSS)	JSP

Figure 7. Extract from Annex V comparing common skills extracted from ESCO and O*NET

Finally **Annex VI** collects **alignment GAPS with knowledges, common skills** between the two databases (essential skills) and those that are not common but are considered to be part of the formation profile in study (optional skills).

According to **Figure 8**, the **orange color** of the skills means that these come from the **ESCO database** while the **greens skills** come from **O * NET**. The color of the common column is related to the number of common skills in different analyzed occupations in accordance to the colour key of table 4.

GAPS	KNOWLEDGE	SKILLS	COMMONS
PRODUCT INFORMATION	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics.	Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD Systems SignCAD	
		Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher	
		Directing (multimedia development programme)	
		Electric Image Animation System (EIAS)	
		Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio	
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.	Infor Orbis Marketing Resource Management (MRM)	
		Interaction design	
		Music or sound editing software — Sony Sound Forge	
		Product development	
		Object-oriented analysis and design (OOAD)	
	Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.	Sage SalesLogix	
		Sales and marketing software — Google AdWords	
		Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze	
		Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Facebook; Google Webmaster Tools; LinkedIn; Microsoft FrontPage; Salesforce Marketing Cloud; WordPress	

Figure 8. Extract from Annex VI GAPS- Knowledge-Skills of the Online Sales Managers in the furniture sector

4.-Conclusions

- The start point is **GAPS** identified in the previous activity: **product information build trust, facilities for product selection, website usability, marketing tools and internationalization.**
- The identified GAPS have been related with **7 knowledge categories: sales and marketing, communication and media, design, customer and personal service, search tools, usability, and English language.**
- **Sales manager, Web Developer, Web Manager, Retailer Online (or Online Merchants), Search Marketing Strategists (or Managing website) and Graphic Designer** are the six occupations identified in **ESCO** and **O * NET** as the closest to the profile of Online Sales Manager in the furniture Sector. The analysis and comparison of the skills of these selected occupations have resulted in the essential skills of the Online Sales Manager in the furniture Sector profile.
- **Client / server (programming), PHP programming and Web programming** are common skills in 4 occupations according to the **ESCO database.**
- **Data base user interface and query software, Electronic mail software, Graphics software or photo imaging software, Office suite software, Reading Comprehension, Spreadsheet software, Video creation and editing software, Web page creation and editing software,** are the 10 common skills in the 6 chosen occupations in the **O * NET database.**
- **58 common skills** have resulted from comparing the occupations selected in both databases. **These skills have been aligned with GAPS and Knowledge previously identified.**

ANNEX I

Comparison of the knowledge of e-commerce related occupations in O*NET database

Occupation	Knowledge
13-1199.06 - Online Merchants	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	Clerical — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
	Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
	Economics and Accounting — Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
	Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Occupation	Knowledge
15-1199.10 - Search Marketing Strategists	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	Usability — Knowledge of methods for improving ease-of-use of the web during the design process.
	Search tools — Knowledge in search tools on web pages for product localization.
	Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
	Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Occupation	Knowledge
11-2022.00 - Sales Managers	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
	Education and Training — Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
	Personnel and Human Resources — Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Occupation	Knowledge
15-1134.00 - Web Developers	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
	Usability — Knowledge of methods for improving ease-of-use of the web during the design process.
	Search tools — Knowledge in search tools on web pages for product localization.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

Occupation	Knowledge
15-1199.03 - Web Administrators	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Occupation	Knowledge
27-1024.00 - Graphic Designers	Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
	Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
	Fine Arts — Knowledge of the theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.
	Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

COLOUR KEY
KNOWLEDGE IN ONE OCCUPATION
COMMON KNOWLEDGE IN TWO OCCUPATIONS
COMMON KNOWLEDGE IN THREE OCCUPATIONS
COMMON KNOWLEDGE IN FOUR OCCUPATIONS
COMMON KNOWLEDGE IN FIVE OCCUPATIONS
COMMON KNOWLEDGE IN SIX OCCUPATIONS

COMMON KNOWLEDGE IN AT LEAST TWO OCCUPATIONS
Usability — Knowledge of methods for improving ease-of-use of the web during the design process.
Search tools — Knowledge in search tools on web pages for product localization.
Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
Administration and Management — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.
English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

ANNEX II

Skills related to e-commerce occupations in the furniture sector in the European ESCO database

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	Access control systems				
	Access control systems (installation)				
		ACT!	ACT!		
			ActionScript	ActionScript	-
			Active Server Pages (ASP)		Active Server Pages (ASP)
			Active X		-
	Adaptable DAta BAse System (ADABAS)				
Adobe Authorware	Adobe Authorware				
-			Adobe Bridge		Adobe Bridge
-					Adobe ColdFusion
-			Adobe Contribute	Adobe Contribute	-
-			Adobe Flash Builder	Adobe Flash Builder	-
-					Adobe Freehand
-					Adobe ImageReady
-					Adobe PageMaker
-					Adobe PageMill
-					Adobe Photoshop
Advanced Business Application Programming (ABAP)					
-					Advertisement production (design)

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
					Advertising drawing
					Alias PowerAnimator
	AMPS system				Animation
	Analysis technology				Animation (artistic)
					Animation (film)
					Animation (multimedia)
			Apache web server		-
			Apple-script (programming language)		-
			Applications programming		-
			Ariba	Ariba	-
	AS/400 Control Language				
ASW (business administration system)	ASW (business administration system)				
					Autodesk Maya
					Autodesk Softimage
	AVID Media Composer				
			BASIC (programming language)		
				Border Gateway Protocol (BGP)	
		Budget responsibility			-
	Bulletin Board System (BBS)			Bulletin Board System (BBS)	
Business administration					

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
Business analysis	Business analysis				
Business and accounting systems (teaching)	Business and accounting systems (teaching)				
Business and administration					
Business cycle policy					
Business development	Business development				
Business economics (teaching)					
Business intelligence					
Business interruption insurance					
Business language (teaching)					
Business management (archives)					
Business management (bank)					
Business management (business sector)					
Business management (shipping company)					
Business management (workshop)					
Business systems	Business systems				
-	-		C (programming language)	-	
-			C++ (builder programming tool)		
-			C++ (programming language)		
-			Caché		
	Calculations for power systems				
	Capability analysis				
	Capital market analysis				
					Cartoon drawing

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
			Cascading Style Sheets (CSS)		Cascading Style Sheets (CSS)
			CASE tools (Computer Aided Software Engineering)		-
			CGI (programming language)		-
			CGI-script (programming language)		-
	CICS (Customer Information Control System)		CICS (Customer Information Control System)		-
Client/server (programming)	Client/server (programming)		Client/server (programming)		-
			CM, Configuration Management		-
	CNC systems (maintenance)				-
	Code Division Multiple Access system (CDMA)		Cobol (programming language)		-
			COM/DCOM (distributed object technology)		-
		Commercial law			-
Commerce and administration programme (teaching)	Commerce and administration programme (teaching)				
	Commerce teacher				
	Company analysis				
	Computer Aided Design and Manufacturing systems (CAD/CAM)				
	Computer-aided control systems				
	Computerised control systems				
					Corel PaintShop Pro
					Corel Ventura

