# II Міжнародна науково-методична конференція «SMART-освіта: ресурси та перспективи»

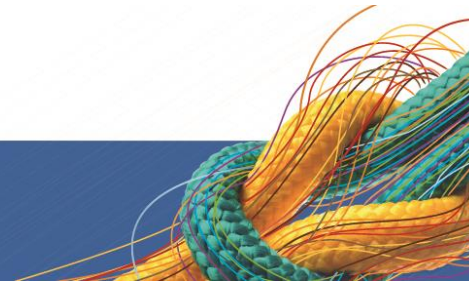**23 листопада 2016**
**м. Київ**

# ЦИФРОВІ НАВИЧКИ 2030

**Олена Чайковська,**
голова представництва Фонду ECDL в Україні, Голова Робочої групи 4.1 УФІ, зав. кафедри комп'ютерних наук КНУКіМ

# 6TH UNIVERSITY BUSINESS FORUM

European Commission

Brussels, 5-6 March 2015

THEMATIC
**UNIVERSITY-BUSINESS**
FORUM

## THEMATIC UNIVERSITY BUSINESS FORUM
UNIVERSITIES. BUSINESSES. ALLIANCES FOR INNOVATION.
Vienna, February 25-26, 2016

Home    Programme    Speakers    Sign Up    Location    Team    Documents    Gallery

## University Business Forum

It is a great honor and pleasure for us to invite you to the upcoming **University Business Forum** to **Vienna** on **February 25-26, 2016**!

The event is a joint effort of the European Commission, the Austrian Federal Economic Chamber and the Austrian Federal Ministry of Science, Research and Economy.

This two-day forum will bring together a diverse range of representatives from business, public authorities and universities. Around **500 participants from all over Europe** will jointly develop ideas and form creative collaborations.

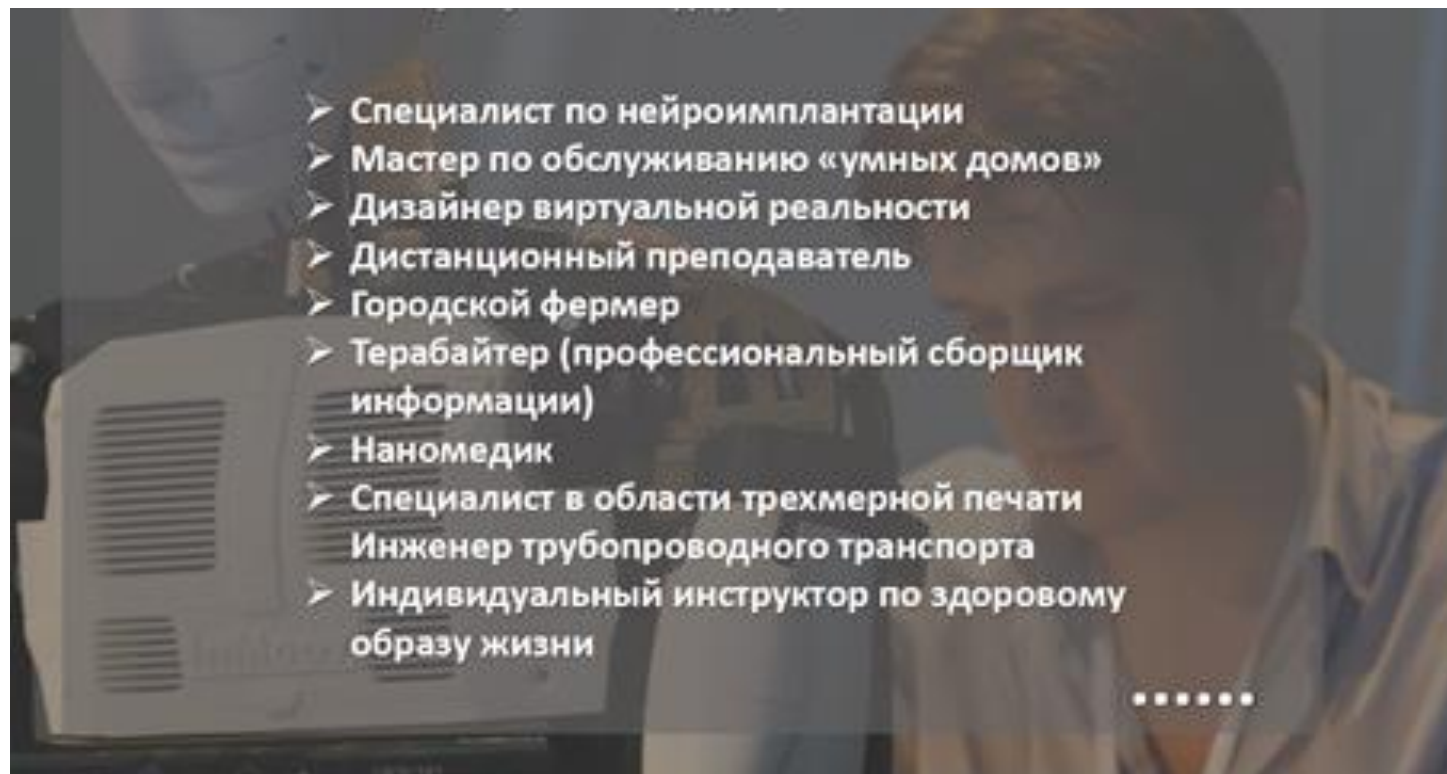During the upcoming Forum opinion leaders will share with us latest developments and recent innovations.
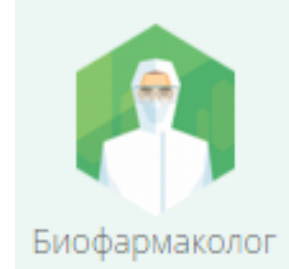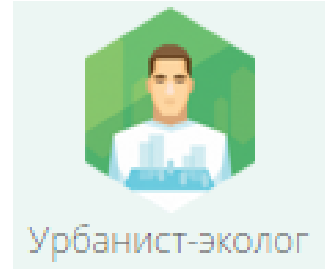
## FORUM REPORT

**DEVELOPING TALENTS FOR INNOVATION-BASED ECONOMIES**

24-25 SEPTEMBER 2015, VILNIUS AND KAUNAS, LITHUANIA

ECDL **Foundation**

➢ Специалист по нейроимплантации
➢ Мастер по обслуживанию «умных домов»
➢ Дизайнер виртуальной реальности
➢ Дистанционный преподаватель
➢ Городской фермер
➢ Терабайтер (профессиональный сборщик информации)
➢ Наномедик
➢ Специалист в области трехмерной печати
  Инженер трубопроводного транспорта
➢ Индивидуальный инструктор по здоровому образу жизни
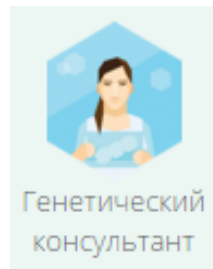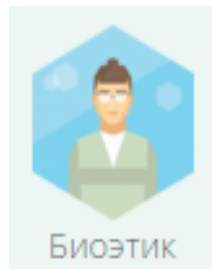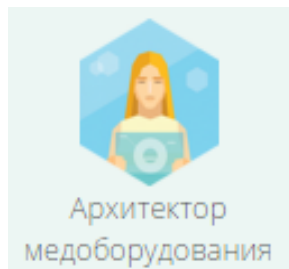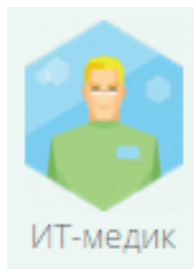
# Список професій загальнодержавного значення (з огляду на виклики і потреби, які постають перед українським ринком праці)

