

Supply and demand: current situation, trends and forecasts

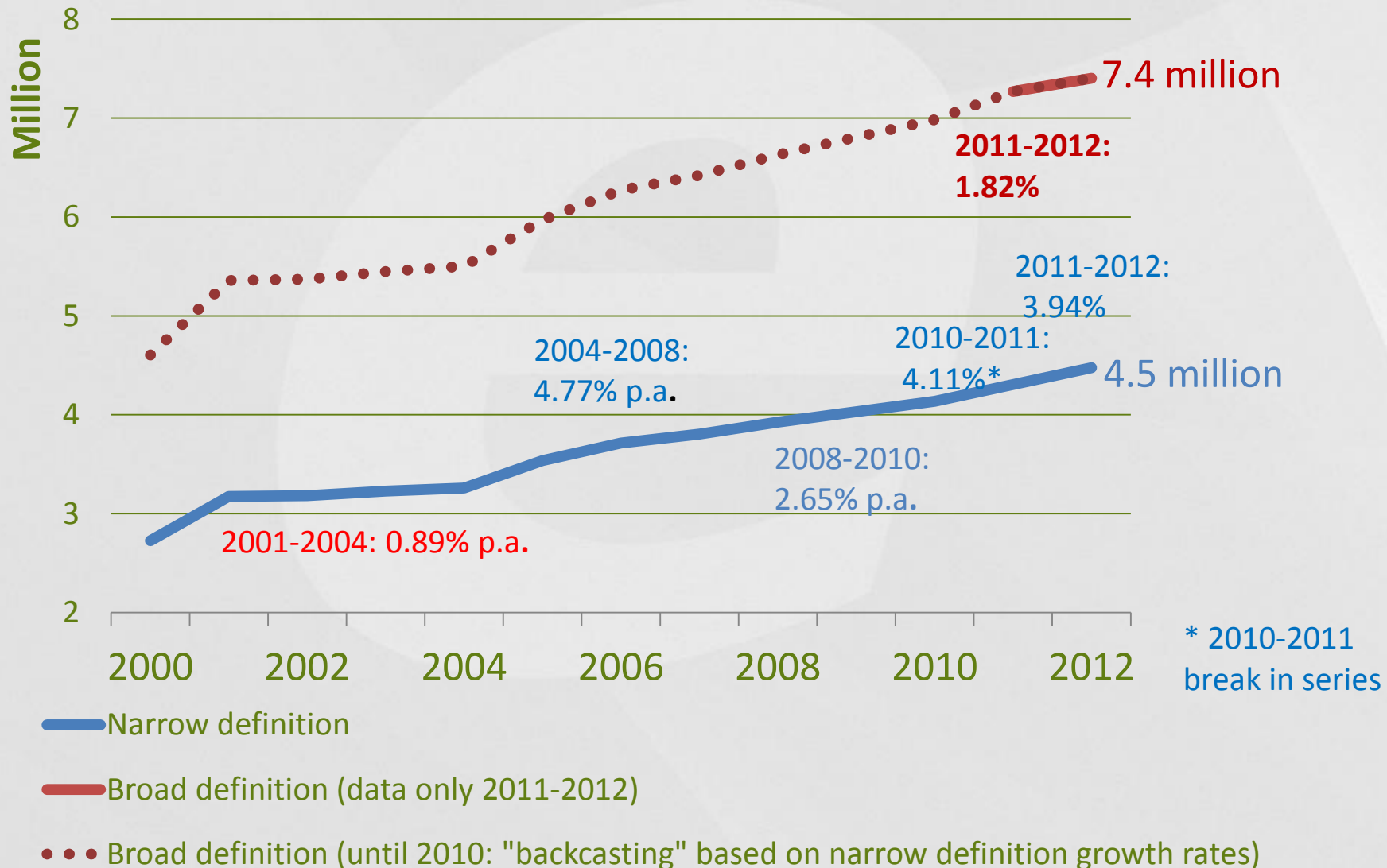
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European e-Skills 2013 Conference
Measuring Progress

