e-Leadership Skills for Small and Medium Sized Enterprises

Country Report Croatia
A Snapshot and Scoreboard of e-Leadership Skills in Policy, Higher Education and the Labour Market

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About this document
This document is a Country Report produced in the course of the service contract “e-Leadership Skills for Small and Medium Sized Enterprises”, or short “LEAD”. Services DG Internal Market, Industry, Entrepreneurship and SMEs – Unit H/3 - Key Enabling Technologies and Digital Economy, Tender No. 288/PP/ENT/CIP/13/C/N01C012

About LEAD
LEAD develops targeted actions for start-ups and fast growing SMEs to provide them with relevant e-leadership skills and qualifications for entrepreneurs, managers and advanced ICT users that are recognized trans-nationally.

The LEAD consortium includes the partners: empirica, INSEAD, IE Business School, Henley Business School, Aarhus University, New Bulgarian University, Antwerp Management School, European Foundation for Management Development (EFMD), IDC Europe, PIN-SME and CIONET.

LEAD analyses the role of e-leaders in SMEs and entrepreneurial firms based on engagement with SMEs to gain insights into what kinds of leaders SMEs rely on to ensure they can use ICT to develop, grow and compete, how SMEs use ICT to develop, grow and compete and what kind of e-leadership skills they need to succeed.

This work represents an important step forward towards helping business schools and SMEs collaborate and develop insights and a common language for SMEs to access and foster leaders who are both business and ICT-savvy (“e-leaders”) and who ensure SMEs use ICT effectively. It is laying the groundwork for the planning of targeted educational offers for SMEs and entrepreneurs by business schools and universities, which will be demonstrated within the project duration.

LEAD also engages with other stakeholder groups from education and the labour market, associations representing SMEs, start-ups and gazelles and others to take into account the target groups evolving requirements for e-leadership.

LEAD aims to sharpen the e-leadership definitions and metrics, specify data requirements for establishing monitoring mechanisms which can be used as a basis for policy making and to improve monitoring of demand and supply of these skills. Technology trends are analysed to understand their impact on new business models and organisation of companies and their e-leadership requirements. An overview of the present European e-leadership policy landscape for the different target groups is developed as well as an overview of the present European landscape of e-Leadership courses and MOOCs. In addition a search and analysis of initiatives from industry, education and training organisations is carried out.

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1 e-Leadership Scoreboard

The scoreboard offers an approach to monitoring and assessing issues related to e-leadership skills development, such as: education offers, workforce potential, exploitation opportunities, and enabling policies or other driving mechanisms. It compares European Member States, allowing for a comparative assessment of e-leadership performance of Member states. Doing so, it showcases relative strengths and weaknesses of national e-leadership ecosystems, thus informing and enabling policy discussions.

The e-leadership scoreboard comprises four levels: 24 indicators, 7 building blocks, 4 dimensions to be further aggregated to one overall e-leadership Index (eLI).

The “e-leadership skills” dimension consists of one building block, “Education and Training”. This building block aims to capture e-leadership education and training through four indicators: The number of Master's/Exec Education level programmes with a mix of ICT & business (per population), the number of e-leadership candidate programmes (per population), the share of enterprises that provided training to ICT/IT specialists and quality of management schools.

In the second dimension, “e-leadership workforce potential”, the e-Leadership Skilled Professionals and e-Leadership Pipeline building blocks aim to gauge the extent of e-skills/ICT practitioners and e-leadership in the workforce. The expectation is that e-leadership competences, as defined in the context of this study, prevail in or recruit from e-leadership ecosystems, thus informing and enabling e-leadership performance of Member states. Doing so, it showcases relative strengths and weaknesses of national e-leadership ecosystems, thus informing and enabling policy discussions.

Overall this dimension of the scoreboard looks to offer a proxy for the potential estimates of e-leaders in each country. A third dimension is entitled “e-leadership skills exploitation” and attempts to assess the friendliness of a country’s business framework and extent of its preparedness in exploiting opportunities provided by ICT. It contains three building blocks capturing aspects from Business Environment, Innovation Opportunities and Technology Trends in each country. The fourth dimension: “e-leadership skills promoters” rests on the proposition that countries with efficient enabling mechanisms (policies,
initiatives, etc.) are well positioned to produce the right mix of e-leadership skills in line with the dynamics of the job market demand and talent requirement. This dimension is composed of one building block which looks to capture insights on available programmes and initiatives focusing on e-leadership education and training targeting large companies as well as those targeting digital entrepreneurs and high-growth SMEs (gazelles).
Public initiatives supporting innovation are largely centralised on the national level, with the main actors being the Ministry of Entrepreneurship and Crafts, the Business Innovation Croatian Agency (BICRO), HAMAG Invest, the Ministry of Maritime Affairs, Transport and Infrastructure and the Ministry for Public Administration. In addition to these government institutions, each of the 21 Croatian counties has its own Regional Development Agency. A part of the Croatian initiatives around development of digital entrepreneurship is supported by the European Structural Funds.

Substantial efforts have been invested into improving the infrastructure for e-business and digital entrepreneurship. The Strategy for Broadband Development in the Republic of Croatia for 2012 – 2015 and related Action Plan aims to foster the deployment of broadband connectivity in Croatia, thereby creating the preconditions for services and applications requiring high access speed, as a basis for further development of information society and knowledge based society.

The Strategy for Education, Science and Technology is the key policy document on the development of the education system in the Republic of Croatia. It represents the basis for planning of Operational Programmes (OP) financed from EU funds. In the chapter on adult education, one of the three strategic objectives of the Republic of Croatia is the improvement and expansion of learning, education, training and development in the workplace. As one of the measures the strategy explicitly encourages the development of specific programmes of education, training and development for SMEs, for existing and potential entrepreneurs, through calls to offer programmes based on agreed competencies and learning outcomes.

Both the OP Efficient Human Resources 2014 – 2020 and the Strategy for Digital Growth connected to the OP Regional Development 2014 – 2020 are of major importance for the topic under review, as they outline the diverse measures with which Croatia will provide support to its SMEs. The OP Efficient Human Resources 2014-2020 has a total volume of EUR 1.85, billion EUR 1.6 billion of which come from the EU
budget. The planned investments cover four main areas. About one third of available funds are earmarked for measures to support access to sustainable and quality employment for job-seekers and inactive persons. Around 28% of the budget will be invested to improve the match between the skills of the workforce and labour market demand. The national systems for tertiary education, vocational education and lifelong learning will all be subject of major investments. In view of tackling the high risk of poverty and social exclusion rate in the country, investments will support the provision of high-quality social services, adapted to the specific needs of targeted population and areas. This area also covers investments in social entrepreneurship. Finally, a range of measures will target national reform of the public administration, including abolishment of unnecessary procedures inhibiting start-ups, developing the e-administration, and fighting corruption.

The Business Innovation Croatian Agency (BICRO), established in 2010 through a merger between the former Croatian Institute of Technology (HIT) and the Business Innovation Centre (BICRO), is the key governmental organisation in charge of promoting innovation throughout the business sector. BICRO both develops and coordinates national policy measures related to innovation on one hand, and the necessary financial instruments on the other, with the ultimate aim of motivating the private and public sector to raise the levels of investment in R&D. BICRO also has a role in developing and maintaining educational, advisory and networking activities between private and public R&D sector actors, especially related to attraction of investment and successful commercialisation of innovation. Main priorities of the Agency include transfer of knowledge and technology from science to business; and boosting new business start-ups based on knowledge and advanced technology.