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-					CorelDRAW
-	Country monitoring		Customer relationship management		-
-	Data analysis		Data modelling		-
-	Data processing and analysis		Data warehouse		-
-			Database design (logical)		-
-			Database design (physical)		-
-			DB2 database administration		-
-			DB2 programming		-
-					DeBabelizer (image editor)
-	Decision support systems (teaching)				
-	Design of accounting systems				
Developing countries affairs	Developing countries affairs				
Development economics	Development economics				
Development of statistical methods	Development of statistical methods				
Development work	Development work				
-	Dewey Decimal Classification (DDC)				
-	Digital AMPS				
-					Direct marketing (design)
Directing (multimedia development programme)	Directing (multimedia development programme)				
-	Discontinuance analysis				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-	DMS (database administration)				
-	DMS (programming)				
-		Drafting of agreements and contracts			
-	Drama work analysis				Dreamweaver
-	DXC (telecommunications networks)				
-			Dynamic HTML		Dynamic HTML
-	Dynamic Standard Setting System (DySSSy)				
-	Eco-Management and Audit Scheme (EMAS)				
E-commerce (business development)	E-commerce (business development)				
E-commerce (legal implications)	E-commerce (legal implications)				
E-commerce (systems development)	E-commerce (systems development)		E-commerce (systems development)		
E-commerce (vulnerability analysis)	E-commerce (vulnerability analysis)				
	Economic analysis				
Economic control (private business)					
	Economic performance analysis				
	EDGE system				
Education development work	Education development work				
	Electric Image Animation System (EIAS)				Electric Image Animation System (EIAS)
Electronic commerce (providing training)	Electronic commerce (providing training)				
E-mail (vulnerability analysis)	E-mail (vulnerability analysis)				
Embarcadero Delphi (development environment)	Embarcadero Delphi (development environment)				
	Enea OSE				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
				Enhanced Interior Gateway Routing Protocol (EIGRP)	
				Ethernet (network administration)	
	Ethernet (vulnerability analysis)				
Ethics management and development model	Ethics management and development model		Extensible Markup Language (XML)		
	Family therapy/network system				
	Financial analysis				
	Financial analysis (teaching)				
Fireworks (web development program)	Fireworks (web development program)				Fireworks (web development program)
Flash	Flash				Flash
	FMEA (Failure Mode and Effects Analysis)				
	Gaming sales (online gambling terminal Spectra)				
	GCL				
	Geographical information system				
	Geographical information system (teaching)				
	GPRS system				GifBuilder
	GPS (global positioning system)				GoLive
			Graphical user interface programming		Graphic design

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
Graphical user interface system development	Graphical user interface system development		Graphical user interface system development		
-	GSM system				
-	Haiku (operating system)				
Hardware development	Hardware development				
-					Hash Animation Master
-			HDML		
-			HTML5		HTML5
-				Hubs (installation and maintenance)	
-	IBM i				
-	IBM OS/390				
-					Illustration
-					Illustrator
-					Image processing
-		Import and export documentation			
-					InDesign
-	Inflation analysis				
-		Infor Epiphany	Infor Epiphany		
-		Infor Orbis Marketing Resource Management (MRM)	Infor Orbis Marketing Resource Management (MRM)		
-	Information analysis (teaching)				
-	Integrated services digital network (vulnerability analysis)			Integrated services digital network (network administration)	
-	Intelligent transport system (international haulage)				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
			Interaction design		Interaction design
International development (teaching)	International development (teaching)			Internet/intranet (network administration)	
	Internet/intranet (vulnerability analysis)			Internetwork Packet Exchange/Sequenced Packet Exchange (communications protocol)	
	IRIX				
	ISO 8879:1986 (standard generalized markup language (SGML))				
	ISO 9000:2005 (fundamentals quality management system)				
	ISO 9001:2008 (quality management system)				
	ISO/TR 10013:2001 (guidelines for quality management system documentation)				
			Java		
			Java-script		Java-script
JD Edwards	JD Edwards				
	Job control language (JCL)				
			JSP		JSP
	Knowledge-based systems (teaching)				
	LANtastic			LANtastic	

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	LAN (vulnerability analysis)			LAN (network administration)	
Legal sociology					
Legal studies					
Leadership development	Leadership development				
Legal terminology					
-	Level measurement systems				
-	Life cycle analysis (ISO 14040 and ISO 14044 series)				
-					Lighting (multimedia)
-	Linux		Linux	Linux	
Litigation					
-	Lock and security system servicing				
-	Log forwarder				
-		Logistics			
Logic management and development model	Logic management and development model				
			Lotus Notes		
-				Macintosh computers (installation and maintenance)	Machinery design
-	MacOS			MacOS	
-	Maintenance of DC systems				
-	Maintenance planning system				
-	Market analysis	Market analysis			
-	Market surveys (result analysis)				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-	Market surveys (statistical analysis)	Marketing (market communication)			-
-			Media technology		Master design production
-			MFC program library		
-	Microprocessor systems		Microsoft Access (database administration)		
-			Microsoft Access (programming)		
-					Microsoft FrontPage
-	MicroStrategy Business Intelligence				Microsoft Publisher
Minilab (photographic developing and printing)	Minilab (photographic developing and printing)				
-				Modems (installation and maintenance)	
-		MS Project			
-					Multimedia production
-	Multiple Virtual Storage (MVS)				
MySQL (database development)	MySQL (database development)		MySQL (database development)		
-			Natural language programming (NLP)		
-		Negotiating experience			
-	NetBIOS				NetObjects Fusion
-			Netscape Server		
-				Network administration	
-					Newspaper design (layout)
-	Non-linear editing (NLE)				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-	Novell NetWare				
-	Object-oriented analysis and design (OOAD)		Object-oriented analysis and design (OOAD)		
-	Open Virtual Memory System (OpenVMS)				
-	Operating systems (providing training)				
-	Operations planning (power systems)				
-	Operations responsibility (power systems)				
OpenEdge Advanced Business Language					
OpenText Business Process Management (BPM)					
Oracle (database administration)	Oracle (database administration)		Oracle (database administration)		
Oracle E-Business Suite	Oracle E-Business Suite		Oracle WebLogic Server		
	Oracle Solaris				
Organisational development	Organisational development				
-					Ornamental objects (design)
-	OS 2200		OS 2200		
-	OS/2 operating system		OS/2 operating system	OS/2 operating system	
-					PageSpinner HTML editor
Payment systems		Payment systems			
					PC installation and maintenance
PeopleSoft business administration system	PeopleSoft business administration system				
Performance appraisals (administration)	Performance appraisals (administration)				
Performance appraisals (methods)	Performance appraisals (methods)				
-			Perl programming language		Perl programming language
-			PerlScript		PerlScript
PHP programming	PHP programming		PHP programming		PHP programming