Content

- Development of ICT workforce through crisis
- What's new compared to forecast in 2012
- Three new scenarios (2013-2020)
- New forecast of job creation and vacancies
- Job profile changes of workforce structure
- Conclusions

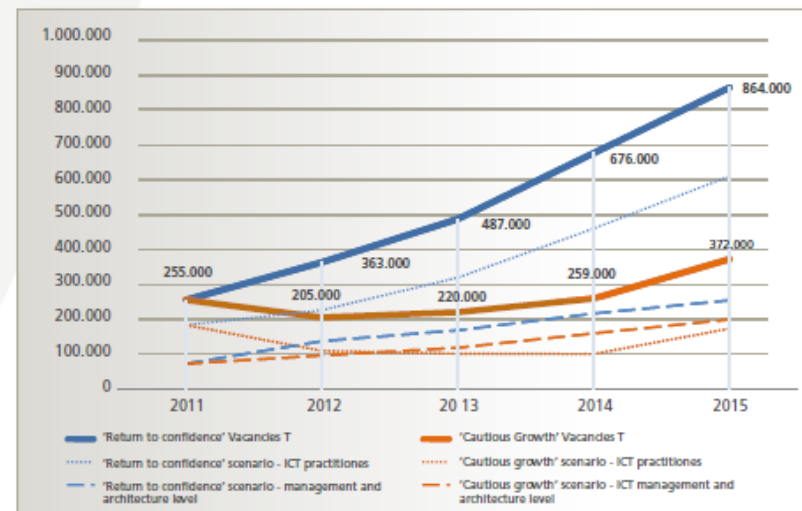
ICT Workforce Europe 2000-2012



Why new forecasts?

- Last forecasts (2012) were based on 2011 data
 - 110,000 -230,000 new jobs 2011-15
 - **Between 372,000 - 864,000 vacant jobs** (structural shortage) in 2015
- Economic outlook
 - GDP growth: 0.9% - 1.3%
 - IT investment growth : 2.1% - 2.9%

e-skills shortages: expected vacancies in Europe 2011 - 2015



Source: Empirica forecast Jan 2013

What's new?

- New forecasts (2013) based on 2012 data
- 2012 data include some major LFS input revisions
- Economic outlook
 - Assumed GDP growth: 1.0%
 - Assumed IT investment growth: 2.2%

ICT professional workforce forecasts (2012 – 2020)