Development of entrepreneurship has been a policy priority in recent years. In 2012, the Ministry of Entrepreneurship and Crafts introduced Entrepreneurial Impulse, the "Plan for Supporting Entrepreneurship". The focus of Entrepreneurial impulse has so far been mainly on creating a favourable business climate and stimulating innovation and internationalization in order to increase the added value created in the small business sector. A number of measures seek to strengthen the capacity of entrepreneurs to successfully cope with increased competition, for example via cooperative entrepreneurship and the establishment of enterprise clusters.

The Plan was the further developed into the Entrepreneurship Development Strategy for Republic of Croatia 2013-20201, which was adopted by the Croatian Parliament in October 2013. The overall objective of the Strategy is to increase the competitiveness of SMEs in the country, a goal which is reflected in the target to increase the gross value added per employee of SMEs by 40% until 2020; and to raise the share of SMEs in GDP from 51.6% in 2013 to 62%. The strategy makes explicit reference to activities for enhancing entrepreneurial skills. A substantial share of the funds to be received from the European Regional Development Fund over the period 2014-2020 will be devoted to meeting the targets of the Entrepreneurship Development Strategy.

Already in 2010, the government launched a Strategy of Women Entrepreneurship Development in the Republic of Croatia. The strategy was renewed, adjusted for the new EU planning period of 2014-2020, in 20142. The document identifies as a key obstacle to women entrepreneurship "Lack of training and educational programs and schooling for technology intensive ventures and role models, especially in the field of entrepreneurial ventures in technology intensive activities and science" as well as "Lack of advice and mentorship". As a consequence, the Strategy features the following two strategic objectives:

1 http://www.seece.hr/UserDocsImages/Strategy%202013%20-%202020%20MINPO.pdf
2 http://www.minpo.hr/UserDocsImages/Strategy%20of%20Women%20Entrepreneurship%20Development%20in%20
the%20Republic%20of%20Croatia%202014%20-%202020%20.pdf
Strategic Objective #2 Improving Systematic Support to Women Entrepreneurship: "Ensure support to women’s entrepreneurial activities, develop business networking, strengthen existing and develop new models of education and training; improve access of women to favourable forms of financing, develop new forms of financing and utilization of EU funds and financial instruments". Measures to be taken include "development of new models of education and training and development of women in business management (ICT systems, new technologies, creative industries, applying innovations, cluster management, etc.)"

Strategic Objective #3 - Introduction of Women Entrepreneurship to the Overall Institutional Infrastructure: Consultancy and mentorship at a regional level, support to women entrepreneurship through support infrastructure, and providing expert support for women’s entrepreneurial projects.

Entrepreneurship education is high on the Croatian policy agenda as well. In 2007 the then Ministry of Economy, Labour and Entrepreneurship took an initiative to establish structured co-operation amongst the countries of South Eastern Europe on lifelong entrepreneurial learning South East European Centre for Entrepreneurial Learning (SEECEL), with the Republic of Croatia as the host country.

The Charter for Entrepreneurial Learning: the Keystone for Growth and Jobs was signed in 2012 by the eight then EU pre-accession countries from South East Europe, with the support of the European Commission and the European Training Foundation. The objective of the charter is to reinforce development and progress in lifelong entrepreneurial learning policy improvement, good practice sharing and regional cooperation. It is based on the following principles: lifelong entrepreneurial learning, entrepreneurship as a key competence, EU policy framework, partnership, do-working developments (sharing of good practice) and social and environmental responsibility.

In June 2010 Croatian Government adopted a Strategy for Entrepreneurial Learning 2010 – 2014, with the main goals to: “sensitize the public about entrepreneurship and develop a positive attitude towards lifelong learning for entrepreneurship; to introduce entrepreneurship as a key competence in all forms, types and levels of formal, non-formal and informal education and learning”.

The Education for Entrepreneurship (E4E) initiative was launched by the Croatian Chamber of Economy and is coordinated by a consortium lead by the Ministry of Entrepreneurship and Crafts. It seeks to strengthen the general entrepreneurial capacity in Croatia, stressing the human potential development with the goal of developing economic competitiveness. Its vision is to create an integral system for entrepreneurship educational as a concept of lifelong learning and in line with the up-to-date needs of world market by taking into account the current situation and the development directions of the Croatian economy. Strategic goals include the following:

- Lifelong learning and training for understanding and gaining the economic system logic and the basic techniques of entrepreneurial thinking with the purpose of stimulating the general development in the Republic of Croatia
- Developing an unique system of entrepreneurship education, as one of the 8 key competences of the EU, encompassing all social groups
- Continuous development of Strategy of Entrepreneurial Learning, its implementation, monitoring and evaluation
- Coordination and support of the structural dialogue of all relevant stakeholders in Croatian economy with the goal of raising the general entrepreneurial capacity and enhancing competitiveness

3 See http://soms.ismai.pt/index.php/SOMS/article/view/2/4
• Strengthening the capacity of educational system (curriculum, teacher training, school management training) with the goal of successful implementation of the Strategy of Entrepreneurial Learning

• Articulating the policy of improving the human resources potential in the companies, in line with the actual economic development
3 Stakeholder initiatives for the promotion of e-Leadership skills development

Most Croatian initiatives in the area do not specifically focus on skills for e-leadership and digital entrepreneurship, but provide support in a more horizontal way, concentrating on innovation. Indeed, most of the initiatives identified that have the potential to support e-leadership skills actually target innovative companies in general. Start-ups and SMEs have clearly been identified as key players in the innovation process as most of the initiatives and policies address them directly.

3.1 Initiatives from the business community

HUP, the Croatian Employers’ Association, runs a training initiative targeting managers called HUP PUMA. It offers a modern system of continuing managerial education with a focus on adaptation of new management trends while also emphasising Croatian particularities. PUMA organises visits by renowned speakers both from within the country and abroad and lets them share their experience. HUP PUMA’s programme seeks an optimal balance between showcasing the most current research and demonstration of successful practice. The programme consists of several educational courses. Over ten years already, training programmes have been held annually in seven cities in Croatia: Zagreb, Osijek, Slavonski Brod, Vinkovci, Pula, Rijeka and Split. Funding comes from regional authorities in collaboration with HUP.

Software Start-up Academy is a competition, now in its third year, being organized by Microsoft Croatia, in collaboration with community partners, aiming young, ambitious teams with the help of mentors from the profession to perfect his idea and it successfully placed on the market. The ultimate goal of this free education is the creation of products that will meet the needs of its customers and young entrepreneurs to facilitate the entry into the business world. The Academy is designed as a software and business programme and in combination with practical gives projects that attract the attention of experts, but also find their customers.

The ZIP Startup Programme is based on the “lean start-up” methodology and mentor expertise provided by the Zagreb Entrepreneurial Incubator. It is an intense 4-months programme during which teams can go through a total of 24 educational workshops that are held twice a week, all taking place in the late afternoon hours. Workshops are divided into educational workshops and reporting meetings. At educational workshops teams work on their project and with assistance of their mentors build a business model that could be presented to its customers and investors. Each team defines their own plan and objectives, while the ZIP team are at hand to help achieve their goals.