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	Piping systems (repairing)				
PL/SQL (database development)	PL/SQL (database development)				
-					Poster design (layout)
-					PostScript
Product development	Product development				
Product development (teaching)	Product development (teaching)				
-			Programming (PCs)		-
-			Project management		-
-	PSOS operating system				-
-			Python (programming language)		
-					QuarkXPress
-	QS9000				
-	Quality auditing				
-	Quality management (ISO 9000 series)				
-					QuickTime
-	Radio link system				
Rational Unified Process (RUP)	Rational Unified Process (RUP)				
Recognise opportunity					
-	Real estate data system				
-	Real-time systems				
-	Relational databases (database administration)				
-					
-	Relational databases (programming)				
-	Remote-control systems				
-	Remote analysis				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-	Remote analysis (teaching)				
-	Risk and safety analysis (work environment)				Ripping (print)
-				Routers (installation and maintenance)	-
-				Routing Information Protocol (RIP)	-
-		Sage CRM	-	-	
-		Sage CRM Cloud	Sage CRM Cloud		
-		Sage SalesLogix	Sage SalesLogix		
-		Sales statistics			
-	SAP ERP				
-	SAP Business All-in-One	SAP Business All-in-One	-		
-	SAP Business ByDesign	SAP Business ByDesign	-		
-	SAP Business One	SAP Business One	-		
-		SAP CRM			
-	SAP ERP	SAP ERP	-		
-		SAP for Retail			
-		SAP for Utilities			
-		SAP SCM			
-	SAS (statistics software)				
-	SASD management and development model	SASD management and development model			
-	Satellite navigation				-
-					Scanning
-	Security analysis (data security)				-
-		Siebel CRM Desktop			-

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
-					Sign writing
-	Signalling system				-
-					SketchBook Pro
-	Simulation system				
Show business					
Software development	Software development				
-	Sound systems design				
-	SPSS				
-			SQL		
Staff development	Staff development				
-		Staff responsibility			
-			Standard Generalized Markup Language (SGML)		Standard Generalized Markup Language (SGML)
-	Steadicam				
-	Strength analysis				
-				Switches (installation and maintenance)	
Sybase PowerBuilder	Sybase PowerBuilder				
-					Symantec Visual Page
-	Symbian				
-	Synon operating system				
-	System administration (teaching)				
-	System architecture (teaching)				
-	System construction (teaching)				
-	System description				
-	System design		Systems design		

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
System development (macintosh computers)	System development (macintosh computers)				
System development (mainframe computers)	System development (mainframe computers)				
System development (PCs)	System development (PCs)				
System development (teaching)	System development (teaching)				
Systems development			Systems development		
	System formwork erection				
	System testing		System testing		
	Systems administration				
	Systems analysis				
	Systems design				
	Systems development				
	Systems integration		Systems integration		
	Systems investigation		Systems investigation		
	Systems Network Architecture (SNA)				
	Systems technology (teaching)				
	Systems theory and computer communications (teaching)				
				TCP/IP	
				Terminal servers (installation and maintenance)	
	Test management (data systems)		Test management (data systems)		
	Text analysis				
		TIBCO BusinessConnect	TIBCO BusinessConnect	TIBCO BusinessConnect	
	Time series analysis				

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	Token ring network (vulnerability analysis)				
Trade mark development	Trade mark development				
-					Ulead PhotoImpact
	UMTS				
	UNIX		UNIX	UNIX	-
					Utility objects design
	Use operating systems				-
				User support (hardware)	-
				User support (software)	-
	-	-	-	-	VBScript
	Verilog				-
	Virtual Storage Extended (VSE)				
	VM (operating system)				
	Vulnerability analysis				
	VxWorks				
	W-CDMA (UMTS)				
	Weapon systems				
Web application development	Web application development		Web application development		
-					Web design
-					WebEdit
-				Web page management	-
Web programming	Web programming		Web programming		Web programming
-				Web servers (installation and maintenance)	-
-			Websphere Process Server	Websphere Process Server	

OCCUPATIONS RELATED TO E-COMMERCE in ESCO					
E-commerce (business development) E-commerce (legal implications)	E-commerce (vulnerability analysis) E-commerce (systems development)	SALES MANAGERS (29 Skills)	WEB DEVELOPER (86 Skills)	WEB MANAGER (45 Skills)	GRAPHIC DESIGNER (69 SKILLS)
	Wide area network (vulnerability analysis) Windows 2000 Windows 3.x Windows 95/98 Windows CE Windows Me Windows NT Windows NT Advanced Server Windows XP Wine testing (chemical analysis)		Windows NT Windows NT Advanced Server Windows XP	Wide area network (network administration) Windows 2000 Windows 3.x Windows 95/98 Windows Me Windows NT Windows NT Advanced Server Windows XP Wireless Access Points (WAP) Wireless Markup Language (WML) X.25 (communications protocol) X.400 (communications protocol) X.500 (communications protocol)	

ANNEX III

Skills related to e-commerce occupations in the furniture sector in the O*NET database

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
				Access software — Citrix	
Accounting software - Financial accounting software; Intuit QuickBooks; Tax software		Accounting software — Sage 50 Accounting; Tax software			
-		Analytical or scientific software — Minitab; SAS; SPSS		Analytical or scientific software — Google Analytics; SAS; WebTrends Analytics	
-			Application server software — Oracle WebLogic Server; Red Hat WildFly	Application server software — Apache Webserver; Microsoft Virtual Server; Oracle Application Server; Oracle WebLogic Server; Red Hat WildFly; VMWare ESX Server	
Business intelligence and data analysis software — IBM Digital Analytics; Search engine optimization SEO software	Business intelligence and data analysis software — Atlas Search; BrightEdge; Conductor Searchlight; IBM Digital Analytics; Searchmetrics Suite	Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau	Business intelligence and data analysis software — MicroStrategy Hot technology; Qlik Tech QlikView Hot technology; Tableau	Business intelligence and data analysis software — Oracle Business Intelligence Enterprise Edition	
		Calendar and scheduling software — Contact management software; Scheduling software			
Communications server software — IBM Domino			Communications server software — IBM Domino		
		Computer aided design CAD software — Bentley MicroStation			Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD

OCCUPATIONS RELATED TO E-COMMERCE in O*NET						
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)	
		Systems SignCAD				
			Configuration management software — Perforce Helix software Hot technology ; Puppet			
			Content workflow software — Atlassian JIRA; Sitecore CMS	Content workflow software — OpenText Livelink ECM; Vignette Content Management		
	Customer relationship management CRM software — Customer information databases					
		Customer relationship management CRM software — Avidian Technologies Prophet; Blackbaud The Raiser's Edge; Eden Sales Manager; HEAT Software GoldMine; Maximizer Software Maximizer Enterprise; NetSuite NetCRM; Oracle Eloqua; Sage ACT!; Salesforce software; Salesforce.com Salesforce CRM; Software on Sailboats Desktop Sales Manager; Vanguard Software Vanguard Sales Manager			Customer relationship management CRM software — Oracle Eloqua; Salesforce software	Customer relationship management CRM software — Oracle Eloqua
Data base management system software — Apache Solr; MySQL; Relational database management software		Data base management system software — Apache Solr; MySQL		Data base management system software — Amazon DynamoDB; Amazon Kinesis; Apache Cassandra; Apache Hadoop; Apache Hive; Apache Pig; Apache Solr; MongoDB; MySQL; NoSQL; Oracle PL/SQL; Relational database management software; Sybase; Teradata Database		
		Data base reporting software — SAP BusinessObjects Crystal Reports				

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
Data base user interface and query software — Search engine results pages SERP software; Structured query language SQL	Data base user interface and query software — Kanoodle; Microsoft Access; Microsoft Bing; Structured query language SQL	Data base user interface and query software — Data entry software; FileMaker Pro; Microsoft Access; Microsoft Access; Structured query language SQL; Yardi	Data base user interface and query software — FileMaker Pro; IBM Informix; Structured query language SQL; Transact-SQL	Data base user interface and query software — Microsoft Access; Microsoft SQL Server; MySQL; Oracle JDBC; Structured query language SQL	Data base user interface and query software — FileMaker Pro; Microsoft Access ; Structured query language SQL
Data mining software — Google Analytics	Data mining software — Google Analytics	Data mining software — Google Analytics	Data mining software — Google Analytics		
		Desktop publishing software — Microsoft Publisher	Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher	Desktop publishing software — Adobe Systems Adobe InDesign Hot technology ; Adobe Systems Adobe PageMaker	Desktop publishing software — Adobe Systems Adobe Distiller; Adobe Systems Adobe FrameMaker; Adobe Systems Adobe InDesign; Microsoft Publisher; QuarkXPress
Development environment software — Microsoft .NET Framework; Microsoft Visual Studio		Development environment software — Eclipse IDE	Development environment software — Adobe Systems Adobe ActionScript; Apache Maven; C ; Common business oriented language COBOL; Eclipse IDE; IBM Rational Rose; Integrated development environment IDE software; Microsoft .NET Framework; Microsoft PowerShell; Microsoft Visual Basic; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual SourceSafe; Microsoft Visual Studio; Oracle Java 2 Platform Enterprise Edition J2EE; Ruby Hot technology; Subversion	Development environment software — Adobe Systems Adobe ActionScript; Microsoft .NET Framework; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual Studio; Tool command language Tcl	
	Document management software — Open Source Matters Joomla!	Document management software — Adobe Systems Adobe Acrobat	Document management software — Adobe Systems Adobe Acrobat	Document management software — Adobe Systems Adobe Acrobat	Document management software — Adobe Systems Adobe Acrobat
Electronic mail software — Microsoft Outlook	Electronic mail software — Email software; Microsoft Outlook; Yahoo! Email	Electronic mail software — IBM Notes; Microsoft Outlook	Electronic mail software — IBM Notes	Electronic mail software — Email software; Microsoft Exchange	Electronic mail software — IBM Notes

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
<p>Enterprise application integration software — Extensible markup language XML ; IBM InfoSphere DataStage; IBM WebSphere</p> <p>Enterprise resource planning ERP software— NetSuite ERP</p>		<p>Enterprise resource planning ERP software — Microsoft Dynamics; Microsoft Dynamics GP ; NetSuite ERP; Oracle Fusion Applications; Oracle Hyperion; Oracle JD Edwards EnterpriseOne; Oracle PeopleSoft; Oracle PeopleSoft Financials; SAP; SAP Business Objects</p>	<p>Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere</p> <p>Enterprise resource planning ERP software — Microsoft Dynamics; NetSuite ERP; SAP Business Objects</p>	<p>Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere</p> <p>Enterprise resource planning ERP software — Oracle Fusion Applications</p>	<p>Enterprise application integration software — Extensible markup language XML</p>
		<p>Enterprise system management software — IBM Power Systems software</p>	<p>Enterprise system management software — IBM Power Systems software; Splunk Enterprise</p>		
			<p>File versioning software — Apache Subversion SVN; Git</p>		
		<p>Financial analysis software — Delphi Discovery; Delphi Technology</p> <p>Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle</p>	<p>Financial analysis software — Delphi Technology</p> <p>Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle</p>		

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
Graphics or photo imaging software — Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio	Graphics or photo imaging software — Adobe Systems Adobe Photoshop; Microsoft Visio	Graphics or photo imaging software — Adobe Systems Adobe Flash; Microsoft Visio	Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio	Graphics or photo imaging software — Adobe Systems Adobe FreeHand; Adobe Systems Adobe Photoshop; Corel CorelDraw Graphics Suite; Microsoft Visio	Graphics or photo imaging software — Adobe Systems Adobe Flash; Adobe Systems Adobe Photoshop; Corel CorelDraw Graphics Suite; Microsoft Visio
Human resources software — Human resource management software HRMS; Workforce management software					
	Information retrieval or search software — Pinterest	Information retrieval or search software — LexisNexis			
Instant messaging software — Twitter	Instant messaging software — Twitter; WhatsApp				
Internet browser software — Web browser software	Internet browser software — Web browser software	Internet browser software — Web browser software		Internet browser software — Apple Safari; Microsoft Internet Explorer; Mozilla Firefox	Internet browser software — Web browser software
				Internet directory services software — Berkeley Internet Domain Name BIND; Microsoft Active Directory; Microsoft DNS Server	
Inventory management software — Inventory tracking software		Inventory management software — Inventory software			
Mailing and shipping software — Shipment processing software					
			Map creation software — ESRI ArcGIS software; Geographic information system GIS software		

