

# Innovation Leadership Skills for the High-Tech Economy - Demand, Supply and Forecasting

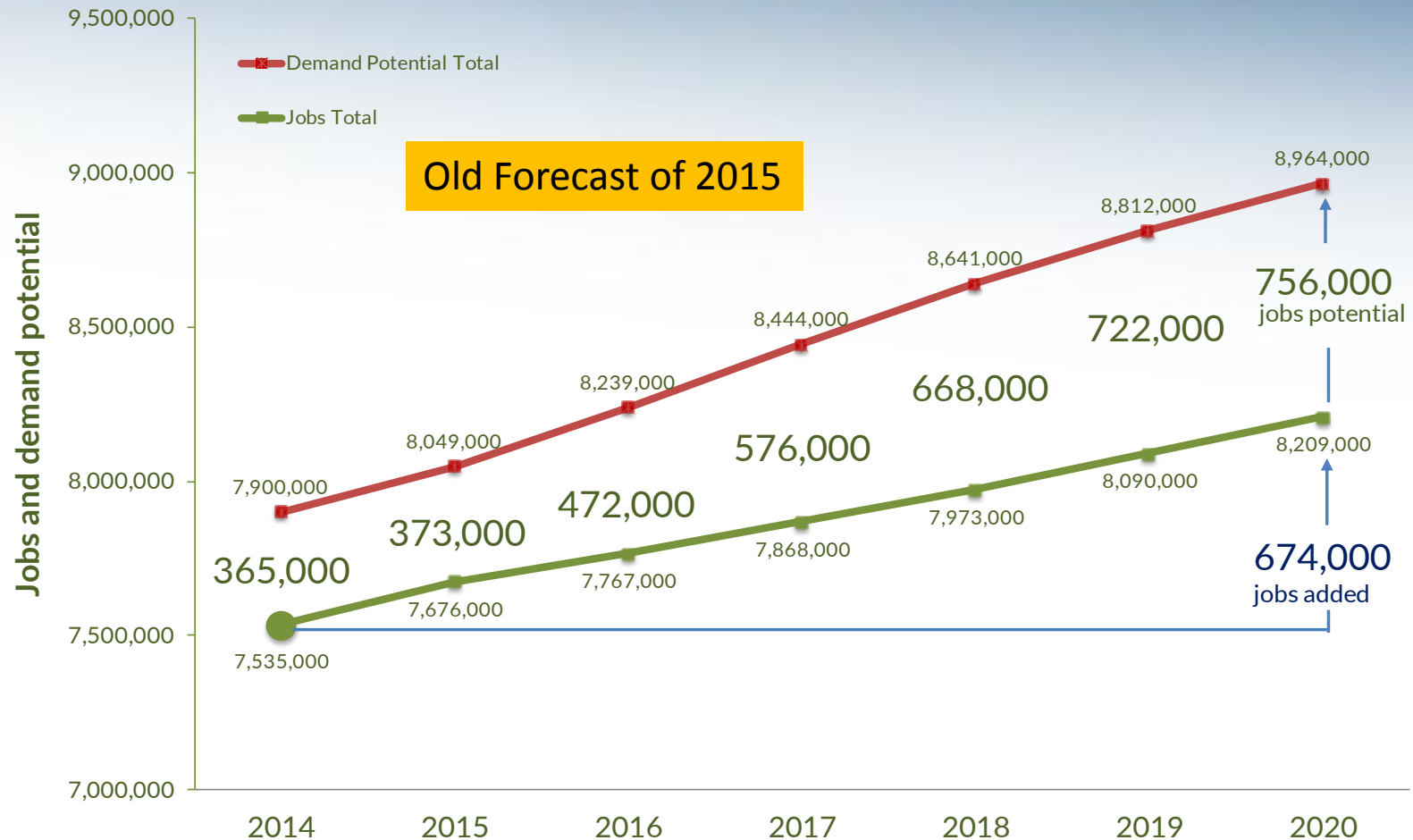
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# Latest Forecast, Dec. 2015