Ramiro Ltd, one of Croatia’s largest provider of consultancy on organisational development and HRM, runs an own training institute, the Leadership NLP Academy. It offers an intensive training programme targeting future leaders, the people they work with and their organisations. The course seeks to develop charismatic leaders who with their knowledge, competencies and motivation skills know how to lead others to mutual success. The programme combines latest knowledge about management, leadership and business psychology with NLP skills applicable to business and management context. It is made up of a series of training courses, divided into two stages, Practitioner and Master Level, lasting a total of 16 modules.

The private Innovation and Leadership Business Academy (ILBA) is, as the name implies, dedicated exclusively to leadership development in innovative sectors of the economy. Its course programmes have a focus on strategic management using modern innovations and leadership skills; achieving competitive advantage through ICT and new business models, especially with integrated management processes, knowledge and projects; and dissemination of knowledge of each employee for strategy implementation as a whole and achieving business excellence. ILBA seeks to
offer, with its 12 programmes, a whole range of skills needed for leaders in companies or institutions, based on global best practice and relevant knowledge that is customised for business practices not only in Croatia, but south-east Europe in more general. ILBA offers the possibility for students to acquire theory and practice based skills within a course duration of 3 to 5 months. Programmes are conducted through lectures, one-day and two-day seminars, practical workshops and e-learning. The focus of the Academy is to teach skills that deal with application of ICT in management. ILBA Academy is focused on the introduction of new knowledge and strategic programs in business with which modern technology can be successfully applied in management. Curricula have been developed in collaboration with industry, science and government. A special focus is on theory that is directly applicable in practice.

3.2 e-Leadership training in the context of SME and entrepreneurship support

Training in e-leadership skills is offered by start-up accelerators, incubators and technology parks, e.g. by Technology Park LLC which operates incubation center for innovative technology start-ups. The centre is engaged in providing support to existing, technologically innovative companies; technology transfer from universities and other public sector research centres to the wider economy; enterprise networking; and awareness raising around innovation as the foundation of the competitive economy.

The Croatian Enterprise Europe Network seeks to develop the capacity of SMEs to innovate, helping them to create synergy with the research community and stakeholders, and thus encourage conditions for increasing competitiveness of Croatian economy and society in general. Training related activities appear to be limited, however, to events (e.g. Workshops on intellectual property management for innovative companies.) and organisation of multilateral meetings for networking.4

Modern Leadership in the Making is a workshop series organised by ISZD with financial support from the US Embassy in Zagreb. It seeks to promote modern perspectives on data-informed, evidence based leadership in Croatia as well as Serbia. The immediate goal is to identify university students with a capacity to become paradigm shifting leaders and give them training and networking they can use in their future careers. The long term goal is to increase the number of good young leaders in various disciplines in the Western Balkan region and in this way initiate positive social and economic changes in the society. The programme aims at a “perceptual shift from the deeply rooted traditional ‘idea of the leaders as an exceptional (and usually senior) individual to the notion of ‘everyone as a leader’”. Targeted students come from different fields of study, from social disciplines and humanities to technical and natural sciences. Each workshop has training sessions combined with leadership lectures in the networking part of the workshop schedule.

3.3 Initiatives from within the established education system

Most universities in the country have set up structures for the commercialisation of research results through spin-off and start-up activities. All of these are engaged in education and training for digital entrepreneurship, albeit most of them without explicit reference to e-leadership skills.

The Faculty of Economics, University of Zagreb has a number of course programmes at postgraduate level that deal with e-leadership skills. These include the Master Study Managerial Informatics and PDS IT Management, each valuable 60 ECTS points. The Master Study Managerial Informatics course presents students with the latest scientific, professional and practical achievements in the application of information technology when managing companies, non-profit, governmental and public organizations. Candidates acquire knowledge and skills necessary for managing complex projects and businesses by utilizing contemporary technological tools and

4  http://www.bicro.hr/docdokument/EEN%20brosura_fin.pdf
management methods. The IT Management postgraduate course consists of four semesters of about 110 hours each. The forms of teaching are lectures domicile teachers and visiting scientists and experts, seminars, project presentations, workshops, individual consultations, mentoring, and analysis and explanation of case studies and literature. During the study of nine fundamental and five elective courses chosen from the available 10 specialist courses, participants are allowed to profile studies according to their preferences. The main areas covered by the curriculum of studies are IT management, e-business, decision support systems, innovative management, business process reengineering and the application of information technology in the performance of key business functions.

The Faculty of Economics, University Josip Juraj Strossmayer in Osijek recently established the International Centre for Entrepreneurial Studies (ICES). The study programme “Entrepreneurship and Innovation” covers undergraduate study, graduate study, specialist programme, doctoral programme and seminars & executive programs. The Undergraduate Study in entrepreneurship equips students with the competences needed for starting a business venture. Students of Graduate Study acquire competences of understanding the process of growth of a business venture based on knowledge and innovations, i.e. develop the ability to manage business systems with growth potential. In addition to the vertical of formal education (undergraduate, graduate and postgraduate studies) ICES organises various seminars and workshops intended for the owners of SMEs and their employees.

The Faculty of Organization and Informatics in Varaždin is an institution that provides education to future experts in the field of implementation of ICT. Its programme “Engineering and reengineering the organization of the information age” seeks to connects the needs of the economy, public services and state administration with scientific and research resources of the University and the Faculty of Organization and Informatics. Students acquire and apply information sciences knowledge learning about organizations management, setting up an effective ICT-driven organisation.

In 2014 the University College for Applied Computer Engineering Algebra started the “e-Leadership” learning programme which consists of 20 courses covering a wide range of e-leadership skills as reflected in a T-shaped portfolio of skills representing expertise in both using ICT systems and leading organisations. Although every e-leader should have a T-shaped portfolio of skills, the distribution of expertise may vary, depending on what sets of activities an e-leader is responsible for. There are eight general goals and related sets of activities that successful organisations must be able to accomplish (whether with internal or external resources) in order to use ICT competitively. To be accomplished well, each of the following key set of activities requires a different mix of strategic and practical understanding of vertical and horizontal expertise. When designing the "e-Leadership" learning all prerequisites and recommendations specified previously has been implemented and the programme has been designed to comply with relevant e-Leadership initiatives and documents at EU level. Also, in the design of the "e-Leadership" curriculum, the Algebra Business Council has been involved along with the Algebra Alumni members, foreign experts, and distinguished professors from the Kelley School of Business at Indiana University, USA.

International Graduate Business School Zagreb (IGBS Zagreb) is a leading Croatian research centre in the field of economics. The Institute of Economics, Zagreb (EIZ) founded the school in 2003 with initial support of a grant from U.S. Department of State, in academic partnership with Kelley School of Business. IGBS Zagreb seeks to provide high quality management education, e.g. via bringing top-rate professors to Croatia. In the period from 2004 to 2012 seven generations of students from a variety of business sectors in Croatia and abroad have attended the International MBA Program at

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IGBS Zagreb. MBA Graduates receive an IGBS diploma plus a certification of success from Indiana University's Kelley School of Business.

