Innovation Ecosystem and Skills Development

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From Information Economy to Innovation Economy

• Information Economy → Knowledge Economy
  • Evolution from information and communications business to content based knowledge business

• Knowledge Economy → Innovation Economy
  • Evolution that emphasizes the role of new, innovative knowledge as an engine of the economy
  • Science <-> R&D <-> local new ideas
Innovation Economy = Learning Economy

• Emphasizes the role of Social Constructive Learning in innovation process – ”learning together”, ”co-creation”
• Sharing of information, knowledge and ideas is the fundamental starting point for learning and innovation
• ICT connects people, organizations and institutions to share and learn from each others
What is Innovation?

- Innovation is a new or significantly improved
  - product (good or service), or
  - process,
  - a new method, in business practices, workplace organisation or external relations

Who’s Innovation?

Top-down innovation

• S&T based innovation
  – Basic research to innovation
  – Applied research to innovation
• Large scale, management led innovation

Bottom-up Innovation

• Experimental development to innovation
• Small scale, practical, user led innovation
• Local innovation!!
Magnitude of Innovation

• **Breakthrough innovation**
  – Something that most people did not realize was possible
  – Disruptive innovation

• **Radical Innovation**
  – Major new businesses or that cause significant change in a whole industry and tend to create new value

• **Incremental Innovation**
  – Modification, refinement, simplification, consolidation, and enhancement of existing products, processes, services, and production and distribution activities.
  – The majority of innovations fall in this category also in developed economies
Openness of Innovation

• Proprietary (Closed) innovation
  – IPR’s protected with patents
  – Business based on business secrets, ”copy right”
  – Innovation made by in-house R&D
  – Slows down modifications

• Open Innovation
  – IPR’s protected with Open Source Definition, or similar
  – Business based on joint learning and sharing, ”copy left”
  – Innovation made jointly, co-creation
  – Speeds up modifications!!!!
Innovation Ecosystem

• Combining top-down, S&T based approach and practice based, bottom-up approach to "innovation ecosystem"
  – Help us to understand the complex nature of innovation
  – **Innovation evolves**, if the "ground" and "conditions" are "fertile"
  – Innovation Ecosystem suggests enhanced interaction and **collaboration** between different stakeholders of the economy in order to learn from each others
  – Emphasizes **learning** as the main process of innovation
  – Emphasizes **ICT** as the infrastructure for learning and innovation – not as a sector!!!
Innovation ecosystem – Multistakeholder Co-Learning Approach

INNOVATION

USERS

RESEARCH

BUSINESS

PUBLIC SECTOR
Education In OPEN Innovation Ecosystem

- Open information
  - Freedom of Speech !!
  - Free flow of ideas
  - Open virtual libraries,
  - Open source approach
  - Open public data

- Open Knowledge
  - Open Educational Resources (OER)
  - Life Long Learning
  - Integrating learning and working life
  - Communities of Practice

Open Innovation
- Sharing Ideas, inclusive innovation, co-creation, user driven innovation, living labs, hackathons, fast prototyping ...
Skills and innovation economy (21st Century Skills)

Information, Media and Technology Skills

• Information Literacy – how to access, evaluate and manage information
• Media Literacy – how to analyze, understand and create media products
• ICT Literacy – how to apply, use and benefit from ICT
Skills and innovation economy
(21st Century Skills)

Learning and innovation skills

• Creativity & Ideation - how to think differently
• Problem solving - how to think critically
• Communication - how to collaborate with others
Skills and innovation economy
(21st Century Skills)

Innovation to business (practice) skills

• Flexibility & adaptability - not always seeking comfort
• Initiative & self direction – not expecting clear instructions
• Productivity & accountability – set goals and keep the promise
• Entrepreneurship – skills and attitude to make business
Conclusion: Skills of Innovation ecosystem

• Skills needed in the innovation ecosystem are difficult to teach but can easily be learned if methods are conducive. **This is a huge challenge in education!!!!**

• Innovation skills are **not subject matter**, although they are associated to many school subjects like maths and science which can involve learners to search and analyze information, solving problems etc, but also art that can help us to think differently.

• **ICT is crucial for education** as there is no innovation without communication and collaboration - (But not because you can use ICT also for reading information from the screen - as many of the schools seem to have understood the role of ICT)