Three scenarios

1. Main forecast scenario

Most likely future

2. Stagnation scenario

Slightly less favourable future

3. Disruptive boost scenario

Increased demand due to ICT based innovation and disruption

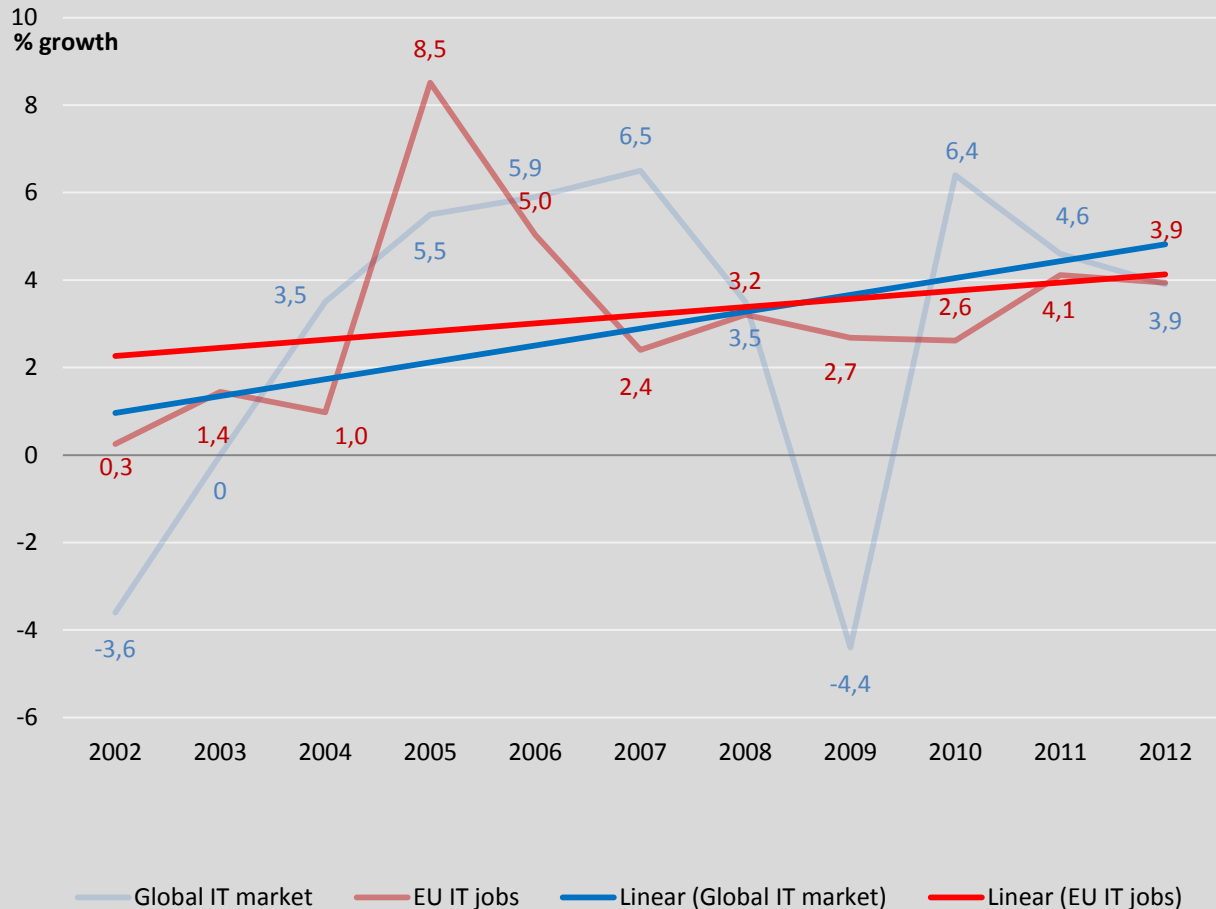
<i>Main Forecast Scenario</i>		<i>Ø Growth</i>
<i>GDP</i>	<i>2012-2015</i>	1.0%
	<i>2015-2020</i>	1.7%
<i>IT spending</i>	<i>2012-2015</i>	2.2%
	<i>2015-2020</i>	3.0%

<i>Stagnation Scenario</i>		<i>Ø Growth</i>
<i>GDP</i>	<i>2012-2015</i>	0.5%
	<i>2015-2020</i>	1.1%
<i>IT spending</i>	<i>2012-2015</i>	1.5%
	<i>2015-2020</i>	3.0%

<i>Disruptive Boost Scenario</i>		<i>Ø Growth</i>
<i>GDP</i>	<i>2012-2015</i>	1.2%
	<i>2015-2020</i>	2.3%
<i>IT spending</i>	<i>2012-2015</i>	2.3%
	<i>2015-2020</i>	5.4%

IT Market and ICT Workforce Growth

Global IT market and EU ICT jobs 2002-2012 (growth in %)



Source: Empirica based on EITO 2013 and Eurostat LFS data

- IT market growth driven by the emergence of new / disruptive technologies
- Long term trend growth is expected to remain positive (Third Platform impact)
- Correlation with total ICT jobs growth, but ICT workforce growth is more resistant to crisis than total IT spending