Other university-affiliated initiatives for promoting entrepreneurship and technology transfer to SMEs include:

- The **Science and Technology Park of the University of Rijeka (STEP Ri)**, an entrepreneurial support institution that organize "many interesting education" and offers consultancy in the fields of entrepreneurship and innovation;

- **Office of Technology Transfer, Split (TTO)**, part of the Department of Science at the University of Split and designed as a meeting place for the University and the local economy around the objective to significantly increase commercialization of intellectual property created from the University's activities.

- **TERA Technology Development Centre** in Osijek: TERA is the result of collaboration between the University Joseph Juraj Strossmayer, the city of Osijek and Osijek-Baranja County. Its mission is to develop the region's knowledge-based economy via commercialization of public sector financed research outcomes.

**Network of Student Business Incubators** is a national initiative, executed through a public-private partnership between HAMAG-BICRO, the Croatian Agency for SMEs and Investment, and all higher education institutions (universities) that want to implement entrepreneurial education at their institution through Business Incubators: The objective is to support students in establishing and running their real companies, with the help of mentors (professors and entrepreneurs) that will support them in doing real business through all phases – from planning and developing to implementing their business ideas. The significant role of Student Business Incubators is in their ability to increase the survival rates of new businesses. Existence of business incubators has been found to be particularly important at the level of higher education, as it represents a place where education, research and economy meet. These entrepreneurial initiatives are important also for building closer relationships between the world of education, research and economy/business. The project, which origins go back to the year 2008, has created "virtual incubators" providing support for student companies in the first years of their business. Preparatory activities included:

- Introducing non-economic faculties in Croatia with the concept of a business incubator;
- Creating a pool of mentors that will provide needed support to students;
- Creating an interactive web portal i.e. "virtual incubator";
- Getting the financial funds needed for further development and support of the incubator;
- Creating a real incubator with infrastructural support for start-up companies.

The latter has been launched at the **University College of Economics, Entrepreneurship and Management Nikola Šubić Zrinski**. It offers access to of a pool of mentors, experts in various areas ranging from entrepreneurship, communication, languages, culture, agronomy, etc. In line with the syllabus of UCEEM-NSZ, the Student Business Incubator is initiated as the central advisory body to provide organizational and advising help in managing a company. The initiative is under auspices of Croatian Ministry of Economy, Labour and Entrepreneurship, and Croatian Chamber of Economy.

**eStudent** is an association run by and for students and young university lecturers with the ambition to change their environment for the better. It is one of the major non-profit organisations in Croatia. Many of the activities of eStudent are about equipping fresh graduates with leadership skills in the context of the knowledge-based society and economy, driven by innovation. The association as a whole and all projects, workshops and initiatives are led by the members themselves. The projects of eSTUDENT are attended each year by more than 5,000 students from

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across Croatia; partnerships with more than 50 renowned companies and organizations are generated; and more than 50,000 people are reached in some way by eStudent projects each year. eStudent has already received five Special Chancellor’s Award from the University of Zagreb, and five of its projects enjoy the official support of the Croatian President, Ivo Josipovic. Among the projects of eStudent which are related to e-leadership skills development are the Business Plan Contest, the Case Study Competition, the IC Future Seminar, Gold Index and the App Start Contest. See detailed description further below.
### 4 Assessment of policies and stakeholder initiatives on development of skills in e-leadership and digital entrepreneurship

Exhibit 1: High-level assessment of policies and stakeholder initiatives on development of skills in e-leadership and digital entrepreneurship

<table>
<thead>
<tr>
<th>No / Type</th>
<th>Title of policy / initiative</th>
<th>Main stakeholder(s)</th>
<th>Stakeholders from:</th>
<th>Assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy 1</strong></td>
<td>Strategy for Broadband Development [2012 – 2015]</td>
<td>Ministry of Maritime Affairs, Transport and Infrastructure</td>
<td>Government</td>
<td>Business</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td><strong>Policy 3</strong></td>
<td>Education for Entrepreneurship (E4E)</td>
<td>Ministry of Entrepreneurship and Crafts, Croatian Chamber of Economy</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Policy 5</strong></td>
<td>Strategy for development of women entrepreneurship in Croatia</td>
<td>Government of the Republic of Croatia, Ministry of Entrepreneurship and Crafts</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Initiative 1</strong></td>
<td>HUP PUMA</td>
<td>Croatian Employers’ Association</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Initiative 2</strong></td>
<td>Software Start-Up Academy</td>
<td>Microsoft</td>
<td>✓</td>
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</tr>
<tr>
<td><strong>Initiative 3</strong></td>
<td>ZIP Startup Program</td>
<td>Zagreb Incubator...</td>
<td>✓</td>
<td>1</td>
</tr>
<tr>
<td><strong>Initiative 4</strong></td>
<td>Leadership NLP Academy</td>
<td>Ramiro</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Initiative 5</strong></td>
<td>Innovation and Leadership Business Academy (ILBA)</td>
<td>ILBA Institute</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Initiative 6</strong></td>
<td>Modern Leadership in the Making</td>
<td>ISZD; financed by Embassy of the United States</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Initiative 7</strong></td>
<td>Master Study Managerial Informatics, PDS IT</td>
<td>Faculty of Economics, University of Zagreb</td>
<td>✓</td>
<td>0-1</td>
</tr>
<tr>
<td>Initiative</td>
<td>Title of policy / initiative</td>
<td>Main stakeholder(s)</td>
<td>Stakeholders from:</td>
<td>Assessment:</td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Government</td>
<td>Business</td>
</tr>
<tr>
<td>Initiative 8</td>
<td>Study programme “Entrepreneurship and Innovation”</td>
<td>Faculty of Economics, University J.J. Strossmayer in Osijek</td>
<td>✔️</td>
<td>0-1</td>
</tr>
<tr>
<td>Initiative 9</td>
<td>Engineering and reengineering the organization of the information age</td>
<td>Faculty of Informatics in Varaždin, University of Zagreb</td>
<td>✔️</td>
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<tr>
<td>Initiative 10</td>
<td>&quot;e-Leadership&quot; learning [2014-]</td>
<td>University College Algebra</td>
<td>✔️</td>
<td>1</td>
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<tr>
<td>Initiative 11</td>
<td>IGBS MBA Program</td>
<td>International Graduate Business Scholl Zagreb (IGBS Zagreb)The Institute of Economics, Zagreb + Kelley School of Business, Indiana, USA</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Initiative 12</td>
<td>The Science and Technology Park of the University of Rijeka (STEP RI)</td>
<td>University of Rijeka, BICRO</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Initiative 13</td>
<td>Network of Student Business Incubators</td>
<td>HAMAG-BICRO ( Croatian Agency for SMEs and Investment), Croatian Ministry of Economy, Labour and Entrepreneurship; Croatian Chamber of Economy</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Initiative 14</td>
<td>eStudent</td>
<td>eStudent Association</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
5 Best practice policy and stakeholder initiatives

From the policies and initiatives mentioned above, the following have been selected as candidate for best practice.

5.1 University College Algebra

The University College for Applied Computer Engineering Algebra represents an example of e-leadership skills becoming mainstreamed across a number of course programmes within a single institute. Algebra's standing in the field of e-leadership skills and competences is built on strong cooperation between a private education institution and leading entrepreneurs/companies in the market. The combination of an ICT background and enhanced entrepreneurial and management skills is designed to result in a unique combination of e-skills and e-leadership potential.

