Future competences pathways
for marketing and ICT education (FuseIT)

A3: Guidelines for Digital Marketing competences integration in ICT related subjects

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CONTENTS

INTRODUCTION

"*The European Union needs to ensure that the knowledge, skills, competence and creativity of the European workforce - especially its ICT practitioners - meet the highest global professional standard and are constantly updated in a process of effective lifelong learning*." - Michel Catinat, Head of Unit, ICT for Competitiveness and Industrial Innovation, DG Enterprise and Industry, European Commission, 2015.

Bearing in mind that the significant shortage of professionals in information and communications technology (ICT) in the European Union (EU) creates a bottleneck for economic growth, European citizens do not have basic digital skills, the European Commission (EC) executes initiatives, like new skills agenda, The Digital Skills and Jobs Coalition, awareness raising campaigns and etc. The aim of those initiatives is attracting and retaining digital talent, promote modernize education and training to provide all students and teachers with the opportunity to use digital tools and materials, to develop and upgrade their digital skills, raise awareness about the importance of digital skills for employability, competitiveness and etc. New skills agenda for Europe states „Formal education and training should equip everyone with a broad range of skills which opens doors to personal fulfillment and development, social inclusion, active citizenship and employment. These include literacy, numeracy, science and foreign languages, as well as transversal skills and key competences such as digital competences, entrepreneurship, critical thinking, problem solving or learning to learn, and financial literacy." Marketing is open-ended discipline which does not have to be solely based on just the one subject. The nature of marketing allows students to develop marketing skills in the context of another subject, such as Consumer Behavior, Microeconomics, Copywriting, Big Data Analysis, WEB developing and etc. This course will be implemented by the participating universities in different study programs. The versatility of skills gained studying marketing determines wide professional career path: it offers work in many fields and diverse career choice. Having marketing skills there is the potential for a year in industry, which allows an invaluable period of experience in real-life marketing roles and facilitates personal lifelong learning activities. Having on mind fact that marketing area attracts the most foreign overseas students to universities (the figure is more than double than that of engineering & technology, the next highest subject group according Complete University Guide Ltd. 2007–17) it could serve as proper platform for increasing the attractiveness of ICT studies.

Fuse IT (Future competences pathways for marketing and ICT education) project addresses the education and labor market requirements for professional skills and knowledge for students and graduates in university (including life-long learning activities). The project will analyze, design, develop and implement an up-to-date curriculum, e-learning materials, blended learning environment, ICT knowledge and skills self-evaluation and knowledge evaluation system simulations. The main intellectual outputs are related to marketing and future competencies and they will include:

1. Guidelines and study analysis in HE;
2. Curriculum development and localization;
3. E-learning material in separate parts for different subjects;
4. Simulations for education;
5. Self-evaluation and knowledge evaluation system;
6. Methodological guidelines

There are 2 level of beneficiaries which will be impacted by the project. The primary target group includes:

1. Students at university;
2. Educators, university staff, adult education centers etc.
3. Business sector

This target group will benefit from the project by participating in training and knowledge evaluation, which will improve their knowledge and competencies in the labor market. Educators and university staff are responsible for skills upgrade and raising of qualification. The secondary target group are universities which could use project results and implement updated marketing study program and/or implement separate parts of marketing in ICT studies. How to implement project results and other useful information will be described in the Methodological guidelines for implementation for implementation marketing module.

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1. RESEARCH GOALS AND ACTIVITIES OF IO1

The main goals of IO1 are to develop major requirements for building the Fuse IT program by using the IO1 results for target groups' DMC (Digital Marketing Competence) needs on a base of EU labour market, existing experience of partners best practices in marketing and ICT. ICT are essential skills for future workplaces (The use of ICT has increased significantly in the last five years in more than 90% of workplaces), but advanced users like technicians, professionals (both 50%) and managers (30%) are required to have specialist digital skills, especially in larger workplaces. This study will also identify the skills gap in the Digital Marketing area in Lithuania, Latvia, Portugal and Romania. The training needs will then be becoming apparent and become a base for creating learning and certification solutions in the following activities of the project.