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
<p>Mobile operator specific application software — Mobile application software</p>			<p>Metadata management software — CA Erwin Data Modeler</p>		
					<p>Music or sound editing software — Sony Sound Forge</p>
					<p>Music or sound editing software — Avid Pro Tools</p>
			<p>Network conferencing software — Microsoft Office SharePoint Server MOSS</p>		
			<p>Network monitoring software — Nagios Hot technology ; Wireshark</p>		
			<p>Network security and virtual private network VPN equipment software — Firewall software; Juniper Networks NetScreen-Security Manager</p>		
			<p>Network security or virtual private network VPN management software — CA SiteMinder</p>		
<p>Object or component oriented development software — C#; jQuery; Oracle Java</p>		<p>Object or component oriented development software — Oracle Java</p>		<p>Object or component oriented development software — Advanced business application programming ABAP; Apache Spark; Apple Cocoa; C#; C++; jQuery; Microsoft ActiveX; Microsoft Visual Basic.NET; Microsoft Visual C#.NET; Objective C; Oracle Java; Practical extraction and reporting language Perl; Python; Swift</p>	
				<p>Object or component oriented development software — Embarcadero Delphi; Microsoft ActiveX; Practical extraction and reporting language Perl; Python; Sun Microsystems Java Servlet API</p>	
				<p>Object or component oriented development software — jQuery</p>	

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
			Object oriented data base management software — Hibernate ORM; PostgreSQL	Object oriented data base management software — PostgreSQL	
Office suite software — Microsoft Office	Office suite software — Microsoft Office	Office suite software — Microsoft Office	Office suite software — Microsoft Office	Office suite software — Microsoft Office	Office suite software — Corel WordPerfect Office Suite; Microsoft Office
Operating system software — Linux			Operating system software — Android; Hewlett Packard HP-UX; Job control language JCL; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; Ubuntu; UNIX	Operating system software — Hewlett Packard HP-UX; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; UNIX	
					Optical character reader OCR or scanning software — Nuance OmniPage Professional
Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBoooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow		Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBoooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow			
			Portal server software — Apache HTTP Server	Portal server software — Apache HTTP Server; Vignette Portal	
Presentation software — Microsoft PowerPoint	Presentation software — Microsoft PowerPoint	Presentation software — Microsoft PowerPoint		Presentation software — Microsoft PowerPoint	Presentation software — Apple iWork Keynote; Microsoft PowerPoint
			Program testing software — Hewlett Packard LoadRunner; JUnit		

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
Project management software — Microsoft Project	Project management software — Microsoft Project	Project management software — Microsoft Project; Microsoft SharePoint; Oracle Primavera Enterprise Project Portfolio Management	Project management software — Microsoft SharePoint	Project management software — Microsoft Project; Oracle Primavera Enterprise Project Portfolio Management	
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
			Requirements analysis and system architecture software — Unified modeling language UML		
Sales and marketing software — Google AdWords; Search engine marketing SEM software; Webtrends software	Sales and marketing software — Google AdWords; Marketo Marketing Automation	Sales and marketing software — Google AdWords; Marketo Marketing Automation	Sales and marketing software — Google AdWords; Marketo Marketing Automation	Sales and marketing software — Google AdWords	
Spreadsheet software — Microsoft Excel	Spreadsheet software — Microsoft Excel	Spreadsheet software — Microsoft Excel	Spreadsheet software — Microsoft Excel	Spreadsheet software — Microsoft Excel	Spreadsheet software — Microsoft Excel
				Storage networking software — Storage area network SAN software Switch or router software — Router software; Switch software	
		Transaction security and virus protection software — Symantec	Transaction server software — Customer information control system CICS; Microsoft Internet Information Service IIS	Transaction security and virus protection software — SSL Transaction server software — Customer information control system CICS Hot technology ; Microsoft Internet Information Service IIS	

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
Video creation and editing software — YouTube	Video creation and editing software — YouTube	Video creation and editing software — YouTube	Video creation and editing software — Adobe Systems Adobe AfterEffects; Apple Final Cut Pro; YouTube	Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze	Video creation and editing software — Apple Final Cut Pro; Apple iMovie; MAXON CINEMA 4D; YouTube
Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Content management systems CMS; Facebook; WordPress;	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Facebook; Google Webmaster Tools; LinkedIn; WordPress	Web page creation and editing software — Facebook; LinkedIn	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Facebook	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Microsoft FrontPage; Salesforce Marketing Cloud	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite
Web platform development software — AJAX; Apache Struts; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; LAMP Stack; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor	Web platform development software —AJAX; ASPX; Cascading Style Sheets CSS; Drupa; Hypertext markup language HTML; JavaScript; Majestic SEO; Oracle JavaServer Pages JSP; PHP: Hypertext preprocessor; Screaming Frog SEO Spider; seoClarity; SEOmoz;	Web platform development software — Hypertext markup language HTML	Web platform development software — Adobe Systems Adobe Flex; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS Hot technology; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Ext JS; Extensible HyperText Markup Language XHTML; Extensible stylesheet language transformations XSLT; Google AngularJS; Hypertext markup language HTML; JavaScript; LAMP Stack; Microsoft Active Server Pages ASP; Microsoft ASP.NET; Microsoft Commerce Server; Microsoft Visual InterDev Node.js; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor; Ruby on Rails; Spring Framework; Zend FrameworkRuby on Rails	Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; Joomla; jQuery; Microsoft Active Server Pages ASP; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor	Web platform development software — AJAX ; Drupal Hot technology ; Hypertext markup language HTML ; JavaScript
Word processing software — Microsoft Word	Word processing software — Microsoft Word	Word processing software — Microsoft Word		Word processing software — Microsoft Word	Word processing software — Microsoft Word

OCCUPATIONS RELATED TO E-COMMERCE in O*NET					
ONLINE MERCHANTS (28 Technology Skills)	SEARCH MARKETING STRATEGISTS (21 Technology Skills)	SALES MANAGERS/ RETAIL SALESPERSON (31 Technology Skills)	WEB DEVELOPERS (31 Technology skills)	WEB ADMINISTRATORS (36 Technology skills)	GRAPHIC DESIGNER (20 Technology Skills)
Writing — Communicating effectively in writing as appropriate for the needs of the audience	Writing — Communicating effectively in writing as appropriate for the needs of the audience	Writing — Communicating effectively in writing as appropriate for the needs of the audience	Writing — Communicating effectively in writing as appropriate for the needs of the audience	Writing — Communicating effectively in writing as appropriate for the needs of the audience	Writing — Communicating effectively in writing as appropriate for the needs of the audience

ANNEX IV

Comparison of common skills extracted from ESCO and O*NET databases

	COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS
1	Client/server (programming)
2	PHP programming
3	Web programming
4	E-commerce (systems development)
5	Fireworks (web development program)
6	Flash
7	Graphical user interface system development
8	Linux
9	MySQL (database development)
10	Oracle (database administration)
11	Oracle E-Business Suite
12	OS/2 operating system
13	SASD management and development model
14	TIBCO BusinessConnect
15	UNIX
16	Web application development
17	Windows NT
18	Windows NT Advanced Server
19	Windows XP
20	ACT!
21	ActionScript