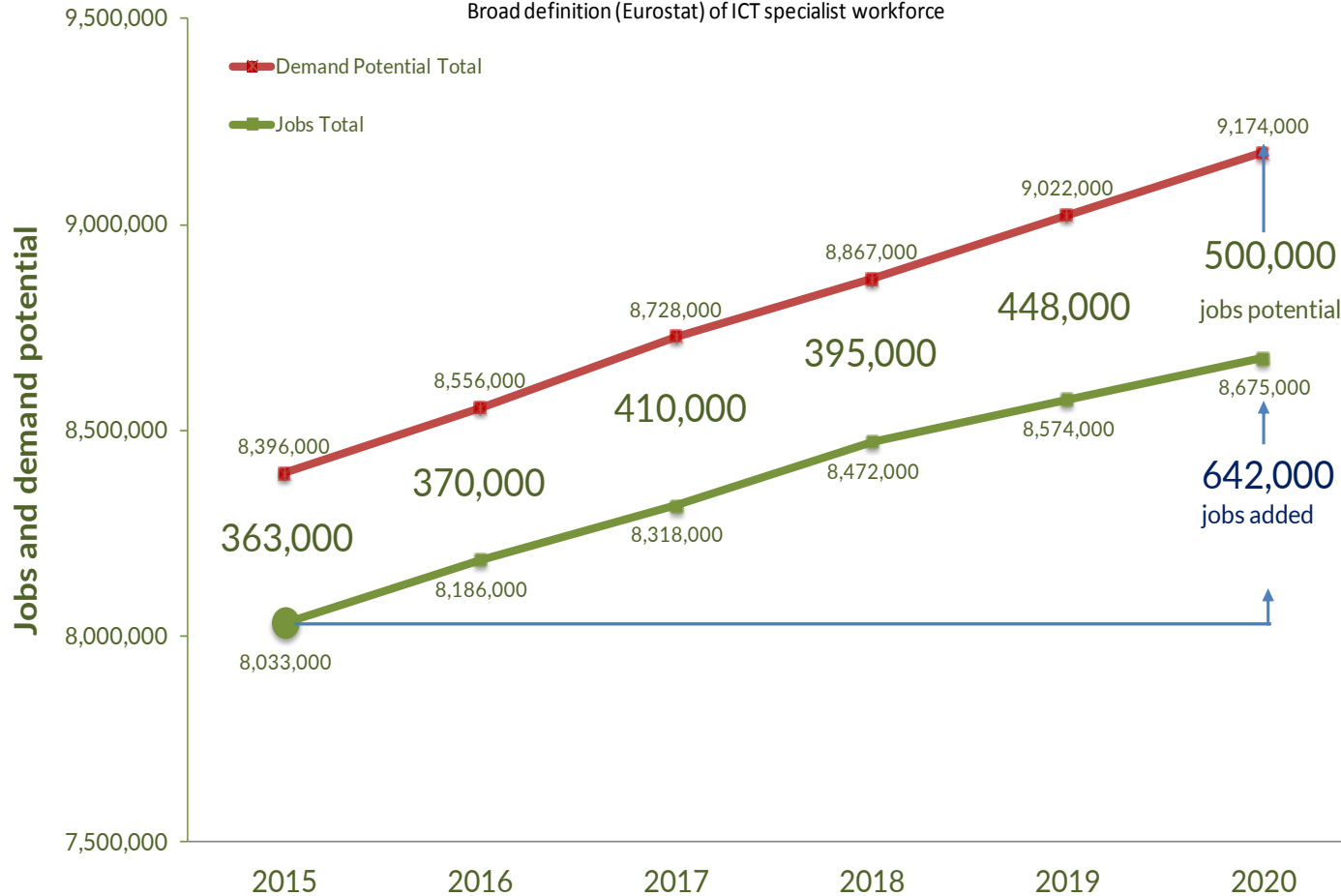
## EU28 - Main Forecast Scenario



# New Forecast Scenario, Jan. 2017

## EU28 - Main Forecast Scenario

Broad definition (Eurostat) of