Algebra’s success in the area has already been recognised by NVAO, an independent provider of international quality accreditation, and Microsoft: Algebra has been awarded Partner of the Year as among the best educational partner of Microsoft in the world. In response to the fact that Croatia's industry increasingly needs immediately employable “e-leaders”, Algebra’s new Digital Marketing programme effectuated another step towards economic, law and finance knowledge rounding up the circle of expected e-leadership knowledge base (Horizontal/Transversal Expertise & Vertical Expertise). One of key advantages of the College is that it offers the e-leadership knowledge as part of the formal education process.

Observers have praised University College Algebra for offering a comprehensive curriculum fully aligned with the e-Leadership Key Sets of ICT-related Activities, as recommended by a report authored by empirica, IDC and INSEAD eLab on behalf of the European Commission, Directorate General Enterprise and Industry.

5.2 International Graduate Business School Zagreb (IGBS Zagreb)

IGBS Zagreb, the International Graduate Business School Zagreb, was established on the basis of a 2000 agreement on scientific and technological cooperation between the United States of America and the Republic of Croatia. The School was founded in 2003 by a leading Croatian research centre in the field of economics, the Institute of Economics, Zagreb (EIZ) with initial support of a grant from U.S. Department of State, in academic partnership with Kelley School of Business, Indiana University, a top 15 U.S. business school according to Bloomberg Business Week.

IGBS Zagreb is a private college accredited by the National Council for Higher Education according to Bologna standards. The IGBS curriculum is being delivered by top-rate faculty renowned for their teaching skills. Indiana University's Kelley School of Business Professors teach the majority of the courses, joined by Croatia's most outstanding teaching and research faculty.

Companies in Croatia and the region, which until recently had to send their managers to business schools in Europe or the U.S. at great expense, now have a much more accessible avenue to high quality management education. Not only can they send their most promising young managers to IGGS Zagreb, but they can also hire additional graduates of the IGBS MBA Program. On the basis of their long-term partnership with Kelley School of Business, from 2009 onwards IGBS MBA graduates have been given the possibility to continue their education under favourable conditions (such as full exams recognition and significantly lower tuition fee) in online Kelley Direct M.Sc. programmes in Finance, Global Supply Chain Management, or Strategic Management tracks, thus enabling them to earn a well regarded AACSB accredited M.Sc. degree from Kelley. IGGS seeks to represent a unique blend of Kelley School of Business’s award-winning faculty and tradition of academic excellence with: local economic insight from Croatian faculty and guest lecturers; research opportunities arising between the international and Croatian faculty; a challenging curriculum from an elite
faculty; American-style accessibility of professors; the opportunity to network with alumni from Croatia and around the world; and chance for continuing education across boundaries through customised distance programs.

5.3 Network of Student Business Incubators

The Network of Student Business Incubators seeks to serve as a pillar for student companies that are just starting in business, and provide them with technical and infrastructural support. It builds and supports the capacity development of local/regional micro, small and medium enterprises, and direct entrepreneurial activity. It also serves to create links with relevant networks, agencies and businesses, which results in the improvement of business, technology and procedures to be used, increasing the quality of export products, diversification of products/services, increasing employment, new business transactions, exchange and use knowledge and innovation, etc. The Student Business Incubator is under auspices of Croatian Ministry of Economy, Labor and Entrepreneurship, and Croatian Chamber of Economy. In line with the syllabus of UCEEM-NSZ and following the European and global directives for fostering entrepreneurship, the Student Business Incubator was initiated in 2008 as the central advisory body to provide organisational and advising help in managing a company.

The main idea of Network of Student Business Incubators is to create so called “virtual incubators” during the first phase of the programme, by ensuring support for the companies in the first years of their business through consulting services, information on investment possibilities and offering them necessary infrastructure in order to ensure their success on the market. Student business incubators have been found to play a significant role in economic growth generated from economic and non-economic higher education institutions. They are a place where education, research and economy meet, and where mentors help students to develop and realize their business ideas. Through their “start up” businesses, students will, with the help of their mentors with different profiles, solve their business challenges directed towards creating new value.

5.4 eStudent

eStudent is an association run by and for students and young university lecturers with the ambition to change their environment for the better. It is one of the major non-profit organisations in Croatia. Many of the activities of eStudent are about equipping fresh graduates with leadership skills in the context of the knowledge-based society and economy, driven by innovation. eStudent receives financial support via sponsorship from major companies such as the UniCreditGroup and Nestlé. The association has its roots in an initiative of students and young lecturers at the Faculty of Economics at University of Zagreb, who had the ambition that the association should enable its members to be initiator of change, give them great practical experience and access to a network of knowledge and excellence. The association as a whole and all projects, workshops and initiatives are lead by the members themselves. The association has currently 400 active members working at the Faculty of Economics, Faculty of Electrical Engineering and Computer Science, Faculty of Science and Faculty of Pharmacy and Biochemistry, University of Zagreb, a project-oriented organizations are all Croatian universities. The projects of eSTUDENT are attended each year by more than 5,000 students from across Croatia; partnerships with more than 50 renowned companies and organizations are generated; and more than 50,000 people are reached in some way by eStudent projects each year. eStudent has already received five Special Chancellor’s Award from the University of Zagreb, and five of its projects enjoy the official support of the Croatian President, Ivo Josipovic. Among the projects of eStudent, the following appear to be of most relevance for the e-leadership topic:

- **Business Plan Contest** is a competition that encourages students with entrepreneurial ambitions to develop ideas and to their elaboration in the form of a business plan. It has been
organized for nine consecutive years already. The basic idea of the competition is to provide an opportunity for students with a powerful business idea to hone their skills so that it reaches the stage of being suitable for implementation in the marketplace. The project promotes entrepreneurial learning and business start-ups.

- **Case Study Competition**: This is a competition in solving real business cases, which are handed to students from different areas of interest. It gives all Croatian students the opportunity to demonstrate their knowledge, ideas and opportunities in direct interaction with the best Croatian firms – i.e. potential future employers – and being rewarded for it. While solving cases students work in teams of 2-4 persons, and they can consult with the employee business with the help of a dedicated mentor, as well as professors and lecturers of the Faculty. Students are thus put in the role of decision-maker for developing and presenting a solution to a real-world problem of a renowned Croatian company.

- **IC Future Seminar**: This is an international summer school on the topic of intellectual capital and leadership. It targets both Croatian and foreign students who want to learn in a new, unconventional way about intellectual capital and leadership. The course is made up of lectures, workshops, discussions, and collaborative work on practical challenges. The focus is not only on acquisition of highly applicable knowledge which attendees will find useful in their future work and career, but also on developing innovative ideas.

- **Gold Index**: This award is handed out by students to reward and thereby promote all those businesses and institutions which in one way or the other have a strong connection with students, e.g. by supporting the projects of the eStudent association or by offering students participation in some of their own activities. The award represents a "roadmap" to guide companies and institutions on how to develop a partnership with students which is likely to be highly beneficial to both parties.

- **App Start Contest**: A competition for students about development of mobile applications.
Methodology

European e-Leadership Scoreboard

The scoreboard attempts to offer an approach to monitoring and assessing issues related to e-leadership skills development, such as: education offers, workforce potential, exploitation opportunities, and enabling policies or other driving mechanisms. It compares at Member State level the e-leadership “performance” of EU28 Member states across several building blocks, thereby allowing for comparisons on relative strengths and weaknesses of e-leadership ecosystems between countries, with the major goal of informing and enabling policy discussions at national and EU level.