Methods – model properties

- Individual country based supply side inflows and outflows and demand side models
- Supply reacts to demand through labour mobility and non-ICT graduate “side entries”
- Demand does not react to supply – concept of demand potential and structural shortage

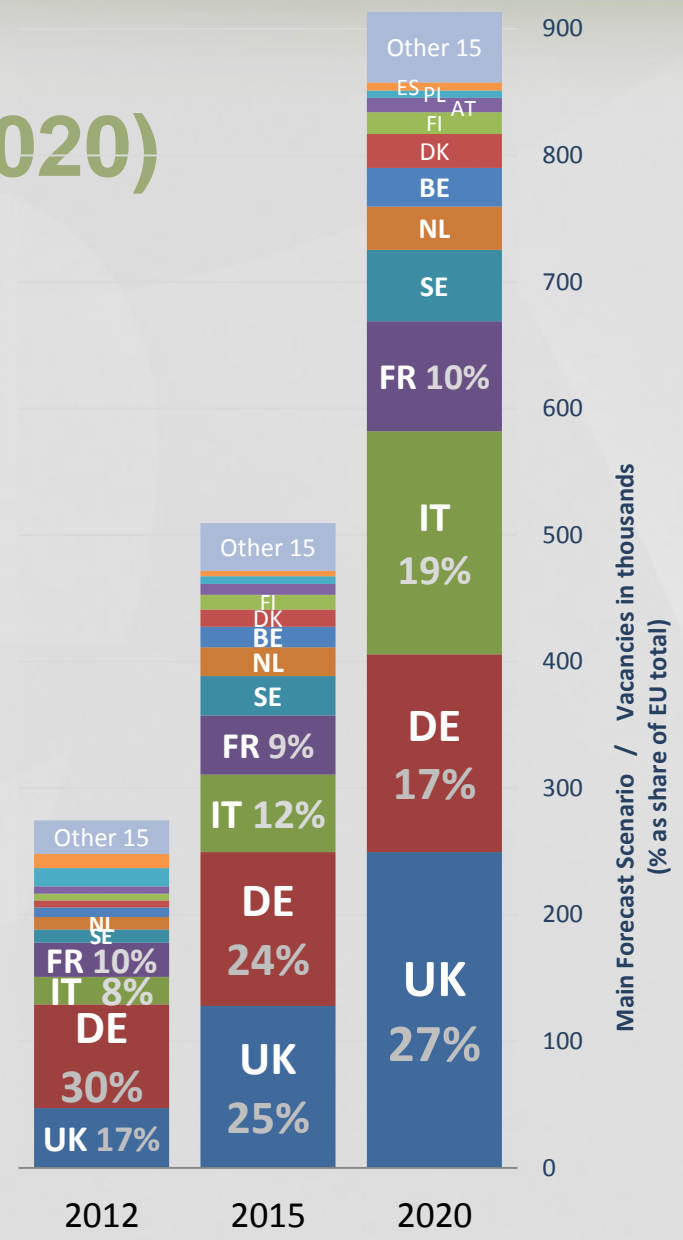
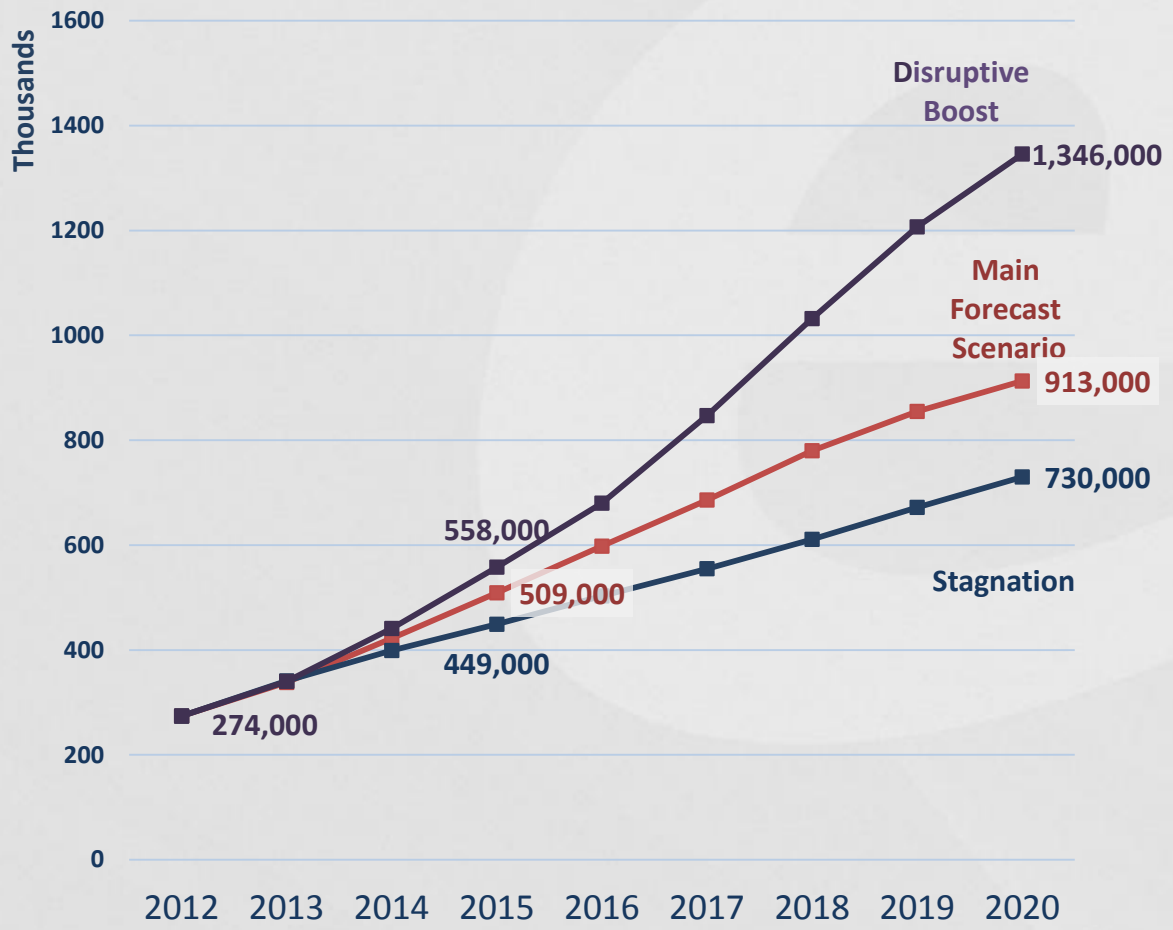
Main forecast scenario