- налагоджувальник верстатів і маніпуляторів з програмним керуванням;
- бурильник експлуатаційного та розвідувального буріння свердловин на нафту та газ;
- помічник бурильника експлуатаційного та розвідувального буріння свердловин на нафту та газ;
- моторист бурової установки;
- машиніст бурової установки;
- складальник корпусів металевих суден;
- живописець;
- монтажник систем вентиляції, кондиціонування повітря. пневмотранспорту й аспірації
- бджоляр;

# Список професій загальнодержавного значення

- виноградар;
- верстатник деревообробних верстатів;
- верстатник широкого профілю;
- токар;
- тістороб;
- фрезерувальник;
- монтер колії;
- слюсар з ремонту дорожньо-будівельних машин та тракторів;
- помічник машиніста тепловоза;
- помічник машиніста електровоза.

# ТОП-10 навичок 2020

- Комплексне розв'язання проблем
- Критичне мислення
- Творчі здібності
- Уміння керувати людьми
- Взаємодія з людьми
- Емоційний інтелект
- Уміння формувати власну думку та приймати рішення
- Орієнтація на клієнтів
- Уміння вести переговори
- Гнучкість розуму

Global Challenge Insight Report

## The Future of Jobs

Employment, Skills and
Workforce Strategy for the
Fourth Industrial Revolution

January 2016

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

ECDL Foundation

# ТОП-10 навичок 2030

- Емоційний інтелект
- Вміння працювати в команді
- Рішення комплексних проблем
- Здатність швидко навчатися
- Адаптивність
- Аналітичне мислення
- Критичне мислення
- Управління проектами
- Стратегічне мислення
- Ініціативність/управління змінами



НАВИЧКИ ДЛЯ УКРАЇНИ 2030: ПОГЛЯД БІЗНЕСУ
ФОРУМ "БІЗНЕС-УНІВЕРСИТЕТИ" 2016

джерело: звіт Центру КС

www.csr-ukraine.org



ECDL
Foundation

# A Digital Europe needs Digital Skills

## Young People

**Nearly all young people are online**

but they need to be prepared for their digital future

**95% Online**

**95%** of the 16-24 year olds in the EU are **regular internet users**

### Education has to adapt to the digital era

**Less than half** of **children** are in **schools** that are **highly digitally-equipped**

Only **20-25%** of school children are taught by **digitally confident & supportive teachers**

**Curricula** need to be redesigned to **integrate digital skills & learning**

Coding is Fun

### We need to raise the number of students in ICT – especially women

The number of **ICT graduates** has **decreased by 13%** between 2006 & 2013

There are **twice as many male as female graduates** in STEM (science, technology & mathematics)

**Students in all domains** need to be **educated in digital skills, not just those** who choose an **ICT career**

## Working Age People

### Digital technologies create new jobs

NOW HIRING IT Professionals

There is **rising demand** for **ICT professionals**. These jobs are in **all sectors** of the economy

**+4%**/year

Every job in ICT creates **3 more jobs** elsewhere in the economy

With **high unemployment** in Europe, these jobs are sorely **needed**

### The whole labor force needs to be digitally trained

**37%** of the **EU labor force** have **low** or **no digital skills**

**9% Internet**

**9%** of the labor force in the EU has **never used the Internet**

The **lack of graduates** in ICT is leading to a **gap** estimated at **756 000 unfilled jobs by 2020**

RECRUITMENT DEPARTMENT

### Provide training & support for careers in digital domains

**online learning**
Success!!!

**Coding clubs**
I ♥ CODING

**apprenticeships**

## Older People

**Everybody** needs to go **digital**

By 2060 **one in three Europeans** will be **over 65** years old

**37%** of people aged 55-74 have **never used** the Internet

**Services** are increasingly designed as **digital by default**. The need for **public services** is particularly **strong amongst the older population** but only **23%** access them online

### We need to raise awareness of the benefits of going digital

The **most common reasons** for **not going online** are

– lack of interest
– lack of skills
– cost factors

??

**Provide support** to **get online & develop digital skills**

**Digital services** should be **accessible to everyone**

Use **innovative solutions** e.g. twinning with younger people online

**Disabilities** act as **barriers** to **technology** use

# The Fallacy of the 'Digital Native': Why Young People Need to Develop their Digital Skills

"We often wrongly assume that young people have a complete set of digital skills because they grow up surrounded by digital technologies. The skills that they acquire on the daily basis by using social networks and retrieving online content are not sufficient in the labour market. Required productivity skills can be acquired only by adequate digital education and training."
—*Kestutis Juskevicius, Former EU Digital Champion Lithuania*

"Simply providing the equipment does not help young people understand how that technology can better their lives without education and training", Nishant Shah, Director, Centre for Internet and Society, India
— *'What does it mean to be digital native?'*, *Oliver Joy, CNN*

"There is a myth about the digital native and the Google generation kid who, because they are young, are seen as being more computer literate than their parents, but that is totally wrong.", Dan Russell, Google
— *'Great internet age divide is a myth'*, *Dan Russell, Google*

## Academic

"Digital literacy does need to be taught: young people have usually acquired some knowledge of computer systems, but their knowledge is patchy. The idea that teaching this is unnecessary because of the sheer ubiquity of technology that surrounds young people as they are growing up – the 'digital native' – should be treated with great caution."
—*"Shut down or restart? The way forward for computing in UK schools"*, *The Royal Society, 2012*

"Young people's engagements with digital technologies are varied and often unspectacular"
— *'The digital native – myth and reality'*, *Neil Selwyn, Academic, Monash University, Australia. Aslib Proceedings: New Information Perspectives, 2009.*

"In my fieldwork, I often found that teens must fend for themselves to make sense of how technologies work and how information spreads … It is dangerous to assume that youth are automatically informed."
— *'It's Complicated'*, *Danah Boyd, Researcher and Author, Microsoft, 2014*

"Talk of digital natives obscures children's need for support in developing digital skills"
— *'EU Kids Online Final Report'*, *Sonia Livingstone, Academic, London School of Economics, 2011*

"76% of computer science students considered themselves to have a good level of knowledge, but only 45% answered the technical security questions correctly."
— *'Security of the Digital Natives'*, *Tech and Law Center, 2014*

"There is a growing body of academic research that has questioned the validity of the generational interpretation of the digital native concept."

http://www.ecdl.org/index.jsp?p=2417&n=3000

# 39% населення ЄС має недостатні цифрові навички, 14% не має жодних.

Згідно з нещодавно побудованим **Індикатором цифрових навичок\***, на основі Структури цифрової компетентності\*\*, 14% населення ЄС не має ніяких цифрових навичок (2012); починаючи з 6% в Швеції до 50% в Румунії.