	COMMON SKILLS IN AT LEAST TWO O*NET OCCUPATIONS
1	Data base user interface and query software — FileMaker Pro; IBM Informix; Structured query language SQL; Transact-SQL
2	Electronic mail software — IBM Notes
3	Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio
4	Office suite software — Microsoft Office
5	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
6	Spreadsheet software — Microsoft Excel
7	Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze
8	Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Microsoft FrontPage; Salesforce Marketing Cloud
9	Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; Joomla; jQuery; Microsoft Active Server Pages ASP; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor
10	Writing — Communicating effectively in writing as appropriate for the needs of the audience
11	Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau
12	Document management software — Adobe Systems Adobe Acrobat
13	Internet browser software — Web browser software
14	Object or component oriented development software — Advanced business application programming ABAP; Apache Spark; Apple Cocoa; C#; C++; jQuery; Microsoft ActiveX; Microsoft Visual Basic.NET; Microsoft Visual C#.NET; Objective C; Oracle Java; Practical extraction and reporting language Perl; Python; Swift
15	Presentation software — Microsoft PowerPoint
16	Project management software — Microsoft Project; Oracle Primavera Enterprise Project Portfolio Management
17	Sales and marketing software — Google AdWords
18	Word processing software — Microsoft Word
19	Customer relationship management CRM software — Avidian Technologies Prophet; Blackbaud The Raiser's Edge; Eden Sales Manager; HEAT Software GoldMine; Maximizer Software Maximizer Enterprise; NetSuite NetCRM; Oracle Eloqua; Sage ACT!; Salesforce software; Salesforce.com Salesforce CRM; Software on Sailboats Desktop Sales Manager; Vanguard Software Vanguard Sales Manager
20	Data mining software — Google Analytics
21	Desktop publishing software — Adobe Systems Adobe

COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS		COMMON SKILLS IN AT LEAST TWO O*NET OCCUPATIONS	
			InDesign; Microsoft Publisher
22	Adobe Authorware	22	Development environment software — Adobe Systems Adobe ActionScript; Apache Maven; C ; Common business oriented language COBOL; Eclipse IDE; IBM Rational Rose; Integrated development environment IDE software; Microsoft .NET Framework; Microsoft PowerShell; Microsoft Visual Basic; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual SourceSafe; Microsoft Visual Studio; Oracle Java 2 Platform Enterprise Edition J2EE; Ruby Hot technology; Subversion
23	Adobe Bridge	23	Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere
24	Adobe Contribute	24	Enterprise resource planning ERP software — Microsoft Dynamics; NetSuite ERP; SAP Business Objects
25	Adobe Flash Builder	25	Data base management system software — Amazon DynamoDB; Amazon Kinesis; Apache Cassandra; Apache Hadoop; Apache Hive; Apache Pig; Apache Solr; MongoDB; MySQL; NoSQL; Oracle PL/SQL; Relational database management software; Sybase; Teradata Database
26	Ariba	26	Operating system software — Android; Hewlett Packard HP-UX; Job control language JCL; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; Ubuntu; UNIX
27	ASW (business administration system)	27	Accounting software — Sage 50 Accounting; Tax software
28	Bulletin Board System (BBS)	28	Analytical or scientific software — Minitab; SAS; SPSS
29	Business analysis	29	Application server software — Apache Webserver; Microsoft Virtual Server; Oracle Application Server; Oracle WebLogic Server; Red Hat WildFly; VMWare ESX Server
30	Business and accounting systems (teaching)	30	Communications server software — IBM Domino
31	Business development	31	Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD Systems SignCAD
32	Business systems	32	Content workflow software — OpenText Livelink ECM; Vignette Content Management
33	Cascading Style Sheets (CSS)	33	Enterprise system management software — IBM Power Systems software; Splunk Enterprise
34	CICS (Customer Information Control System)	34	Financial analysis software — Delphi Technology
35	Commerce and administration programme (teaching)	35	Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle
36	Developing countries affairs	36	Information retrieval or search software — LexisNexis, Pinterest
37	Development economics	37	Instant messaging software — Twitter; WhatsApp
38	Development of statistical methods	38	Inventory management software — Inventory software
39	Development work	39	Music or sound editing software — Sony Sound Forge
40	Directing (multimedia development programme)	40	Object oriented data base management software — Hibernate ORM; PostgreSQL
41	Dynamic HTML	41	Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow
42	E-commerce (business development)	42	Portal server software — Apache HTTP Server; Vignette Portal

	COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS
43	E-commerce (legal implications)
44	E-commerce (vulnerability analysis)
45	Education development work
46	Electric Image Animation System (EIAS)
47	Electronic commerce (providing training)
48	E-mail (vulnerability analysis)
49	Embarcadero Delphi (development environment)
50	Ethics management and development model
51	Hardware development
52	HTML5
53	Infor Epiphany
54	Infor Orbis Marketing Resource Management (MRM)
55	Integrated services digital network (vulnerability analysis)
56	Interaction design
57	International development (teaching)
58	Internet/intranet (vulnerability analysis)
59	Java-script
60	JSP
61	LANtastic
62	LAN (vulnerability analysis)
63	Leadership development
64	Logic management and development model
65	MacOS
66	Market analysis
67	Minilab (photographic developing and printing)
68	Object-oriented analysis and design (OOAD)
69	Organisational development
70	OS 2200
71	Payment systems
72	PeopleSoft business administration system
73	Performance appraisals (administration)
74	Performance appraisals (methods)
75	Perl programming language
76	PerlScript
77	PL/SQL (database development)
78	Product development
79	Product development (teaching)
80	Rational Unified Process (RUP)
81	Sage CRM Cloud
82	Sage SalesLogix

	COMMON SKILLS IN AT LEAST TWO O*NET OCCUPATIONS
43	Transaction security and virus protection software — SSL
44	Transaction server software — Customer information control system CICS Hot technology ; Microsoft Internet Information Service IIS

COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS	
83	SAP Business All-in-One
84	SAP Business ByDesign
85	SAP Business One
86	SAP ERP
87	SAS (statistics software)
88	Software development
89	Staff development
90	Standard Generalized Markup Language (SGML)
91	Sybase PowerBuilder
92	System design
93	System development (macintosh computers)
94	System development (mainframe computers)
95	System development (PCs)
96	System development (teaching)
97	Systems development
98	System testing
99	Systems integration
100	Systems investigation
101	Test management (data systems)
102	Trade mark development
103	Websphere Process Server
104	Wide area network (vulnerability analysis)
105	Windows 2000
106	Windows 3.x
107	Windows 95/98
108	Windows Me

COLOUR KEY

SKILLS IN ONE OCCUPATION
SKILLS IN TWO OCCUPATION
SKILLS IN THREE OCCUPATION
SKILLS IN FOUR OCCUPATION
SKILLS IN FIVE OCCUPATION
SKILLS IN SIX OCCUPATION