- Assume growth differentials between countries (ECFIN forecast till 2014)
- Assume 2% growth in graduate figures
- Further assumptions about graduate entry rates, STEM inflow, side entries, mobility, replacement demand (exits) etc.

Result highlights

- **233,000 new jobs (2011-2015)**
 - +16 % jobs in management, architecture, analysis
 - + 1% jobs in other practitioner activities
- **At least 509,000 vacancies in 2015 (structural shortage)**
 - ~ 50% of vacancies in UK + DE

The Three Scenarios: Structural Shortages (2012-2020)



Caveats

- Prudent approach: Demand estimate very conservative
 - Level of ICT workforce growth in 2011-12 stronger than unexpected
- New emerging jobs not fully part of the forecasting model yet
 - ➔ *Shortage may be higher*
- Supply estimate conservative (side entries & non-ICT graduates)
 - Since 2007, market annually absorbed up to twice as many new workers (growth plus replacement) as ICT/CS graduates available
 - What will be the impact of the Grand Coalition for Digital Jobs?
 - ➔ *Shortage may be smaller*

ICT Workforce Growth (2011- 2012)

Management, business
architecture and analysis

8,5%

ICT practioners -
professional level

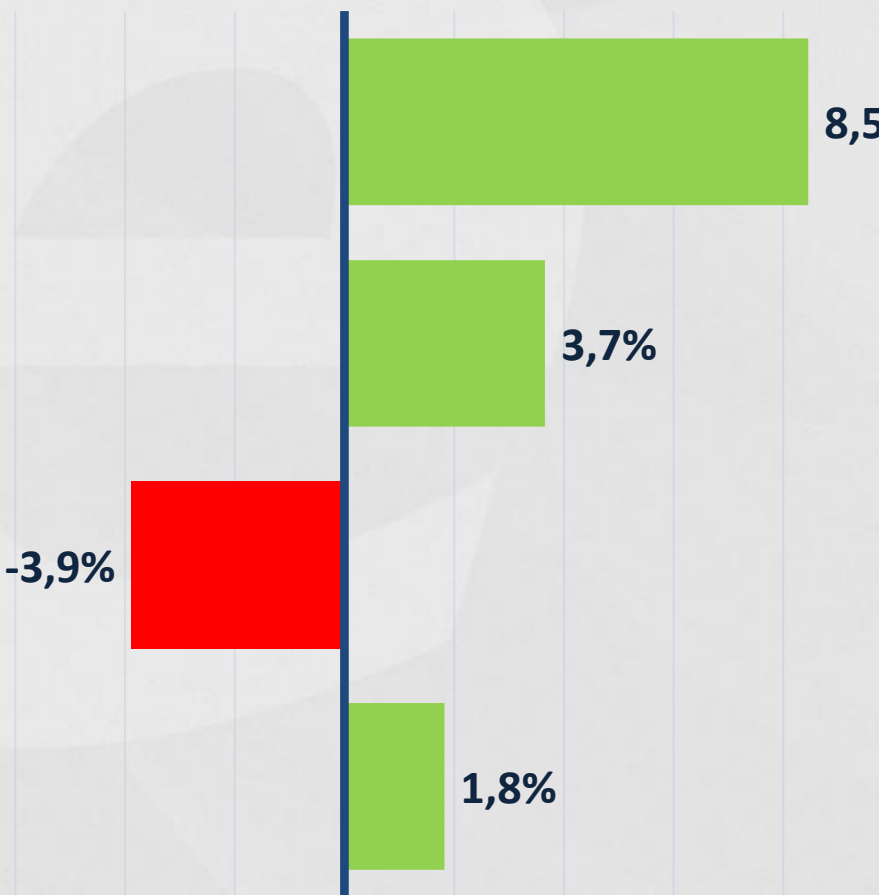
3,7%

ICT practitioners -
associate/
technician level