З огляду на те, що для ефективного функціонування в цифровому суспільстві потрібно більше, ніж навички на початковому рівні, майже половину населення ЄС (47%) можна розглядати як недостатньо кваліфікованими у цифровому відношенні (які мають низькі, або не мають ніяких цифрових навичок).

**Цифрові навички населення (% людей)**

■ Без навичок ■ Низькі ■ Базові ■ Вище базових
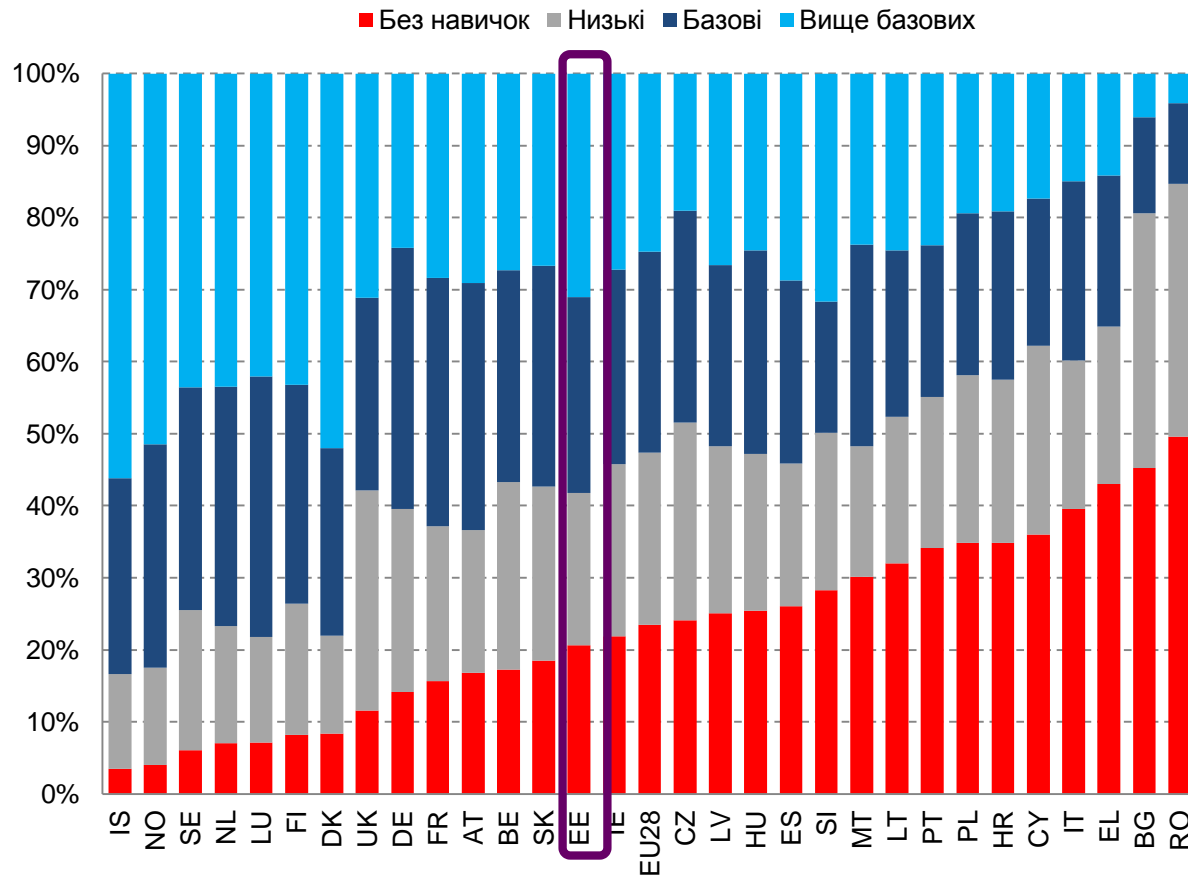


*Джерело:* на основі даних Євростату

http://ec.europa.eu/digital-agenda/news-redirect/16547

# Digital Skills Policy

**DIGITAL AGENDA FOR EUROPE**
A Europe 2020 Initiative

**eSKILLS FOR JOBS 2015**

European Commission

**Grand Coalition for Digital Jobs**

Riga
Declaration
eSkills for Jobs

ECDL
Foundation

# Цифровий порядок денний

# Digital Agenda: Grand Coalition for Digital Jobs

Розвиток цифрової грамотності та навичок громадян

# Концепція розвитку системи надання електронних послуг в Україні



**Електронна послуга**

- Заявники Е-кабінет
- Ідентифікація/автентифікація
- Подача документів в е-формі
- Електронні платежі
- Електронні е-документів
- Обробка е-взаємодія
- Інформування про хід розгляду справи
- Видача результату

✓ Електронні консультації  ✓ Запис на прийом  ✓ Оцінка якості  ✓ е-звернення



e-Citizen

## 8 KEY COMPETENCES

Communication
in the mother tongue

Communication
in foreign languages

Mathematical competence
and basic competences in
science and technology

Digital competence

Learning to learn

Social and civic
competences

Sense of initiative
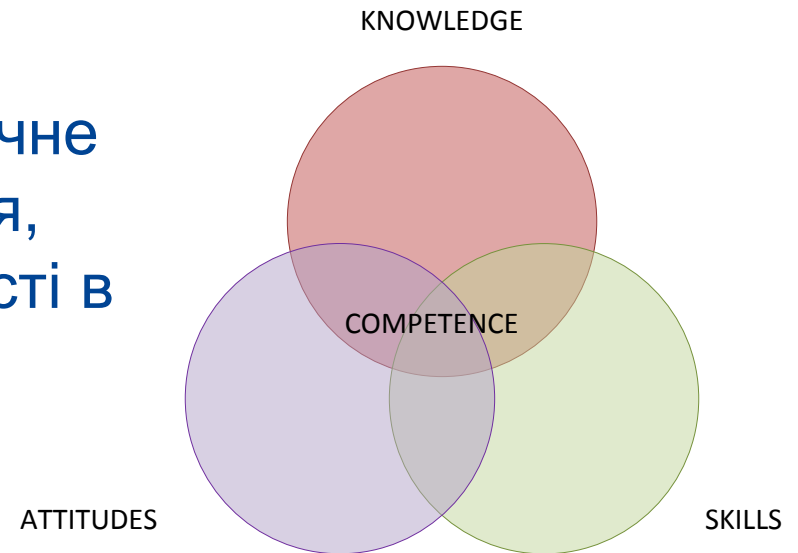and entrepreneurship

Cultural awareness
and expression

Цифрова компетенція є однією з 8 ключових компетенцій

http://files.eun.org/etwinning/EN_Developing%20pupil%20competences%20through%20eTwinning.pdf (див ст. 44)