The e-leadership scoreboard is an evolving model to be further refined through input from academic / experts debates and feedback from other interested parties. It comprises a series of indicators using data from both primary and secondary sources. It is based on a straightforward yet comprehensive framework for measuring determinants of demand and supply for e-leadership skills in each country. Conceptually, the e-leadership scoreboard comprises four levels, 28 indicators; 8 building blocks; 4 dimensions, which can be aggregated to receive an overall e-leadership Index (eLI).

The overall e-leadership performance in each of the country has been summarized into a scoreboard, and further on into a composite indicator (e-leadership index). These raised a number of challenges related to the quality of the data selected and to their combination into a single indicator. A number of steps were taken to assure the quality of the data and the reliability of the e-leadership index. The steps followed are explained in more details below:

**Step 1: Identifying and addressing outliers**

Mean and standard deviations have been calculated for all indicators among all countries included in the scoreboard. Outliers have been identified as the absolute z-values larger than 3. Relative to the case, the values distorting the variable distribution (positive/negative outliers) have been replaced by maximum/minimum values observed in each single indicator. Beforehand, some indicators have been standardized using population data in order to avoid any country-size effects in the dataset sample.

**Step 2: Setting reference year**

A reference year is set depending on the data availability of each indicator for each of the countries considered. Overall, for most of the indicators the reference year is lagging 1-3 years behind the timing the e-leadership scoreboard refers to. In this case, the reference year for most of the indicators of the 2014 e-leadership scoreboard will be lying between years 2011 to 2013.

**Step 3: Treatment of missing data**

When dealing with the missing values, we distinguish among two different cases which influence data imputation procedure:

- Missing at random: If data is not available for a year-in-between, we replace data using the value for the previous year / latest year available.
- Missing completely: For countries which data is completely missing for the entire time series, no imputation is effort carried out. In these cases the indicator is left empty, marked as not available (‘n/a’), and not considered in the calculation of the county scores.
Table 1: e-Leadership scoreboard indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Definition and scope</th>
<th>Latest data available</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Master’s or Exec. Ed level programmes with a mix of ICT and business</td>
<td>Definition: combination programmes that have as target group specialist or junior / middle management are professional-oriented and have a mix of business and ICT. Either at regular consecutive MSc level, or are aimed at specialists only (e.g. new media, marketing, logistics, communications, e-healthcare). Measure: per 100,000 population aged 20-59</td>
<td>2013</td>
<td>empirica</td>
</tr>
<tr>
<td>E-leadership candidate programmes</td>
<td>Definition: E-leadership candidate programmes - programmes that are clearly aimed at experienced professionals with leadership roles, which usually already accept a high level of IT skills and significant business experience. Measure: per 100,000 population with potential e-leadership skills.</td>
<td>2014</td>
<td>empirica</td>
</tr>
<tr>
<td>Enterprises that provided training to ICT/IT specialists to develop/upgrade their ICT skills</td>
<td>Definition: Enterprises who provided training to develop/upgrade ICT skills of their personnel for ICT/IT specialists (NACE Rev. 2). Measure: % of enterprises</td>
<td>2012</td>
<td>Eurostat Information statistics Code: [isoc_ske_itm2]</td>
</tr>
<tr>
<td>Quality of management schools</td>
<td>Definition: In your country, how would you assess the quality of business schools. Measure: [1 = extremely poor—among the worst in the world; 7 = excellent—among the 2012–13 weighted average]</td>
<td>2013</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Line managers</td>
<td>Definition: ISCO-08 (1111, 11110, 11111, 11112, 1223). Measure: as % of total workforce</td>
<td>2013</td>
<td>LFS</td>
</tr>
<tr>
<td>ICT managers, architects and analysts</td>
<td>Definition: ISCO-08 (1120, 2421, 2511). Measure: as % of total workforce</td>
<td>2013</td>
<td>LFS</td>
</tr>
<tr>
<td>e-leadership pipeline</td>
<td>Definition: ISCO-08 (2132, 2153, 2306, 2408, 5123, 2513, 2514, 2515, 2512, 2512, 2514, 2529). Measure: as % of total workforce</td>
<td>2013</td>
<td>LFS</td>
</tr>
<tr>
<td>e-Leadership pipeline 2-1: ICT practitioners - professional level</td>
<td>Definition: Count of first degrees in ISCED 5A and first qualifications in ICT. The number of students entering the labour force in a given year does not equal but is approximately this number of graduates, as many will go on to second or further degrees (master, PhD). Measure: per 1,000 population aged 20-24</td>
<td>2012</td>
<td>Eurostat Code: [educ_grad5]</td>
</tr>
<tr>
<td>High growth enterprises in ICT sector</td>
<td>Definition: High-growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2 sectors: information and communication (6). Measure: Number of high-growth enterprises measured in employment (growth by 10% or more)</td>
<td>2012</td>
<td>Eurostat Code: [bd_9pm_r2]</td>
</tr>
<tr>
<td>High growth enterprises in ICT intensive sectors</td>
<td>Definition: High-growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2 sectors: Manufacture of computer, electronic and optical products (C26), Manufacture of electrical equipment (C27), Manufacture of machinery and equipment n.e.c. (C28), Manufacture of motor vehicles, trailers and semi-trailers (C29), Manufacture of other transport equipment (C30), Professional, scientific and technical activities (M). Measure: Number of high-growth enterprises measured in employment (growth by 10% or more)</td>
<td>2012</td>
<td>Eurostat Code: [bd_9pm_r2]</td>
</tr>
<tr>
<td>Employment in ICT sector</td>
<td>Definition: Number of persons employed in the following NACE Rev. 2 sectors: Manufacture of computer, electronic and optical products (C26), Information and communication (6). Measure: as % of total employment</td>
<td>2011</td>
<td>Eurostat</td>
</tr>
<tr>
<td>Employment in ICT intensive sectors</td>
<td>Definition: Number of persons employed in the following NACE Rev. 2 sectors: Manufacture of electrical equipment (C27), Manufacture of machinery and equipment n.e.c. (C28), Manufacture of motor vehicles, trailers and semi-trailers (C29), Manufacture of other transport equipment (C30), Professional, scientific and technical activities (M). Measure: as % of total employment</td>
<td>2011</td>
<td>Eurostat</td>
</tr>
<tr>
<td>Enterprises that employed ICT/IT specialists</td>
<td>Definition: Enterprises that employed ICT/IT specialists (NACE Rev. 2). Measure: as % of enterprises</td>
<td>2012</td>
<td>Eurostat Code: [isoc_ske_itm2]</td>
</tr>
<tr>
<td>State of cluster development</td>
<td>Definition: In your country, how widespread are well-developed and deep clusters? Geographical concentrations of firms, suppliers, producers of related specialized institutions in a particular field? Measure: [1 = nonexistent; 7 = widespread in many fields]</td>
<td>2013</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Capacity for innovation</td>
<td>Definition: In your country, to what extent do companies have the capacity to innovate? Measure: [1 = not at all; 7 = to a great extent]</td>
<td>2013</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Firm-level technology absorption</td>
<td>Definition: In your country, to what extent do businesses adopt new technology? Measure: [1 = not at all; 7 = adopt extensively]</td>
<td>2013</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Impact of ICT on new services and products</td>
<td>Definition: To what extent are ICTs creating new business models, services and products in your country? Measure: [1 = not at all; 7 = a significant extent]</td>
<td>2012</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Availability of latest technologies</td>
<td>Definition: In your country, is the Internet an asset that is absolutely necessary for business? Measure: [1 = not at all; 7 = widely available]</td>
<td>2013</td>
<td>World Economic Forum, Executive Opinion Survey</td>
</tr>
<tr>
<td>Enterprises using social networks</td>
<td>Definition: Use social networks (e.g. Facebook, LinkedIn, Xing, Viadeo, Yammer, etc.) Measure: as % of enterprises</td>
<td>2013</td>
<td>Eurostat Code: [loc_soc_nw]</td>
</tr>
<tr>
<td>Enterprises using RFID technologies</td>
<td>Definition: Enterprises using Radio Frequency Identification (RFID) technologies Measure: as % of enterprises</td>
<td>2011</td>
<td>Eurostat Code: [isoc_ske_rf]</td>
</tr>
<tr>
<td>National policy and stakeholder initiatives</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Step 4: Calculating re-scaled scores**

