

# H2020 Innovation and Research opportunities for ICT in Education

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# *Outline of the presentation*

- **Context / Policy and R&I background**
- **Challenges & Scope**
- **Research and Innovation WP 2014-15**
- **Conclusions**

# *Digital Agenda for Europe*

**"Member States to mainstream eLearning in national policies for the modernisation of education and training, including in curricula, assessment of learning outcomes and the professional development of teachers and trainers."**

# Challenges

- Promote excellence in education and skills through pervasive access to digital learning and 21st century competencies
- Ensure adequacy between skills and employment market
- Support to a triple play: innovation, inclusion (digital literacy) and economic impact (growth and jobs), and development of learning technology industry in Europe.

# Recent EU actions

## Initiative Opening up Education (2013)

To support faster and wider uptake of ICT and Open Education Resources in Education and Training

## Grand Coalition for ICT jobs (2013)

A multi-stakeholder partnership helping to address a shortfall in the number of European citizens with ICT professional skills and to exploit the employment creation potential of ICT

## Research and innovation on ICT for Learning

Close to 40 projects (185 MEUR between 2007-2013) , New calls under H2020 contributing to shape the future of education and training

# *Digital technologies in Slovenia*

- **Equipment - low levels of access**
- **Higher levels of high-speed broadband provision**
- **Frequency of use of technology by teachers is generally above the EU but use by students is lower.**
- **Teachers' and students' confidence in their ICT skills is average**
- **Professional development in ICT seems to be rather uneven**
- **Support measures for using ICT in teaching and learning are good**

*Source: EC ICT and Schools Survey (2013)*

**OPPORTUNITY : USE OF ESIF**



# Horizon 2020 -What is new?

- A single programme (*FP7 + CIP + EIT*)
- Strong focus on societal challenges (game changing for ICT...)
- More innovation
- Reaching out to non-traditional actors
- More risk taking
- Strengthened support for high-tech SMEs
- More open, light & fast schemes

# ICT and H2020





# Excellent Science - ICT



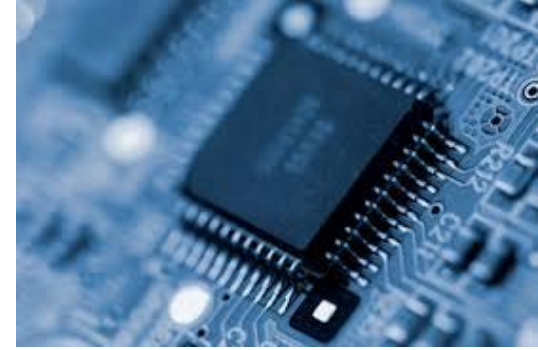
- **Future and Emerging Technologies (FET)**
  - FET Open: fostering novel ideas
  - FET Proactive: nurturing emerging themes and communities
  - FET Flagships: pursuing grand interdisciplinary science and technology challenges
- **Research infrastructures**
  - Developing the European research infrastructure for 2020 and beyond
    - **Development, deployment and operation of ICT-based e-infrastructures**

# Key principles for ICT R&I in the Societal Challenges

- Interoperability
  - Re-use and economies of scale
  - Breakthroughs leveraging the transformative power of ICT
  - Preparation for market deployment
- +
- Information for future digital policy



# Industrial Leadership - ICT



- **A new generation of components and systems:**
  - engineering of advanced embedded and resource efficient components and systems
- **Next generation computing:**
  - advanced and secure computing systems and technologies, including cloud computing
- **Future Internet:**
  - software, hardware, infrastructures, technologies and services
- **Content technologies and information management:**
  - ICT for digital content, cultural and creative industries
- **Advanced interfaces and robots:**
  - robotics and smart spaces
- **Micro- and nanoelectronics and photonics:**
  - key enabling technologies



HORIZON 2020



# What do we fund?





# Technologies for better human learning and teaching in WP 2014-15

- **Multidisciplinary research experimentations on smart learning environments**
- **Technology platform for digital learning**
- **Large scale pilots in real settings**
- **Procuring innovative solutions for digital learning and teaching**

# I - Research experimentations on smart learning environments

- Multidisciplinary research (neuroscience, pedagogical and learning theories, educational psychology as well as artificial intelligence)
- Focusing on adaptive and personalised learning and assessment
- Through multi-modal/multi-sensory interaction technologies and advanced interfaces
- Application scenarios include formal and informal education, including workplace learning.

**Budget 9 MEUR**



# II - Technology Platform Digital Learning

- **A framework and roadmap** for stakeholders to
  - **develop innovative technologies for learning**  
adaptive solutions; learning analytics, augmented reality; mobile learning, etc.
  - **address standards for interactive content**  
composition, re-use and distribution
  - **adaptation into learning scenarios**

*Led by industry in collaboration with academia*

**Budget 5 MEUR**

# III - Large scale pilots in real settings

- **Innovative digital educational tools, solutions and services for learning and teaching practices**
  - Engagement of teachers, learners and parents
  - Reducing time and physical space restrictions
  - Greater connection formal, non-formal and informal learning
- **Pilots to link all relevant stakeholders**
- As part of piloting scenarios, include also target group children and adults with mental or physical disabilities who undergo general education, lifelong learning or vocational training.

**Budget 28 MEUR**

# IV - Public procurement of innovative devices and software

- Coordinate the development of joint specifications and procuring innovative devices and software application in educational settings.

**Budget 10 MEUR**

# Expected impact

- **Reinforce European leadership**  
measured by the number of excellence centres collaborating through specific joint research experimentations and technology transfers programmes
- **Emergence of new innovative businesses**
- **Speed up the rate of technology adoption in E&T**
- **Contribute to "Opening up Education"**
- **New public-private partnerships**

**THANK YOU FOR YOUR ATTENTION!**