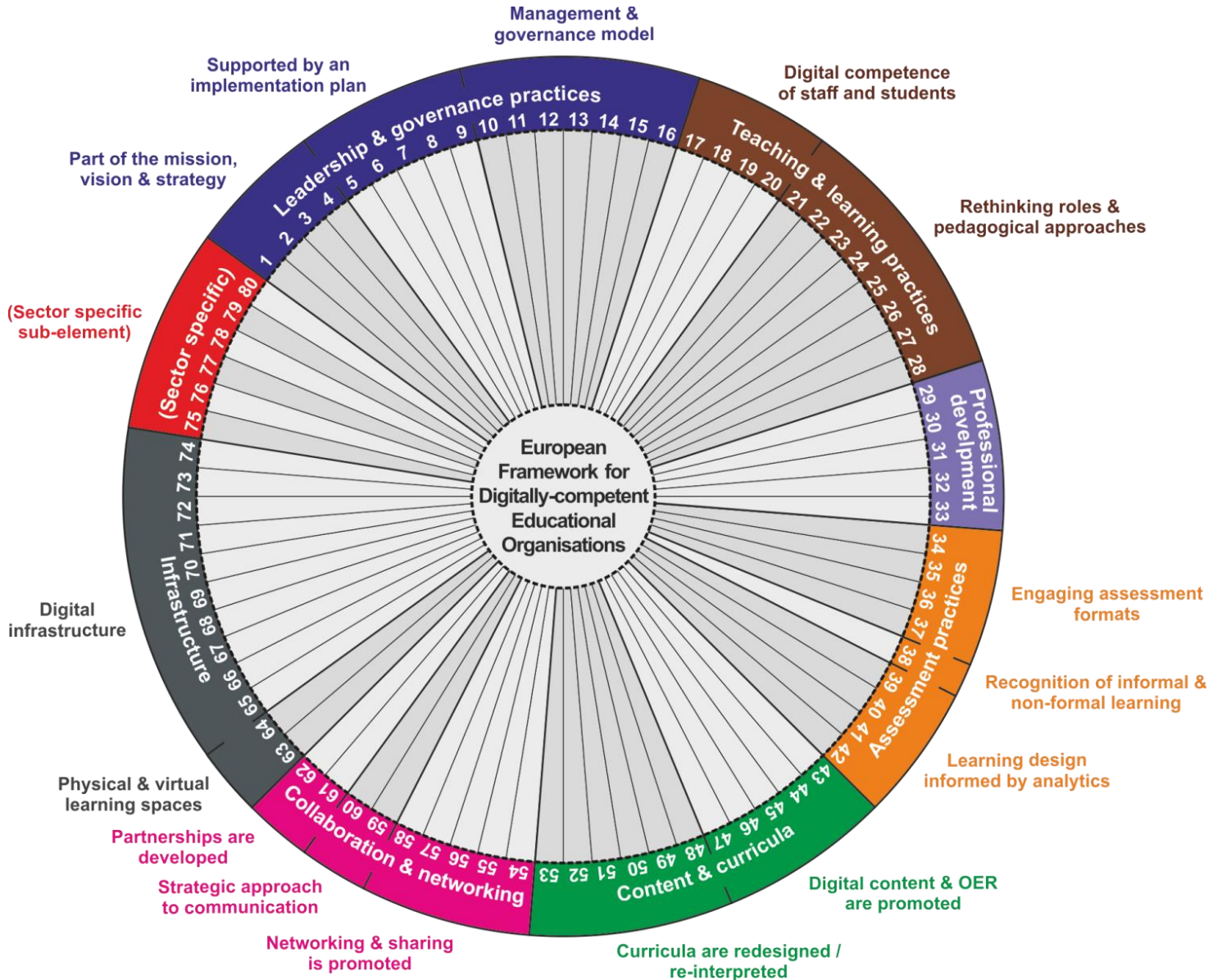# Цифрова компетентність ≠ використання інструментів ІКТ

Цифрова компетентність передбачає впевнене та критичне використання ІКТ для навчання, зайнятості, саморозвитку і участі в житті суспільства.
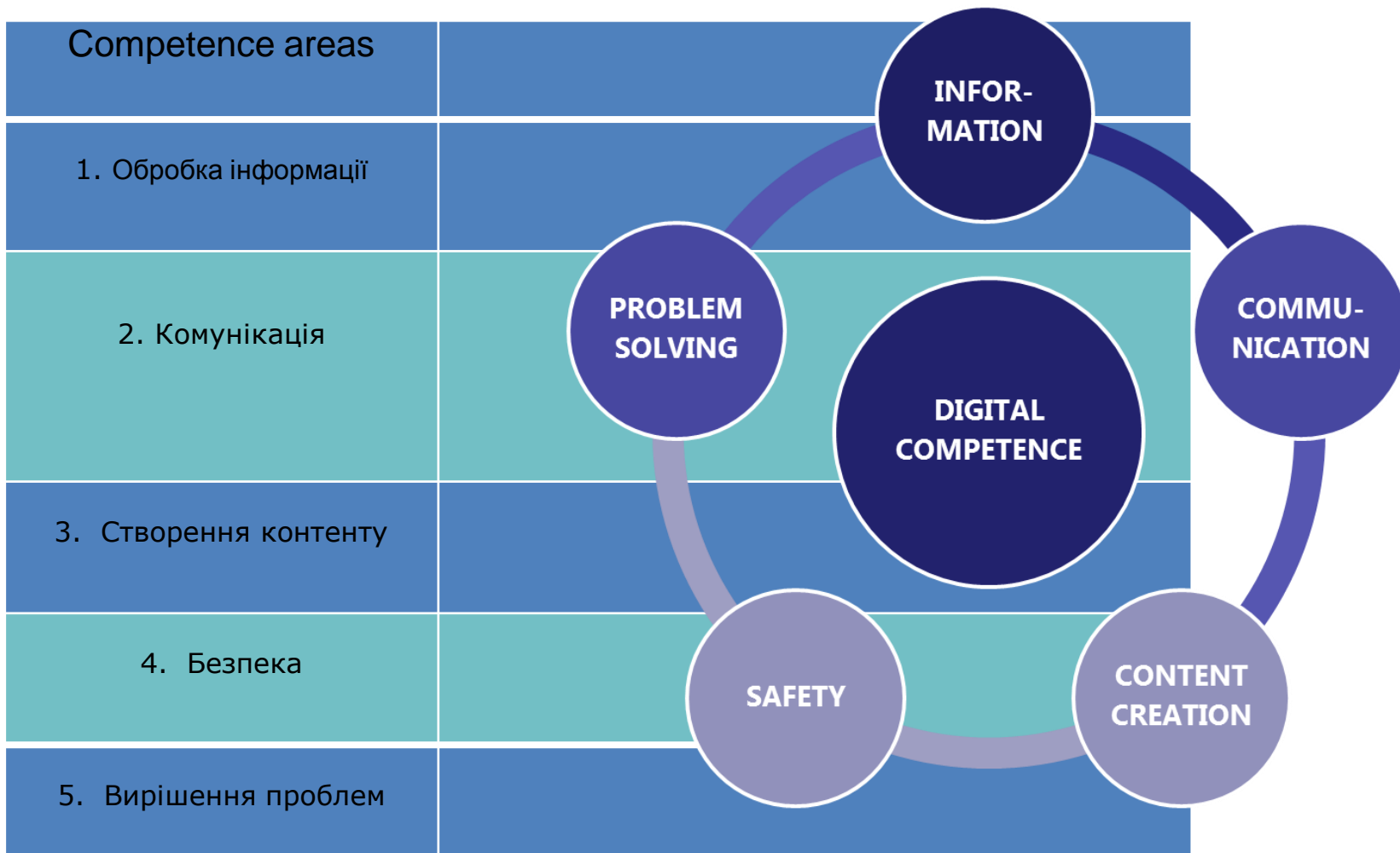


KNOWLEDGE

COMPETENCE

ATTITUDES

SKILLS

ECDL
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# Структура цифрової компетентності (DIGCOMP)

DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe.