For those purposes there is the plan:

- **Prepare recommendations** about which competencies are required for target group being well prepared, self-confident and competitive in the digital market. This will be done after analysis of existing programs and curricula at project targeted DMC (Digital Marketing Competences) available at EU partner organizations and comparing with Digital Competence Frameworks such as The Digital Competence Framework for Consumers and The Digital Competence Framework for Citizens 2.1 (1.1);
- **Prepare study analysis** of future digital marketing competences. This will be done by performing surveys and interviews: at least 50 marketing and ICT students interviewing through each HEI, marketing specialists interviewing, at least 10 through each HEI; DC training centres representatives interviewing, minimum 5 per participate country.
- **Prepare guidelines** how Digital Marketing competences could be integrated in ICT related subjects. This will be done by using target group' surveys and interviews results.

The outcomes of the IO1 will be used for building effective DMC training module based on mentoring of DMC needs. All project partners take active roles in delivering these results. As the leading partner, the VU is responsible for the smooth and efficient management of IO1 and selection of partners' institution on the leading role in special task of IO1.

The goal of IO1 A3 - prepare recommendations about which competencies are required for the competence consumers need to function actively, safely and assertively in the digital marketplace.

Results of IO1 will be free available and could be easy integrated in other countries' universities or training organisations.

2. JUSTIFICATION OF THE GUIDELINES

Preparation of the guidelines is 3ʳᵈ stage of Projects intellectual output No1. The suggestions provided in this document generated using analysed data collected by implementing previous stages of IO1.

IO1 A1 - analysis and report on the existing programs and curricula at project targeted DMC available at EU partner organizations and comparing with Digital Competence Frameworks EU partner organizations allows us to state that:

- Vilnius university (Vilniaus universitetas, VU), Lithuania is the only one among the Project Partners institutions which implements study programmes related with marketing field. 3 out of 4 study programmes are Master studies level's and holds Master`s Degree in Business Management. All 4 analysed study programmes belong to Business and Public Administration study field. 3 out of 4 study programmes are taught in English (and one in Lithuanian). The typical workload of curriculum (module) is 5 ECTS.
- In the rest of analysed academic institutions there is range of additional study curricula's dedicated to marketing field and integrated to different study programmes.
- Polytechnic Institute of Tomar (Instituto Politecnico de Tomar, IPT), Portugal realises 9 study modules related with marketing study field. 7 out of 9 analysed modules belongs to Bachelor Studies programmes (2 to Master Studies programmes and 1 to Post Graduate studies). All modules are taught in Portuguese and English. The workload of 5 out of 7 modules is 5 ECTS and rest 4 ECTS. 5 out of 9 modules is realised in Social Sciences study programmes, 3 in Technology Sciences.
- In ISMA University (Informacijas sistemu menedzmenta augstskola, SIA), Latvia, 10 out of 11 analysed study modules are from Professional Bachelor in Management study level which workload is the same- 3ECTS. One module is from Professional Master study field of Business Administration and carries workload of 6 ECTS. All modules are taught in Latvian and English. 4 modules are directly related with IT field (Back-end-programming; Graphic Web Design; Front-end programming; Digital Application Planning and Prototyping).
- In University Politehnica of Bucharest (Universitatea politehnica din Bucuresti, UPB), Romania, module "Marketing" is implemented in 15 faculties departments with minor adjustments to the objectives of particular study programme (in subject/ modules name and volume in ECTS). All modules are taught in national (Romanian) language. The workload of module is 4 ECTS

IO1 A2 - Study analysis of future digital marketing competences survey's results allows us to state that according to respondents most necessary competences to digital marketing specialist is related with strategic and basic aspects of marketing discipline (see Table1) (TOP 5 competences e.g. Understanding of customer personas and their needs; Strong communication; Digital Strategy; Strategic creativity; Customer Engagement, Customer loyalty, retention, and satisfaction campaigns design and execution) and competences related with digital field of marketing (Web Experience Management; Business Intelligence; Targeting & Optimization; Usability / Design)