ICT specialist workforce



### Annual averages:

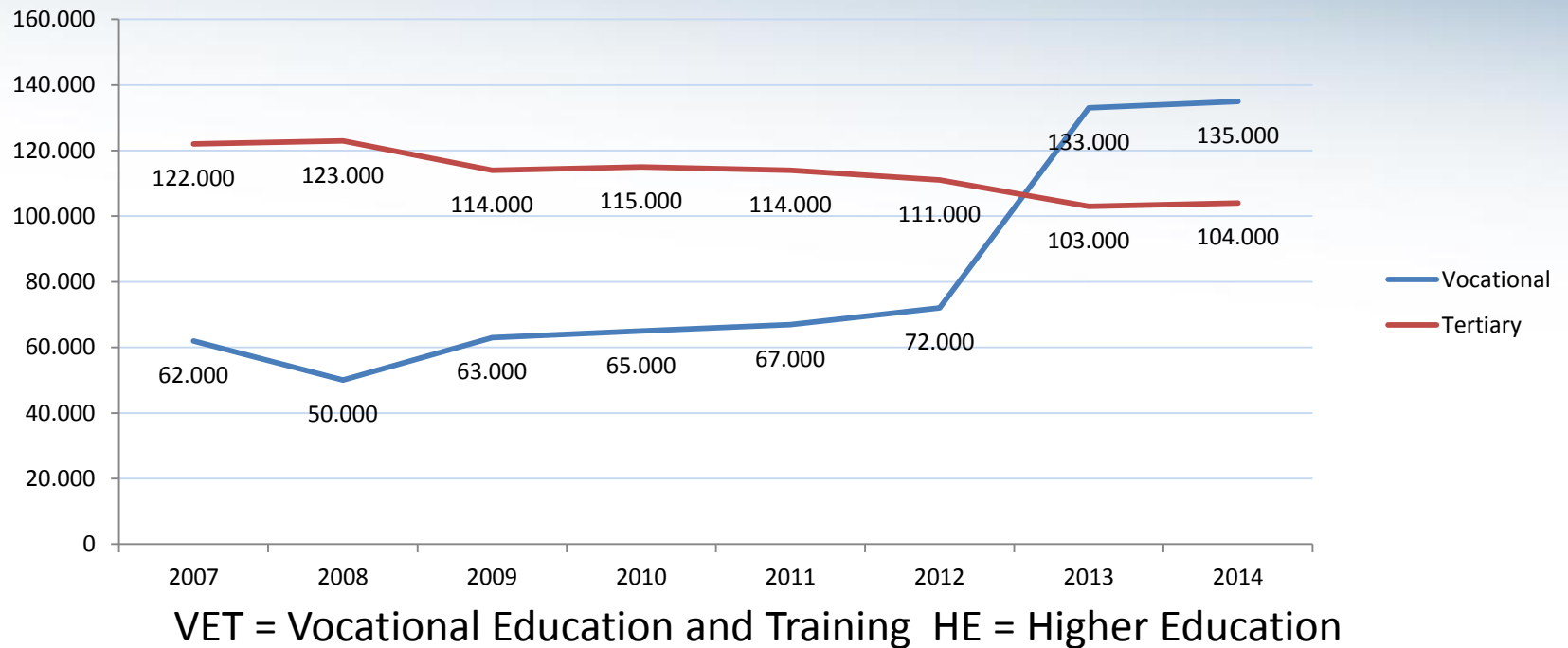
- Demand growth **1.8%**
- **128,000** job creation
- 215,000 replacement