Author: Anusca Ferrari
Editors: Yves Punie and Barbara N. Brečko

2013

- ▶ Структура цифрової компетентності для громадян
- ▶ Структура цифрової компетентності для вчителів
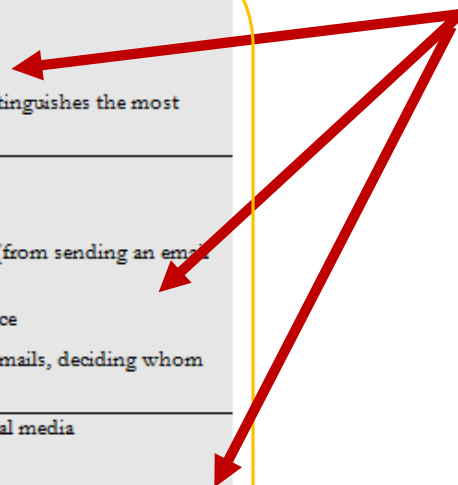- ▶ Структура цифрової компетентності освітніх організацій (DigCompOrg)

European Framework for Digitally-competent Educational Organisations

**Leadership & governance practices** (1–16)
- Management & governance model
- Supported by an implementation plan
- Part of the mission, vision & strategy

**(Sector specific)** (75–80)
- (Sector specific sub-element)

**Teaching & learning practices** (17–28)
- Digital competence of staff and students
- Rethinking roles & pedagogical approaches

**Professional development** (29–33)

**Assessment practices** (34–42)
- Engaging assessment formats
- Recognition of informal & non-formal learning
- Learning design informed by analytics

**Content & curricula** (43–53)
- Digital content & OER are promoted
- Curricula are redesigned / re-interpreted

**Collaboration & networking** (54–62)
- Partnerships are developed
- Strategic approach to communication
- Networking & sharing is promoted

**Infrastructure** (63–74)
- Digital infrastructure
- Physical & virtual learning spaces

# Структура цифрової компетентності



| Competence areas | | |
| --- | --- | --- |
| 1. Обробка інформації | | |
| 2. Комунікація | | |
| 3. Створення контенту | | |
| 4. Безпека | | |
| 5. Вирішення проблем | | |

INFOR-MATION

PROBLEM SOLVING

DIGITAL COMPETENCE

COMMU-NICATION

SAFETY

CONTENT CREATION

| Competence areas | 21 Competences |
|---|---|
| 1. Information | 1.1 Browsing, searching, & filtering information<br>1.2 Evaluating Information<br>1.3 Storing and retrieving information |
| 2. Communication | 2.1 Interacting through technologies<br>2.2 Sharing information and content<br>2.3 Engaging in online citizenship<br>2.4 Collaborating through digital channels<br>2.5 Netiquette<br>2.6 Managing digital identity |
| 3. Content creation | 3.1 Developing content<br>3.2 Integrating and re-elaborating<br>3.3 Copyright and Licences<br>3.4 Programming |
| 4. Safety | 4.1 Protecting devices<br>4.2 Protecting data and digital identity<br>4.3 Protecting health<br>4.4 Protecting the environment |
| 5. Problem solving | 5.1 Solving technical problems<br>5.2 Expressing needs & identifying technological responses<br>5.3 Innovating, creating and solving using digital tools<br>5.4 Identifying digital competence gaps |

| Dimension 1 Name of area | Communication | | |
|---|---|---|---|
| **Dimension 2** | **2.1 Interacting through technologies** | | |
| Competence title and description | To interact through a variety of digital devices and applications, to understand how digital communication is distributed, displayed and managed, to understand appropriate ways of communicating through digital means, to refer to different communication formats, to adapt communication modes and strategies to the specific audience | | |
| **Dimension 3** | **A - Foundation** | **B- Intermediate** | **C- Advanced** |
| Proficiency levels | I can interact with others using basic features of communication tools, (e.g. mobile phone, VoIP, chat or email). | I can use several digital tools to interact with others using more advanced features of communication tools (e.g. mobile phone, VoIP, chat, email). | I am engaged in the use of a wide range of tools for online communication (emails, chats, SMS, instant messaging, blogs, micro-blogs, SNS). I can adopt digital modes and ways of communication that best fit the purpose. I can tailor the format and ways of communication to my audience. I can manage the different types of communication I receive. |
| **Dimension 4** | | | |
| Knowledge examples | Is aware of different digital communication means (e.g. email, chat, VoIP, video-conference, SMS) Knows how messages and emails are stored and displayed Knows the functionality of several communication software packages Knows the benefits and limits of different means of communications and distinguishes the most appropriate ones to the context | | |
| Skills examples | Is able to send an email, write a blog post, an SMS Is able to find and contact peers Is able to edit information in order to communicate it through several means (from sending an email to making a presentation in slides) Evaluates his/her audience and can tailor communication according to audience Is able to filter the communication he/she receives (for instance, sorting out emails, deciding whom to follow on micro-blogging social sites, etc) | | |
| Attitude examples | Is confident and comfortable in communicating and expressing through digital media Is aware of the code of conduct appropriate to the context Is aware of the risks linked with online communication with unknown people Is actively engaged in online communication Is willing to select the most appropriate communication means according to the purpose | | |

| Dimension 5 Application to purpose | | | |
|---|---|---|---|
| **Learning** | I use a chat or a discussion forum to communicate with other students on my course. | I use a chat to communicate with other students, when necessary I can also use a group chat and moderate it. When needed, I also use VoIP to talk to other students. | I use several communication tools to communicate with other students (mobile phone, VoIP, chat or email). I use several features of VoIP – when I work on a project with other students: I can use screen share feature, I can also record a conversation and broadcast it. I know which communication tool to select, depending on the purpose and the size of the audience. |
| **Employment** | I handle travel arrangements and use a mobile telephone and email to communicate with others. | When I handle travel arrangements I use a mobile telephone a lot, but also use email and VoIP to communicate with some people. I can organize a discussion with more participants using VoIP. | When I travel I use several communication tools (e.g. (mobile phone, VoIP, chat or email), I can organise a meeting using VoIP, using different features (file, screen sharing, recording the conversation), I can also run a video-conference among remote sites and moderate it. I know when to use VoIP and when videoconference tools. |

**50 000 000 CVs**

# europass

**2005 — 2015**

Avades uksi Euroopas õppimiseks ja töötamiseks

Europassi tutvustus | **Europassi dokumendid** | Europass ja sina | Euroopas õppimine ja töötamine | **Ressursid**

Europassi CV | Europassi oskuste mapp

## Europassi CV

Dokument, mis võimaldab sul tõhusalt ja selgelt kirjeldada oma oskusi ja kvalifikatsioone.