Table 1. Ranking of competences necessary for digital marketing specialist

competences necessary for digital marketing specialist	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Understanding of customer personas and their needs	11	19	80	111	128	6	980
Strong communication	12	19	73	123	120	8	966
Digital Strategy	9	27	85	130	100	4	951
Strategic creativity	11	27	90	126	92	9	909
Customer Engagement	12	34	84	126	91	8	896
Customer loyalty, retention, and satisfaction campaigns design and execution	15	31	79	122	98	10	887
Web Experience Management	11	29	102	135	72	6	882

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competences necessary for digital marketing specialist	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Bussiness Intelligence	**13**	**39**	**82**	**123**	**90**	**8**	**880**
Targeting & Optimization	**13**	**31**	**99**	**109**	**91**	**12**	**868**
Usability / Design	**10**	**33**	**118**	**122**	**66**	**6**	**859**
User Acquisition	16	37	97	122	76	7	837
Competitive Intelligence	17	43	85	114	87	9	835
Crisis management in social networks	19	39	85	111	91	10	830
Intellectual property positioning and protection	14	44	97	120	72	8	830
Sustainable Growth marketing Strategies	21	34	70	130	87	13	828
Data Science & Big Data	16	44	84	122	77	12	822
Data modeling and evaluation	17	38	100	121	69	10	809
Programmatic Advertising	15	49	101	116	67	7	807
Cyber cecurity	18	55	94	95	87	6	804
Web Analytics & A/B Testing	19	42	88	113	79	14	797
Growth Hacking (Growth Marketing)	20	42	78	131	71	13	795
Customer Experience UX	19	44	93	100	84	15	790
Predictive Analysis & Attribution	22	28	103	111	76	15	783
Leadership	18	44	98	108	69	18	768
Expert storyteller	16	51	110	98	65	15	761
Retargeting	14	46	113	111	52	19	757
Web Development - Custom	22	54	101	105	68	5	755
Probability and statistics	20	56	113	106	51	9	724
Computer science fundamentals and programming	26	60	113	96	55	5	690
Blockchain marketing use cases	31	44	105	104	50	21	642
Software engineering and system design	42	69	89	89	58	8	578

The analysis of professional skills necessary for digital marketing specialist (see Table 2) allows to state that most necessary are skills related with ICT tools directly designed for marketing purposes (Social Media Marketing; Digital Analytics; Mobile Marketing; CRM; Search Engine Marketing (SEM); Search Engine Optimization (SEO);

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and ICT education

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Building and managing customer experience teams; Video Marketing; Email Marketing). The only exception is related with skills of *Excel* usage.

Table 2. Ranking of professional skills necessary for digital marketing specialist

professional skills necessary for digital marketing specialist	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Social Media Marketing (*Facebook Ads, Twitter Ads, LinkedIn Ads, Hootsuite, Instagram, Youtube*)	16	18	54	107	149	11	979
Digital Analytics (*Google Analytics, Adobe Analytics, Optimize*l)	15	26	65	109	132	8	951
Mobile Marketing	15	20	62	129	118	11	943
CRM	16	21	65	122	117	14	921
Excel	10	39	78	118	102	8	917
Search Engine Marketing (SEM) (*Google AdWords, Bing Ads*)	18	34	51	126	115	11	902
Search Engine Optimization (SEO) (*Moz, Ahrefs, SEM Rush, Google Search Console*)	16	31	77	112	110	9	897
Building and managing customer experience teams	13	39	63	129	96	15	884
Video Marketing	18	29	77	117	105	9	882
Email Marketing (*Mailchimp, Constant Contact, AWeber*)	18	37	78	106	108	8	871
Content Marketing (WordPress, Yoast SEO plug-in)	20	36	74	112	106	7	864
Geo-Targeting PPC	15	33	75	112	99	21	855
Affiliate Marketing (CJ by Conversant, Impact Radius)	17	44	70	97	108	19	839
Paid Search Marketing	19	32	81	116	93	14	838
Marketing and Sales Automation (Marketo, Pardot, Bronto)	16	41	72	107	96	23	826
Video editing	17	53	94	102	81	8	803