ANNEX V

Skills compiled from ESCO and O*NET databases

ESCO	O*NET	ESCO
COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS	COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS	COMMON SKILLS IN AT LEAST TWO ESCO OCCUPATIONS
Web programming	1 Data base user interface and query software — FileMaker Pro; IBM Informix; Structured query language SQL; Transact-SQL	Graphical user interface system development
E-commerce (systems development)	2 Electronic mail software — IBM Notes	E-mail (vulnerability analysis)
Oracle (database administration)	3 Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio	Fireworks (web development program)
Oracle E-Business Suite	4 Office suite software — Microsoft Office	
OS/2 operating system	5 Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	
SASD management and development model	6 Spreadsheet software — Microsoft Excel	
TIBCO BusinessConnect	7 Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze	Flash
Web application development	8 Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Microsoft FrontPage; Salesforce Marketing Cloud	Adobe Flash Builder
Windows NT	9 Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; Joomla!; jQuery; Microsoft Active Server Pages ASP; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor	PHP programming
Windows NT Advanced Server	10 Writing — Communicating effectively in writing as appropriate for the needs of the audience	Cascading Style Sheets (CSS)
Windows XP	11 Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau	JSP
Adobe Authorware	12 Document management software — Adobe Systems Adobe Acrobat	Perl programming language
Adobe Bridge	13 Internet browser software — Web browser software	PerlScript
Adobe Contribute	14 Object or component oriented development software — Advanced business application programming ABAP; Apache Spark; Apple Cocoa; C#; C++; jQuery; Microsoft ActiveX; Microsoft Visual Basic.NET; Microsoft Visual C#.NET; Objective C; Oracle Java; Practical extraction and reporting language Perl; Python; Swift	
Ariba	15 Presentation software — Microsoft PowerPoint	
ASW (business administration system)	16 Project management software — Microsoft Project; Oracle Primavera Enterprise Project Portfolio Management	

Bulletin Board System (BBS)	17	Sales and marketing software — Google AdWords	ACT!
Business analysis	18	Word processing software — Microsoft Word	
Business and accounting systems (teaching)	19	Customer relationship management CRM software — Avidian Technologies Prophet; Blackbaud The Raiser's Edge; Eden Sales Manager; HEAT Software GoldMine; Maximizer Software Maximizer Enterprise; NetSuite NetCRM; Oracle Eloqua; Sage ACT!; Salesforce software; Salesforce.com Salesforce CRM; Software on Sailboats Desktop Sales Manager; Vanguard Software Vanguard Sales Manager	
Business development	20	Data mining software — Google Analytics	ActionScript
Business systems	21	Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher	
Commerce and administration programme (teaching)	22	Development environment software — Adobe Systems Adobe ActionScript; Apache Maven; C ; Common business oriented language COBOL; Eclipse IDE; IBM Rational Rose; Integrated development environment IDE software; Microsoft .NET Framework; Microsoft PowerShell; Microsoft Visual Basic; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual SourceSafe; Microsoft Visual Studio; Oracle Java 2 Platform Enterprise Edition J2EE; Ruby Hot technology; Subversion	SAP Business All-in-One SAP Business ByDesign SAP Business One SAP ERP
Developing countries affairs	23	Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere	MySQL (database development) PL/SQL (database development)
Development economics	24	Enterprise resource planning ERP software — Microsoft Dynamics; NetSuite ERP; SAP Business Objects	Linux UNIX
Development of statistical methods	25	Data base management system software — Amazon DynamoDB; Amazon Kinesis; Apache Cassandra; Apache Hadoop; Apache Hive; Apache Pig; Apache Solr; MongoDB; MySQL; NoSQL; Oracle PL/SQL; Relational database management software; Sybase; Teradata Database	
Development work	26	Operating system software — Android; Hewlett Packard HP-UX; Job control language JCL; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; Ubuntu; UNIX	SAS (statistics software)
Directing (multimedia development programme)	27	Accounting software — Sage 50 Accounting; Tax software	Client/server (programming)
Dynamic HTML	28	Analytical or scientific software — Minitab; SAS; SPSS	
E-commerce (business development)	29	Application server software — Apache Webserver; Microsoft Virtual Server; Oracle Application Server; Oracle WebLogic Server; Red Hat WildFly; VMWare ESX Server	Interaction design
E-commerce (legal implications)	30	Communications server software — IBM Domino	
E-commerce (vulnerability analysis)	31	Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD Systems SignCAD	
Education development work	32	Content workflow software — OpenText Livelink ECM; Vignette Content Management	Embarcadero Delphi (development environment)
Electric Image Animation System (EIAS)	33	Enterprise system management software — IBM Power Systems software; Splunk Enterprise	
-	34	Financial analysis software — Delphi Technology	

Electronic commerce (providing training)	35	Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle	
Ethics management and development model	36	Information retrieval or search software — LexisNexis, Pinterest	
Hardware development	37	Instant messaging software — Twitter; WhatsApp	
HTML5	38	Inventory management software — Inventory software	
Infor Epiphany	39	Music or sound editing software — Sony Sound Forge	
Infor Orbis Marketing Resource Management (MRM)	40	Object oriented data base management software — Hibernate ORM; PostgreSQL	
Integrated services digital network (vulnerability analysis)	41	Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow	
International development (teaching)	42	Portal server software — Apache HTTP Server; Vignette Portal	
Internet/intranet (vulnerability analysis)	43	Transaction security and virus protection software — SSL	
Java-script	44	Transaction server software — Customer information control system CICS Hot technology ; Microsoft Internet Information Service IIS	Payment systems
LANtastic			CICS (Customer Information Control System)
LAN (vulnerability analysis)			
Leadership development			
Logic management and development model			
MacOS			
Market analysis			
Minilab (photographic developing and printing)			
Object-oriented analysis and design (OOAD)			
Organisational development			
OS 2200			
PeopleSoft business administration system			
Performance appraisals (administration)			
Performance appraisals (methods)			
Product development			
Product development (teaching)			

Rational Unified Process (RUP)
Sage CRM Cloud
Sage SalesLogix
Software development
Staff development
Standard Generalized Markup Language (SGML)
Sybase PowerBuilder
System design
System development (macintosh computers)
System development (mainframe computers)
System development (PCs)
System development (teaching)
Systems development
System testing
Systems integration
Systems investigation
Test management (data systems)
Trade mark development
WebSphere Process Server
Wide area network (vulnerability analysis)
Windows 2000
Windows 3.x
Windows 95/98
Windows Me

ANNEX VI

Alignment GAPS with knowledge and skills for sales e-commerce manager of the furniture sector