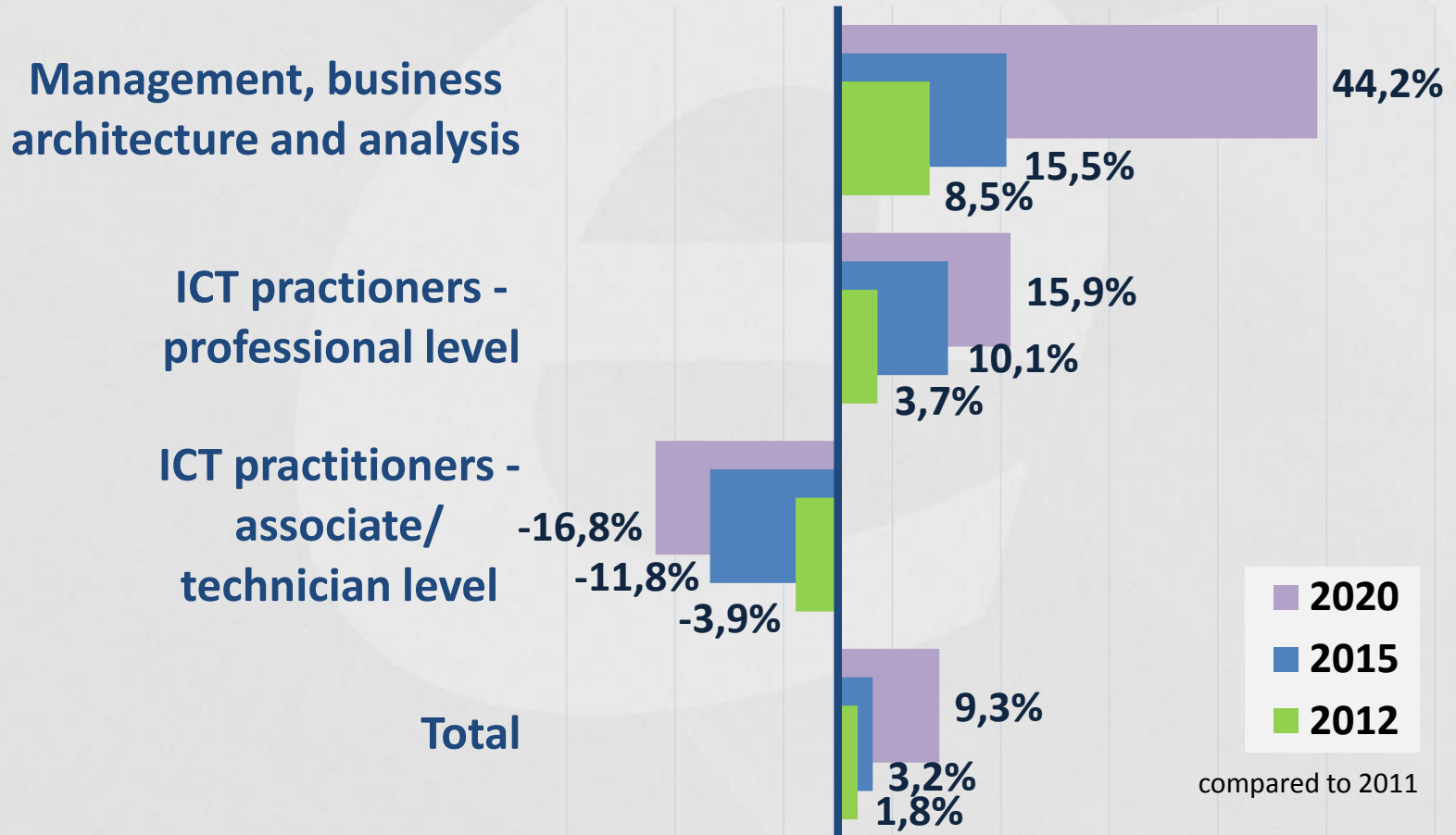
-3,9%

Total

1,8%



ICT Workforce Expected Growth (2011/2020)



Conclusions

- Demand keeps growing despite crisis. Forecasts: even the worst scenario sees increasing excess demand.
 - Trend in core jobs up to 4% growth p.a.
 - Management jobs up to 8% growth p.a.
 - Technician/associate level jobs declining
 - Need to continuously increase the quality and the relevance of e-skills
- Job growth largest in highly skilled jobs
 - Management, Architecture and Analytics positions, where also e-Leadership skills are required. Usually recruited from seasoned practitioner pool and other (non-ICT) managers.
 - New job profiles not yet fully covered in classification, such as Big Data and Cloud computing specialists

Conclusions

- Huge opportunity of new jobs creation generated by new mobile technologies, cloud computing, big data, social business etc. in all industry sectors
- Formal education and VET gaps, remaining importance of non-ICT graduate and career changer side entries
 - Increased importance of continuous professional education, lifelong learning and executive education
 - Importance of new education approaches, new modes of delivery, better curricula and learning outcomes

Forecasting e-skills demand and supply in Europe

THANK YOU