professional skills necessary for digital marketing specialist	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Conversion Rate Optimization (CRO) (Optimizely, Google Tag Manager, Craft)	20	33	66	123	87	26	802
Webdevelopment - Content Management Systems	23	49	81	107	86	9	784
Project Management (JIRA, Basecamp, Timeforce, Trello)	22	44	80	99	90	20	773
Web Development (WordPress, Magento, Joomla, Drupal)	22	61	83	95	82	12	752
Applying Cyber security solutions software	27	51	74	97	84	22	718
Tableau	15	37	91	86	69	57	693
Applying machine learning algorithms and libraries	33	41	75	100	81	25	683
SQL, Database administration	32	62	74	85	83	19	669
Python, PHP, .NET, Java or other backend programming technologies	35	64	74	86	76	20	634

Analysis of professional positions which requires digital marketing competences and professional skills and which could be treated as primary target group of learning material implementation conditionally possible to divide into three groups regarding types of professional activities: specialists (Social media specialists; E.marketing information specialists; Internet research specialists; E.marketing web designers), managers (Internet marketing content managers; E. marketing project managers; Marketing Metrics Managers; Social media development administrators), analytics (Expert in Web Analytics/Data Analytics; Experts in Business Intelligence; Market analytic) (Table 3).

Table 3. Ranking of positions necessary for digital marketing competences and professional skills

positions	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Social media specialist	**13**	**35**	**90**	**118**	**92**	**7**	**885**
E.marketing information specialist	**15**	**30**	**84**	**127**	**87**	**12**	**867**
Market analytic	**14**	**34**	**79**	**132**	**82**	**14**	**860**
Internet research specialist	**15**	**32**	**90**	**129**	**79**	**10**	**855**

positions	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
Internet marketing content manager	**20**	**32**	**78**	**122**	**94**	**9**	**850**
E. marketing project manager	**20**	**30**	**71**	**130**	**92**	**12**	**850**
Marketing Metrics Manager	**18**	**31**	**67**	**138**	**85**	**16**	**847**
Expert in Web Analytics/Data Analytics	**21**	**35**	**78**	**119**	**91**	**11**	**828**
Expert in Business Intelligence	**18**	**34**	**79**	**132**	**75**	**17**	**816**
E.marketing web designer	**19**	**32**	**98**	**123**	**73**	**10**	**813**
Social media development administrator	**21**	**31**	**94**	**122**	**78**	**9**	**813**
Brand manager	21	34	76	120	83	21	794
Product manager	19	39	99	124	63	11	785
Martech specialist	16	38	76	102	82	41	760
System analytic	27	47	85	102	75	19	715
PPC manager	20	37	81	111	53	53	664
IS quality assurance specialist	31	53	83	112	54	22	647
IS designer	36	51	95	89	61	23	608

Analysis of business entities/types of organization which would be possible to treat as stakeholders for learning material development and implementation conditionally possible to divide into two groups: traditional business activities which adapts digital marketing solutions (E.sales and marketing departments (in business companies) Advertising agencies Market analytic service companies) and businesses based on digital marketing (E.marketing and internet communication companies; Media and technology companies; International internet content organizations) (Table 4).