### Why is the gap in 2020 down to 500k?

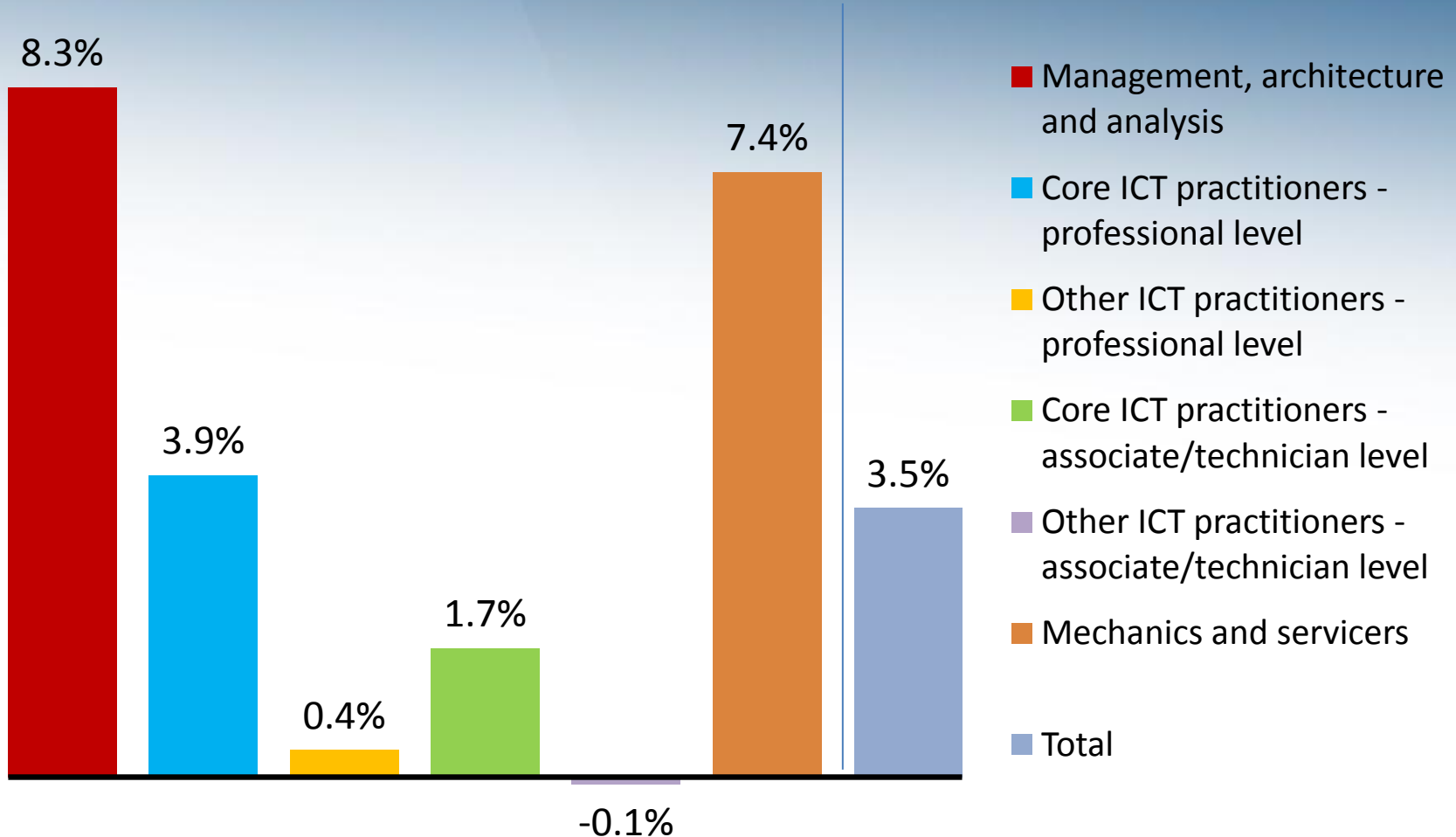
- **Supply improvements**  
+109k jobs  
= 43% of effect
- **Demand effects**  
-137k demand  
= 54% of effect
- **Different definition and other factors**  
-10k gap  
= 4% of effect

# Supply of IT Skills is growing

Supply forecast has increased, especially on the training (VET) side, education (HE) stagnating