### Koosta oma CV veebis

Järgi veebijuhiseid ning salvesta täidetud dokument
Uuenda oma CVd veebis

### Uuenda oma CVd (PDF+XML) veebis

### Lae alla CV põhi koos juhistega

### Näited

---

**Europassi CV**

Koosta oma CV veebis

Uuenda oma CVd (PDF+XML) veebis

Lae alla CV põhi koos juhistega

Näited

## PERSONAL SKILLS

**Mother tongue(s):** English, Greek

**Other language(s)**

| UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|
| Listening | Reading | Interaction | Production | |

**French**

| B2 | A1 | B1 | B1 | C1 |
|---|---|---|---|---|
| Certificate of proficiency (B2) | | | | |

**German**

| B1 | A2 | B2 | B2 | C2 |
|---|---|---|---|---|
| Goethe Stufe 3 (B2) | | | | |

Levels: A = Basic user B = Independent user and C = Proficient user
Common European Framework of Reference for Languages

| SELF-ASSESMENT | | | | |
|---|---|---|---|---|
| Information processing | Communication | Content creation | Safety | Problem solving |
| Basic user | Proficient user | Independent user | Proficient user | Proficient user |

Digital competence framework - Self-assessment grid

| ECDL Advanced (Word Processing, Spreadsheets, Database, Presentation) |
|---|

**ECDL**
**Foundation**

THE e-SKILLS MANIFESTO 2014

eSKILLS FOR JOBS 2014

European Commission

Grand Coalition for Digital Jobs



Our Mission

Advocacy

Certification Programmes

Global Network

Our Values

Social Responsibility

Vendor Neutrality

Quality

ECDL Foundation

# Глобальне охоплення

41 мова

14 мільйонів кандидатів

150 країн

38 мільйонів тестів

24,000 центрів тестування
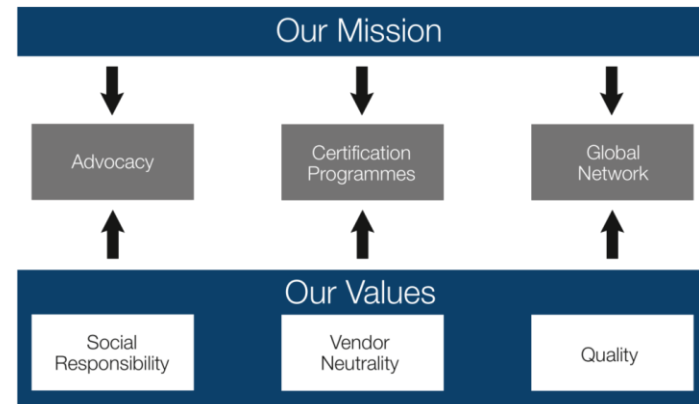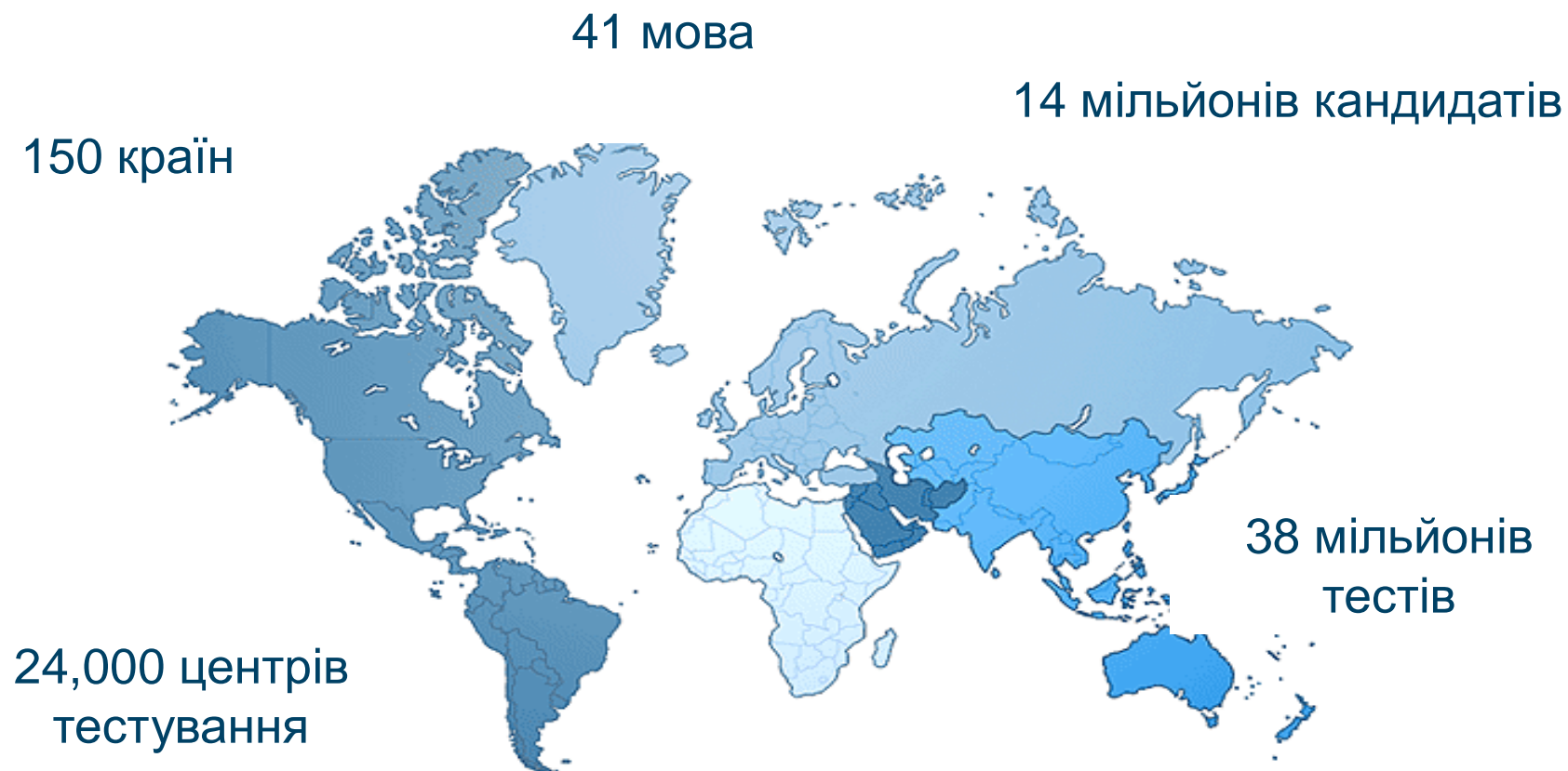
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# Організації, з якими працює Фонд ECDL