Table 4. Ranking of business entities/types of organization which requires for digital marketing competences and professional skills

business entities/types of organization	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
E.sales and marketing department	**15**	**41**	**81**	**104**	**107**	**7**	**883**
E.marketing and internet communication companies	**14**	**46**	**78**	**105**	**104**	**8**	**877**
Advertising agencies	**17**	**44**	**80**	**99**	**106**	**9**	**857**
Media and technology companies	**15**	**46**	**83**	**110**	**93**	**8**	**854**

business entities/types of organization	useless	foundation	intermediate	advanced	highly specialised	I dont know	points
International internet content organizations	**17**	**39**	**87**	**106**	**96**	**10**	**847**
Market analytic service companies	**22**	**37**	**87**	**93**	**107**	**9**	**830**
Start-Ups	17	53	95	106	71	13	777
(Traditional) Business companies	17	56	112	106	55	9	750
Public and government bodies	23	58	108	93	62	11	709
Science and study sector	23	56	108	95	61	12	709

Based on presented information based on performed researches, collected information and made insights Project group developed recommendations for projects curriculum development and localization.

3. RCOMENDATIONS FOR CURRICULUM DEVELOPMENT AND LOCALIZATION

Marketing is open-ended discipline which does not have to be solely based on just the one subject. The nature of marketing allows students to develop marketing skills in the context of another subject, such as Consumer Behaviour, Microeconomics, Copywriting, Big Data Analysis, WEB developing and etc. Designed course should be implemented by the participating universities in different study programs. The versatility of skills gained studying marketing determines wide professional career path: it offers work in many fields and diverse career choice. Having marketing skills there is the potential for a year in industry, which allows an invaluable period of experience in real-life marketing roles and facilitates personal lifelong learning activities.

After necessary information and data collection Project Team for Curriculum development and localization, e-learning material development and recommends:

-Workload of created module 4-5 ECTS;

-Language of module English (national language- as added option);

-Level of developed competences: Advanced-Highly Specialised (levels 5-8 regarding The Digital Competence Framework for Citizens 2.1)

-**Focus on current competences** necessary for digital marketing specialist, which technically possible to divide into 2 main groups (basic marketing competences; digital marketing competences):

Table 5. Recommended competences for development necessary for digital marketing specialist

Competences to develop necessary for digital marketing specialist	Group of competences
Understanding of customer personas and their needs	Basics marketing competences
Strong communication	
Strategic creativity	
Customer loyalty, retention, and satisfaction campaigns design and execution	
Customer Engagement	
Digital Strategy	Digital marketing competences
Web Experience Management	
Bussiness Intelligence	
Targeting & Optimization	
Usability / Design	

- **Focus on current professional skills** necessary for digital marketing specialist which conditionally possible to divide into two groups: professional skills adapted to digital marketing needs and professional skills created to digital marketing needs (see Table 6)

Table 6. Recommended professional skills for development necessary for digital marketing specialist

Professional skills to develop necessary for digital marketing specialist	Group of professional skills
Excel	Professional skills adapted to digital marketing needs
CRM	
Building and managing customer experience teams	
Social Media Marketing	Professional skills created to digital marketing needs
Digital Analytics	
Mobile Marketing	
Search Engine Marketing (SEM)	
Search Engine Optimization (SEO)	
Video Marketing	
Email Marketing	

- **Recommended target group of learning material implementation** which conditionally possible to divide into three groups regarding types of professional activities: specialists, managers, analytics (Table 7).

Table 7. Recommended target groups of learning material implementation

Professional positions	Type of activity (functions)
Social media specialist	Field specialist
E.marketing information specialist	
Internet research specialist	
E.marketing web designer	
Social media development administrator	Management
Internet marketing content manager	
E. marketing project manager	
Marketing Metrics Manager	
Expert in Web Analytics/Data Analytics	Analytics
Expert in Business Intelligence	
Market analytic	

- **Recommended types of stakeholders for learning material development and implementation** conditionally possible to divide into two groups: traditional business activities which adapts digital marketing solutions; businesses based on digital marketing (Table 8)

Table 8. Recommended target groups of learning material implementation

Stakeholders	Types of skakeholder
E.sales and marketing department (in business companies)	Traditional business activities which adapts digital marketing solutions
Advertising agencies	
Market analytic service companies	
E.marketing and internet communication companies	Businesses based on digital marketing
Media and technology companies	
International internet content organizations	

Provided recommendations will be used for learning material design (building DMC training module), Projects activities related with IO2.