	GAPS	KNOWLEDGE	SKILLS	COMMONS	
LEVEL A	PRODUCT INFORMATION	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.	Computer aided design CAD software — Autodesk AutoCAD; Autodesk AutoCAD Civil 3D; Autodesk Revit; Bentley MicroStation; Computer aided design and drafting CADD software; Computer aided design and drafting software CADD; Dassault Systemes CATIA; PTC Creo Parametric; SignCAD Systems SignCAD		
			Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher		
			Directing (multimedia development programme)		
		Communications and Media — Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.	Electric Image Animation System (EIAS)		
			Graphics or photo imaging software — Adobe Systems Adobe Creative Cloud; Adobe Systems Adobe Fireworks; Adobe Systems Adobe Photoshop; Microsoft Visio		
			Infor Orbis Marketing Resource Management (MRM)		
			Interaction design		
			Music or sound editing software — Sony Sound Forge		
			Product development		
	Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.	Object-oriented analysis and design (OOAD)			
		Sage SalesLogix			
		Sales and marketing software — Google AdWords			
		Video creation and editing software — Adobe Systems Adobe Director; Sorenson Media Sorenson Squeeze			
		Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Facebook; Google Webmaster Tools; LinkedIn; Microsoft FrontPage; Salesforce Marketing Cloud; WordPress			
		Client/server (programming)			
		CICS (Customer Information Control System)			
		BUILD TRUST	Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.	Customer relationship management CRM software — Avidian Technologies Prophet; Blackbaud The Raiser's Edge; Eden Sales Manager; HEAT Software GoldMine; Maximizer Software Maximizer Enterprise; NetSuite NetCRM; Oracle Eloqua; Sage ACT!; Salesforce software; Salesforce.com Salesforce CRM; Software on Sailboats Desktop Sales Manager; Vanguard Software Vanguard Sales Manager	
				Data base user interface and query software — Client information databases; FileMaker Pro; IBM Informix; Microsoft Access; Structured query language SQL; Transact-SQL	
Electronic mail software — IBM Notes					
E-mail (vulnerability analysis)					
Instant messaging software — Twitter; WhatsApp					
Payment systems					
Point of sale POS software — CCBill; e-check software; Google Checkout; Intuit QuickBoooks Payments; Magento Analytics; MyCommerce RegNow; PayPal; ProPay; Snorasson Holdings CCNow					
Sage CRM Cloud					
Trade mark development					
Transaction security and virus protection software — SSL					
Transaction server software — Customer information control system CICS; Microsoft Internet Information Service IIS					

	GAPS	KNOWLEDGE	SKILLS	COMMONS
LEVEL B	FACILITIES FOR PRODUCT SELECTION	Search tools — Knowledge in search tools on web pages for product localization.	Data base management system software — Amazon DynamoDB; Amazon Kinesis; Apache Cassandra; Apache Hadoop; Apache Hive; Apache Pig; Apache Solr; MongoDB; MySQL; NoSQL; Oracle PL/SQL; Relational database management software; Sybase; Teradata Database	
			Data mining software — Google Analytics	
			Document management software — Adobe Systems Adobe Acrobat	
			Internet browser software — Web browser software	
			Information retrieval or search software — LexisNexis	

	GAPS	KNOWLEDGE	SKILLS	COMMONS
LEVEL C	WEBSITE USABILITY	Usability — Knowledge of methods for improving ease-of-use of the web during the design process.	ACT!	
			Ariba	
			Development environment software — Adobe Systems Adobe ActionScript; Apache Maven; C ; Common business oriented language COBOL; Eclipse IDE; IBM Rational Rose; Integrated development environment IDE software; Microsoft .NET Framework; Microsoft PowerShell; Microsoft Visual Basic; Microsoft Visual Basic Scripting Edition VBScript; Microsoft Visual SourceSafe; Microsoft Visual Studio; Oracle Java 2 Platform Enterprise Edition J2EE; Ruby Hot technology; Subversion	
			Dynamic HTML	
			E-commerce (systems development)	
			Enterprise application integration software — Common gateway interface CGI; Extensible markup language XML; Extensible stylesheet language XSL; IBM WebSphere	
			Graphical user interface system development	
			HTML5	
			Java-script	
			Object or component oriented development software — Advanced business application programming ABAP; Apache Spark; Apple Cocoa; C#; C++; jQuery; Microsoft ActiveX; Microsoft Visual Basic.NET; Microsoft Visual C#.NET; Objective C; Oracle Java; Practical extraction and reporting language Perl; Python; Swift	
			Operating system software — Android; Hewlett Packard HP-UX; Job control language JCL; KornShell; Linux; Microsoft Windows; Oracle Solaris; Red Hat Enterprise Linux; Ubuntu; UNIX	
			PHP programming	
			Project management software — Microsoft Project; Oracle Primavera Enterprise Project Portfolio Management	
Web application development				

			Web page creation and editing software — Adobe Systems Adobe Dreamweaver; Adobe Systems Adobe Flash Player; Adobe Systems Adobe Macromedia HomeSite; Microsoft FrontPage; Salesforce Marketing Cloud		
			Web platform development software — Adobe Systems Adobe ColdFusion; Adobe Systems Adobe Shockwave Player; AJAX; Apache Struts; Apache Tomcat; Cascading Style Sheets CSS; Drupal; Dynamic hypertext markup language DHTML; Enterprise JavaBeans; Extensible HyperText Markup Language XHTML; Hypertext markup language HTML; JavaScript; Joomla; jQuery; Microsoft Active Server Pages ASP; Oracle JavaServer Pages JSP; PHP: Hypertext Preprocessor		
			Web programming		
	MARKETING TOOLS	Sales and Marketing — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.		Business intelligence and data analysis software — IBM Cognos Impromptu; MicroStrategy; Oracle Business Intelligence Enterprise Edition; Qlik Tech QlikView; Tableau	
				Customer relationship management CRM software — Blackbaud The Raiser's Edge; Constant Contact; MarketSharp; Oracle Eloqua; Oracle Siebel Server Sync; QAD Marketing Automation; Sage SalesLogix; Salesforce software; Salesforce.com Salesforce CRM	
				Desktop publishing software — Adobe Systems Adobe InDesign; Microsoft Publisher	
				Infor Epiphany	
				Infor Orbis Marketing Resource Management (MRM)	
	INTERNATIONAL IZATION	English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.		Sales and marketing software — Google AdWords; Marketo Marketing Automation	
				Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	
			Writing — Communicating effectively in writing as appropriate for the needs of the audience		
		Foreign language software — AceTools.biz Ace Translator; Adapt It; Smart Link Corporation ImTranslator; Stormdance CatsCradle			

COLOUR KEY

SKILLS	COMMONS
SKILLS ESCO	SKILLS IN ONE OCCUPATION
SKILL O*NET	SKILLS IN TWO OCCUPATION
	SKILLS IN THREE OCCUPATION
	SKILLS IN FOUR OCCUPATION
	SKILLS IN FIVE OCCUPATION
	SKILLS IN SIX OCCUPATION