Min-max normalisation method was adopted to adjust for differences in terms of units of measurement and ranges of variation. All 28 variables have been normalised into the [0-10] range, with higher scores representing better performance for the indicators.

The following normalisation formula has been applied:

\[
X_{i, 0 \text{ to } 10} = 10 \times \frac{(X_i - X_{\text{Min}})}{(X_{\text{Max}} - X_{\text{Min}})}
\]

Where:
- \(X_i\) = country score
- \(X_{\text{Min}}\) = sample minimum
- \(X_{\text{Max}}\) = sample maximum
- \(X_{i, 0 \text{ to } 10}\) = the data point \(i\) normalized between 0 and 10

**Step 5: Calculating composite e-leadership index**

The e-leadership Index for each country is calculated as a weighted average of the rescaled scores for every indicator included in the scoreboard. The weighting approach used distributes different weights to each of the building blocks, based on the results obtained from a regression analysis which assesses relationships between each building block indicators’ (independent variable) and estimated number of e-leaders for each 28 Member States (dependent variable). The rationale behind this analysis is to explore and assess relationships between indicators’ performance and potential presence of e-Leaders.

**Identification of policies and stakeholder initiatives on e-leadership skills**

To gather information on and evaluate the current e-leadership skills policy and initiative landscape and try to assess the impact of relevant policies at EU and national level, a significant amount of information needed to be systematically collected. The challenge has not only been that the information owners are heterogeneous (including actors in the public sector, the private sector, e.g. the IT industry, and educational organisations), but also the geographic scope of the exercise, as the study focused on activities in all 28 Member States (and major regions, if relevant). The collected information included, in particular, factual information about ongoing and completed activities at the European level and in EU Member States (e.g. information about the types of initiatives, the stakeholders involved and the governance model applied), as well as views of stakeholders and experts that have been involved in such activities regarding the outcome of these activities.

Our activities consisted mainly of:
- a survey of relevant national policies in the e-leadership skills domain, and
- a survey of initiatives and multi-stakeholder partnerships (MSPs) at Member State level in this domain, with the focus as before.

The data was collected with the support, where found appropriate, of a network of national correspondents covering all 28 Member States of the EU.

Information gathering using templates where appropriate is divided into three steps.

In a first step it focused on the general policy context in the different countries. The aim has been to give a brief overview of the overall structure of the policy system and programmes and the key stakeholders active in this area. In this section, national correspondents were guided to refer to and
mention the policy programmes of relevance for e-leadership skills and to provide an overview of how these are embedded and integrated in the overall policy context.

The work built on already existing literature and studies available from previous projects, statistical sources and the proposers’ expertise and experiences gained in the precursor and previous projects and service contracts. The analysis was enhanced by most recent literature and studies.

In a second step, more in-depth data has been gathered on the major policies and initiatives targeting creation of e-skills and e-leadership skills which had been identified in the previous step. The template was brief, with the following points to be addressed:

- Name of policy, programme, initiative
- Overall objectives
- Specific objectives
- Targets
- Main characteristics
- Policy evaluation: Monitoring and measurement system in place
- Results achieved (versus objectives and targets)

The output of this activity included descriptions of the respective policies and initiatives on the basis of a standardised template, consisting of about 5 pages of text in tabular format and a preliminary assessment with regard to some benchmarking indicators (see below for a description of the benchmarking approach).

At an early stage of the project (Phase I) empirica developed a data gathering guide and template for use by national correspondents to gather the relevant information. This was followed by contacting national correspondents and providing them with a Guide / Toolkit containing background information, guidelines and instructions for how to conduct the research, and the data capture instruments (description templates and questionnaires, as applicable). National correspondents in each Member State were asked to identify key actors and experts in the fields of e-skills and e-leadership skills and to interview them, as well as to undertake desk research.

In order to avoid work duplication and to achieve best value for money, national correspondents were supplied with pre-filled data templates wherever available based on the instruments used for precursor studies, which they were then asked to validate, update and complement as appropriate.

**Benchmarking and assessment of policies and stakeholder initiatives on e-leadership skills**

**Indices for Member States’ level of policy activity**

National policy activity was explored through an investigation on national policy and stakeholder initiatives that have a bearing on skills development in the e-leadership and digital entrepreneurship area. Findings are summarised in the form of two indices for policies & initiatives addressing e-leadership skills of SMEs and skills for digital entrepreneurship, respectively. Index values have not been mechanistically derived using checklists but rather through a qualitative assessment of the significance and importance of each policy and activity.
Index values are to be interpreted as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>National policy and stakeholder initiatives on e-Leadership Skills for SMEs</th>
<th>National policy and stakeholder initiatives on Skills for Digital Entrepreneurship</th>
</tr>
</thead>
<tbody>
<tr>
<td>❌</td>
<td>No relevant policy or stakeholder activities of significant scope and size have been identified. Policy debate is non-existent or sketchy.</td>
<td>No relevant policy or stakeholder activities of significant scope and size have been identified. Policy debate is non-existent or sketchy.</td>
</tr>
<tr>
<td>✗</td>
<td>There are little policy or stakeholder activities which explicitly deal with e-leadership skills, but related topics have entered the policy debate. Measures are in place, e.g. training of SMEs in strategic use of ICT for innovation. Education providers show clear signs of awareness.</td>
<td>There are little policy or stakeholder activities which explicitly deal with skills for digital entrepreneurship, but related topics have entered the policy debate, e.g. in the context of efforts to boost entrepreneurial skills and attitudes. Education providers show clear signs of awareness.</td>
</tr>
<tr>
<td>✗ ✗</td>
<td>Some major policy and stakeholder activities, but coordination/integration, scope and sustainability are limited. Policy debate is well developed but still limited to insiders rather than the main target groups. Education providers offer relevant courses/programmes.</td>
<td>Some major policy and stakeholder activities, but coordination/integration, scope and sustainability are limited. Policy debate is well developed but still limited to insiders rather than the main target groups. Education providers offer relevant courses/programmes.</td>
</tr>
<tr>
<td>✗ ✗ ✗</td>
<td>Training for e-leadership is fully embedded in policy strategies (e.g. e-skills or SME strategies) and action plans are in place. The policy debate is well developed and involves all key target groups. SME demand for training courses is met by supply. Some shortcomings e.g. in terms of sustainability, monitoring, scalability, coverage.</td>
<td>Training for digital entrepreneurship is fully embedded in policy strategies on entrepreneurship, and action plans are in place. The policy debate is well developed and involves all key target groups. Entrepreneur demand for training courses is met by supply. Some shortcomings e.g. in terms of sustainability, monitoring, scalability, coverage.</td>
</tr>
<tr>
<td>✗ ✗ ✗ ✗</td>
<td>A master strategy is in place and there are not only various relevant policies and stakeholder initiatives, but these are also well integrated at national and sectoral level. Buy-in from all relevant stakeholders has been obtained.</td>
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</tr>
</tbody>
</table>

Preliminary results, as reproduced in the present document, will be validated through a major online survey using a sample of >300 stakeholder representatives and experts covering all 28 EU Member States.