## NGOs and International Organisations:

- World Bank
- UNDP United Nations Development Programme
- United Nations HQ
- Asian Development Bank (ADB)
- UNESCO CWR
- UNHCR United Nations High Commissioner for Refugees
- United Nations Relief and Works Agency (UNRWA – Palestine)
- USAID United States Agency for International Development Aid
- UNAIDS United Nations Joint United Nations Programme on HIV/AIDS
- Camara
- World Health Organization (WHO Congo)

**Private Sector:**

- Toyota Tsusho Africa
- DHL – Ireland
- Volkswagen Germany
- Del Monte Pacific Inc./ Del Monte Foundation – the Philippines
- Johnson & Johnson Medical – South Africa
- L'Oréal – France
- Emirates Airlines
- Portugal Telecom
- Siemens – Luxembourg
- Spar – Austria

# SNEF & ECDL

- Більш ніж 4000 співробітників підготувались та пройшли сертифікацію ECDL
- Більш ніж 100 підприємств малого і середнього бізнесу брали участь в проекті
- Проект підтримав уряд Сінгапуру



Singapore National Employers Federation
preserving industrial harmony in Singapore

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| | Microsoft | Google | Apple | Open |
|---|---|---|---|---|
| **Прикладні програми** | Microsoft Office 2010 | | iWork | LibreOffice The Document Foundation / Apache OpenOffice |
| **Web додатки** | Microsoft Office 365 | Google Docs | | |
| **Мобільні додатки** | | Quickoffice Mobilize Your World. | iWork | |
| **Хмарне зберігання** | SkyDrive | Google Drive | iCloud | |

# Skills for the Workplace

**TABLE 1**

Information Worker Time Spent/Wasted Dealing with Challenges Related to Personal Productivity in Western Europe

| | Hours Spent per Week | % of Time Spent | Hours Wasted per Week | % of Time Wasted | % of Organizational Productivity Lost |
|---|---|---|---|---|---|
| Pulling information that exists in different files and formats together in one document | 3.1 | 6.7% | 0.8 | 1.7% | 1.3% |
| Dealing with problems and time-consuming tasks that arise with paper documents | 2.8 | 6.0% | 0.7 | 1.5% | 1.2% |
| Searching for, but not finding, documents | 1.9 | 4.0% | 1.9 | 4.0% | 3.2% |
| Recreating documents because the current or the right version can't be found or got lost | 1.5 | 3.2% | 1.5 | 3.2% | 2.6% |
| Total | 9.4 | 19.9% | 4.9 | 10.4% | 8.4% |

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# Skills for the Workplace

| TABLE 2 | | | | | |
|---|---|---|---|---|---|
| **Information Worker Time Spent/Wasted Dealing with Challenges Related to Collaboration in Western Europe** | | | | | |
| | Hours Spent per Week | % of Time Spent | Hours Wasted per Week | % of Time Wasted | % of Organizational Productivity Lost |
| Gathering everyone's feedback and consolidating it into a single document | 3.7 | 7.8% | 0.9 | 1.9% | 1.6% |
| Consolidating data from forms | 3.1 | 6.6% | 3.1 | 6.6% | 5.3% |
| Deciphering the feedback | 2.4 | 5.1% | 0.6 | 1.3% | 1.0% |
| Unraveling version control problems created by awkward routing, review, approval, or signature processes | 1.9 | 4.0% | 1.9 | 4.0% | 3.2% |
| Total | 11.0 | 23.4% | 6.5 | 13.7% | 11.1% |

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# Digital Skills in the Workplace

Key Digital Skills for the workforce

- **Working with Documents** – productivity applications still key

- **Communication** – email, internal/external social tools, conferencing

- **Collaboration** – data sharing, collaborative editing, project teamwork

- **Platform Flexibility** – to work effectively with multiple devices

- **Search & Research** – managing information overload

- **Security & Privacy** – awareness of threats and responsibilities for data

- **Enterprise systems - ERP, CRM**

- **Industry-specific technologies**

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# Digital Skills Policy



| | Workforce | |
| --- | --- | --- |
| | Millions | % |
| **Digital Muggle** | 2.2 | 7% |
| **Digital Citizen** | 10.8 | 37% |
| **Digital Worker** | 13.6 | 46% |
| **Digital Maker** | 2.9 | 10% |
| | 29.5 | |



Crunched by the Numbers:
**THE DIGITAL SKILLS GAP IN THE WORKFORCE**
March 2015

ECDL Foundation
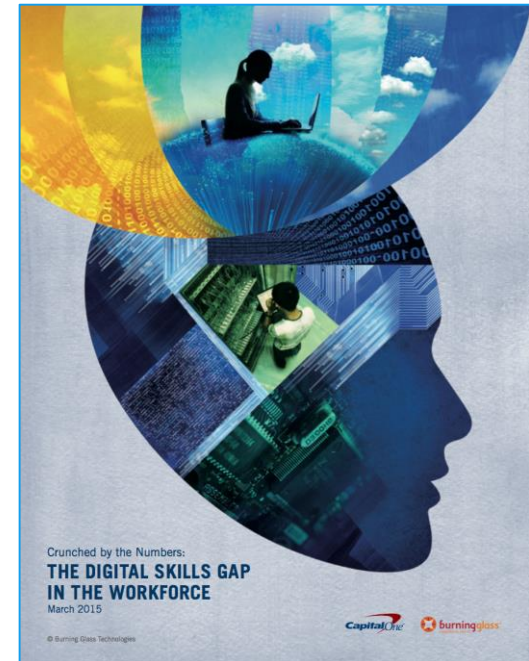
# 'Новий ECDL' – Структура сертифікації
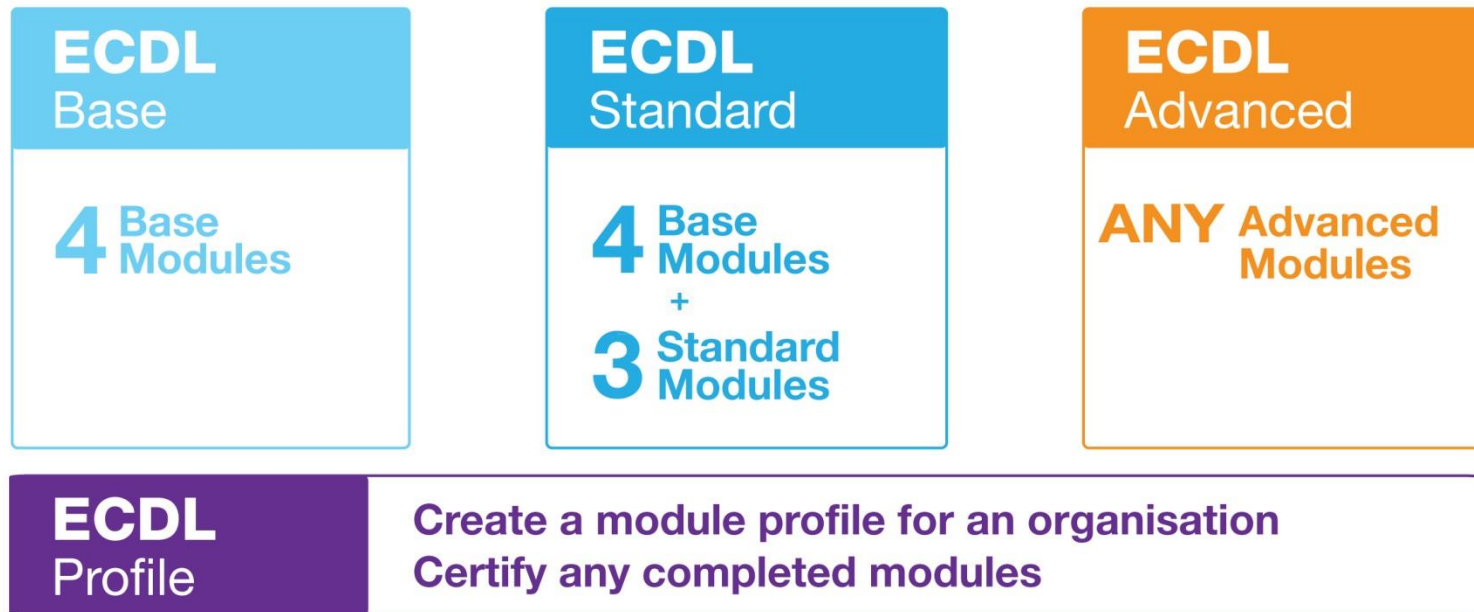
# 'Новий ECDL' – Модулі