**Methodology for Benchmarking policies and initiatives**

For identification of existing policies and initiatives that are of relevance to the e-leadership issue we have made use of a SWOT analysis approach (strengths – weaknesses – opportunities – threats). A SWOT analysis combines the assessment of external developments that cannot be directly influenced by the organisation in focus (e.g. the overall market development) with an analysis of its internal specific situation (e.g. its capabilities, product quality and price, market position). Factors specific to the firm are classified as strengths (S) or weaknesses (W), depending on how the situation is in comparison to key competitors with regard to the selected evaluation criteria. External developments (e.g. market trends) are then matched with the organisation’s specific strengths and weaknesses, which leads to conclusions on opportunities (O) or threats (T). A SWOT analysis helps organisations allocating their resources and capabilities to the competitive environment in which they operate. As such, the instrument is often used for (longer-term) strategy formulation.
The **unit of observation** in the present study is **policies and stakeholder initiatives**. The methodology for benchmarking these is described below. The analysis of strengths and weaknesses was conducted in a multi-step process for which various sets of criteria are being applied. In order to arrive at a shortlist of candidates from the initial total set of up-and-running policies and stakeholder initiatives identified by the National Correspondents, an evaluation scheme based on the following criteria was used:

### Table 3: Criteria for selecting outstanding policies and stakeholder initiatives for shortlisting

<table>
<thead>
<tr>
<th>Selection criteria</th>
<th>Evaluation scheme</th>
</tr>
</thead>
</table>
| **Partnership approach of the policy or initiative ("MSP fit")** | **To what extent does the policy or initiative make use of a "multi-stakeholder partnership" approach?**  
Each case is given a score on a scale of 3 values: |
| HIGH (2) | The policy or stakeholder initiative fully complies with the MSP definition, i.e. it engages all main stakeholders that are of relevance for a certain e-leadership skills related issue. The partnership involves all or most of the following: government (at national, regional and/or local level), business, education providers, social partners and possibly the civic sector (e.g. NGOs). |
| MEDIUM (1) | The policy or stakeholder initiative has some involvement of several partners from the government, business, social partners and/or education sector, but not all main stakeholders which are of relevance for a certain e-skills related issue are engaged. |
| LOW (0) | The policy or stakeholder initiative is initiated and operated mainly by one / only a few partners from only one, at most two sectors (government, business, social partners, education) and it appears that some key stakeholders who are of relevance for the e-skills related issue in question are not involved. |
| **Target and approach of the policy or initiative ("Target fit")** | **To what extent does the policy or stakeholder initiative target skills development in the e-leadership and digital entrepreneurship area?**  
Each case is given a score on a scale of 3 values: |
| HIGH (2) | The policy or stakeholder initiative has a clear focus on skills development in the e-leadership and/or digital entrepreneurship area |
| MEDIUM (1) | The policy or stakeholder initiative addresses skills development in the e-leadership and/or digital entrepreneurship area, but its main focus is more traditional (e.g. on general leadership or entrepreneurship skills). |
| LOW (0) | The policy or stakeholder initiative deals with “digital literacy” of the general population or subgroups hereof (e.g. unemployed, disabled people), but does not address ICT practitioner skills and/or e-Leadership skills. |
| **Embeddedness in the general policy context ("Policy fit")** | **To what extent is the policy or stakeholder initiative embedded in a broader policy context?**  
Each case is given a score on a scale of 3 values: |
| HIGH (2) | The policy or stakeholder initiative is strongly embedded in a relevant national or regional policy context (such as a skills strategy or an innovation action plan). |

---

7 Rather than entrepreneurship skills in general, or leadership skills in general
<table>
<thead>
<tr>
<th>Selection criteria</th>
<th>Evaluation scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selection criteria</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluation scheme</strong></td>
<td>There are some links of the policy or stakeholder initiative to general skills and innovation related policy programmes.</td>
</tr>
<tr>
<td>MEDIUM (1)</td>
<td>The policy or stakeholder initiative is poorly embedded, i.e. links to general skills and innovation related policy programmes are very limited. It is likely to remain a one-off activity of limited duration.</td>
</tr>
<tr>
<td>LOW (0)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size and scope of the policy or initiative (&quot;Scope and continuity&quot;)</th>
<th>Are the size and scope of the policy or stakeholder initiative sufficient to make it relevant to national skills development in the e-leadership and digital entrepreneurship field?</th>
</tr>
</thead>
<tbody>
<tr>
<td>These criteria are evaluated on a scale of 3 values:</td>
<td>Each initiative is given a score on a scale of 3 values:</td>
</tr>
<tr>
<td>HIGH (2)</td>
<td>The policy or stakeholder initiative has a size (in terms of budget, number of stakeholders involved, target group reach, or similar) and scope (e.g. sectors and occupations covered) which makes it highly relevant to related developments in the whole country. Its duration is not limited to a one-off project, but there is (planned to be) a continuity of activities over many years.</td>
</tr>
<tr>
<td>MEDIUM (1)</td>
<td>The policy or stakeholder initiative has a size and scope which means it is of some relevance to related developments in the whole country. Its duration may be limited to a one-off project, but its goals are continued through other means.</td>
</tr>
<tr>
<td>LOW (0)</td>
<td>Size and scope of the policy or stakeholder initiative are a too limited to make it relevant to related developments in the whole country, or its duration is limited to a one-off project without any continuation or follow-on activities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of experience with the policy or initiative (&quot;Maturity&quot;)</th>
<th>Has the policy or stakeholder initiative been in operation for long enough to make it possible to assess performance and to learn from its experience?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each case is given a score on a scale of 3 values:</td>
<td>Each initiative is given a score on a scale of 3 values:</td>
</tr>
<tr>
<td>HIGH (2)</td>
<td>The policy or stakeholder initiative has achieved a major part of its operational goals already, i.e. it has been in operation for long enough to allow for assessment.</td>
</tr>
<tr>
<td>MEDIUM (1)</td>
<td>The policy or stakeholder initiative has commenced already but is at an early stage of implementation.</td>
</tr>
<tr>
<td>LOW (0)</td>
<td>The policy or stakeholder initiative is still at the planning stage, i.e. no experience is available yet.</td>
</tr>
</tbody>
</table>