## ECDL Modules

### Base
- Computer Essentials
- Online Essentials
- Word Processing
- Spreadsheets

### Standard
- Presentation
- Using Databases
- Web Editing
- Image Editing
- Project Planning
- IT Security
- Online Collaboration

### Advanced
- Advanced Word Processing
- Advanced Spreadsheets
- Advanced Databases
- Advanced Presentation

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# Новий ECDL - Сертифікація

| **Base** Modules | **Standard** Modules | **Advanced** Modules |
|---|---|---|
| Computer Essentials | Presentation | Advanced Word Processing |
| Online Essentials | Using Databases | Advanced Spreadsheets |
| Word Processing | Web Editing | Advanced Databases |
| Spreadsheets | Image Editing | Advanced Presentation |
| | Project Planning | |
| | IT Security | |
| | Online Collaboration | |

- **Сертифікат ECDL Base**
  - 4 Базових модулі
- **Сертифікат ECDL Standard**
  - 4 Базових модулі + 3 **Стандартні** модулі
- **Сертифікат ECDL Expert**
  - 3 Професійні модулі
- **Сертифікат ECDL Profile**
  - Будь-які модулі, 1 або більше

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**Авторизований тестовий центр**
cso.procom.zp.ua
ecdl.csoprocom.com.ua

# Digital Skills Policy

**Department for Education**

Statutory guidance

## National curriculum in England: computing programmes of study
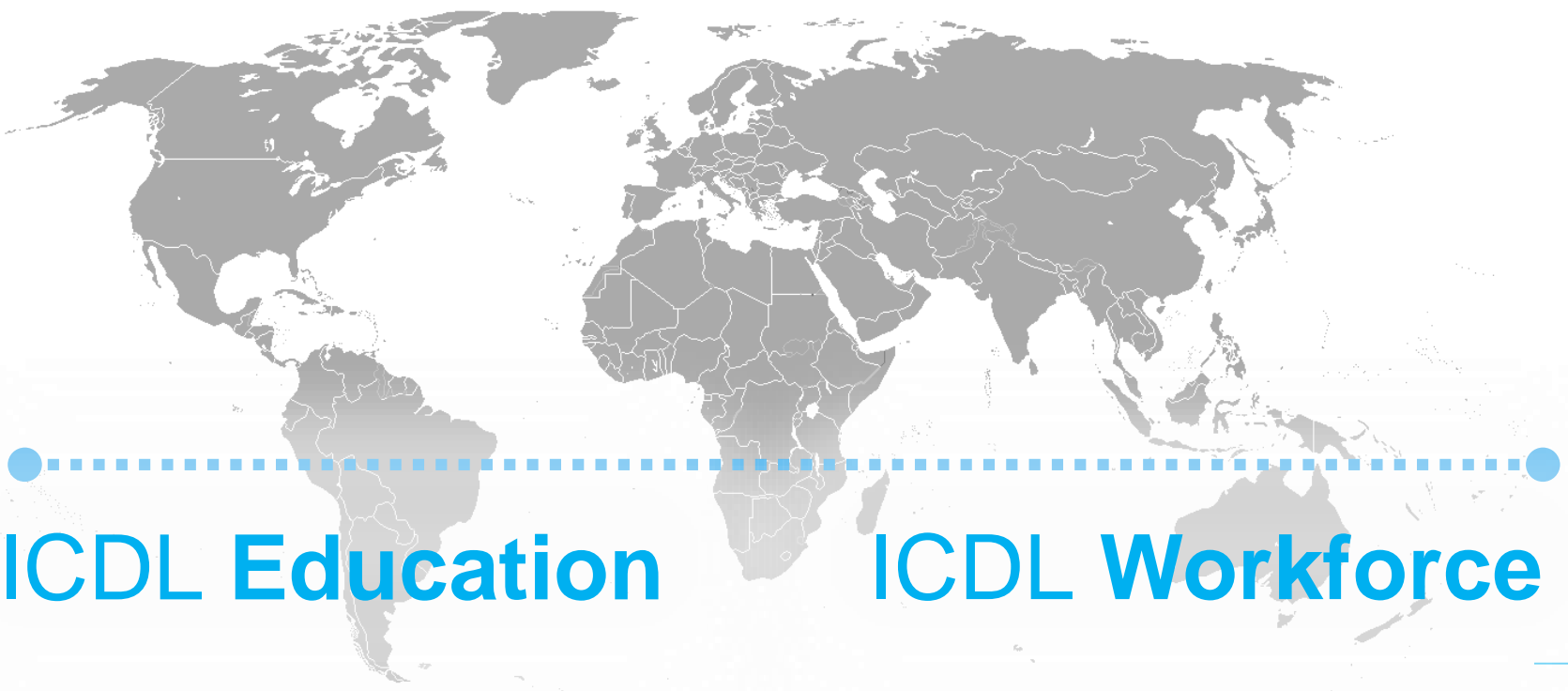
Published 11 September 2013

**Contents**
Key stage 1
Key stage 2
Key stage 3
Key stage 4

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# Global Lifelong Learning Solutions

Primary      Secondary    3rd Level

School ································································· Workplace

Vocational Further Education Corporate

ICDL **Education**        ICDL **Workforce**

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2005

Luca Bruno / AP

2013

NBC NEWS

Michael Sohn / AP

# Дякую за увагу!

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