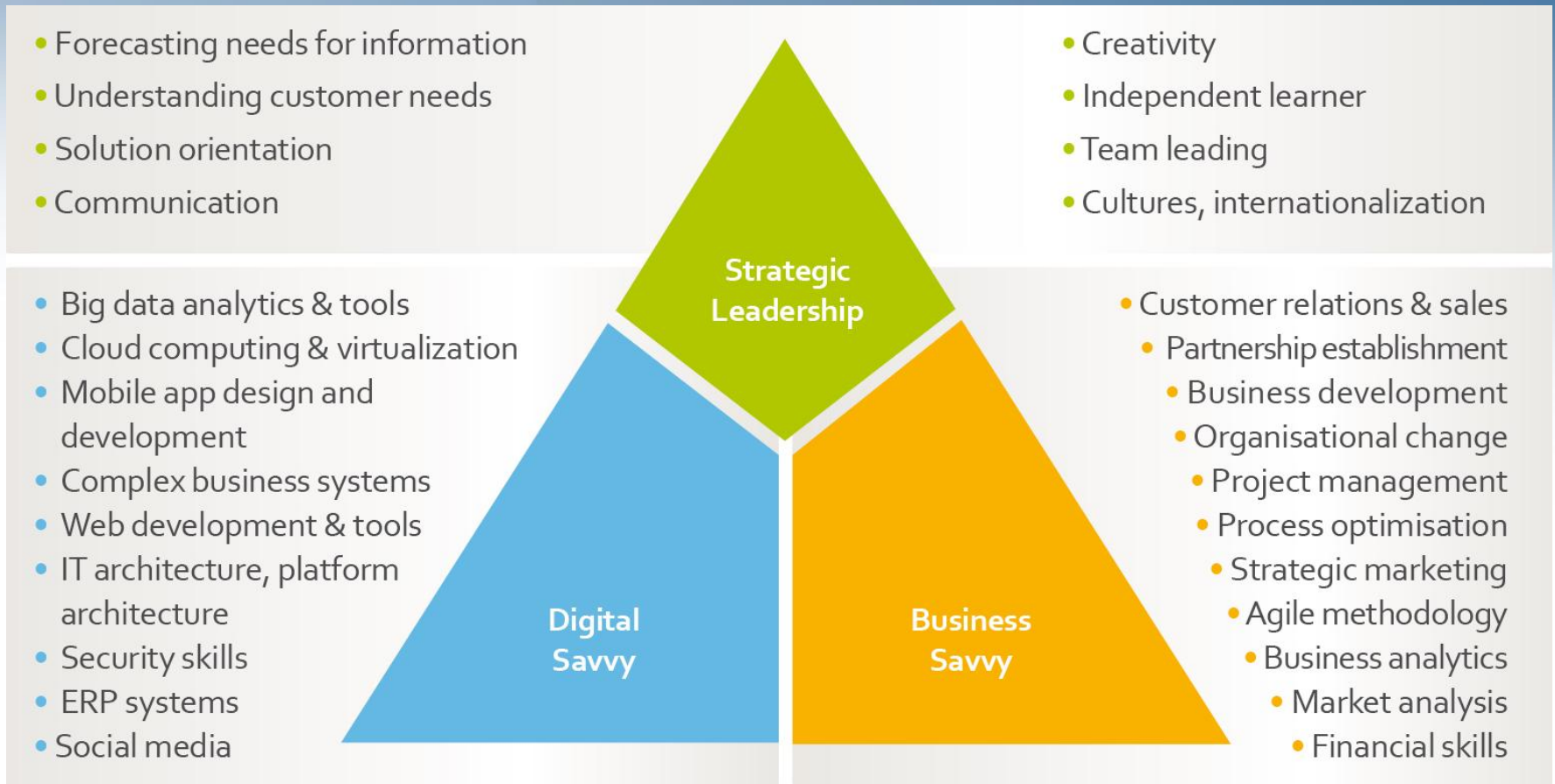
# 4-year growth averages (2011 to 2015) - signs of skill polarization



# e-Skills Forecast - Summary

- Estimated **gap narrowing** – in part due to **better supply**
- **Polarization**: middle skills might get under pressure
- **Continuous education and training** gain more relevance
- **Overall demand keeps growing** despite offshoring and automation (growing sophistication and professionalism)
- Labour market over decades **met demand through lateral (“outsider”) entries**, mending the gap, but still...
- ... a conflict between the growing need for **increased IT professionalism** and work-around practices is prevailing

# e-Leadership Definition





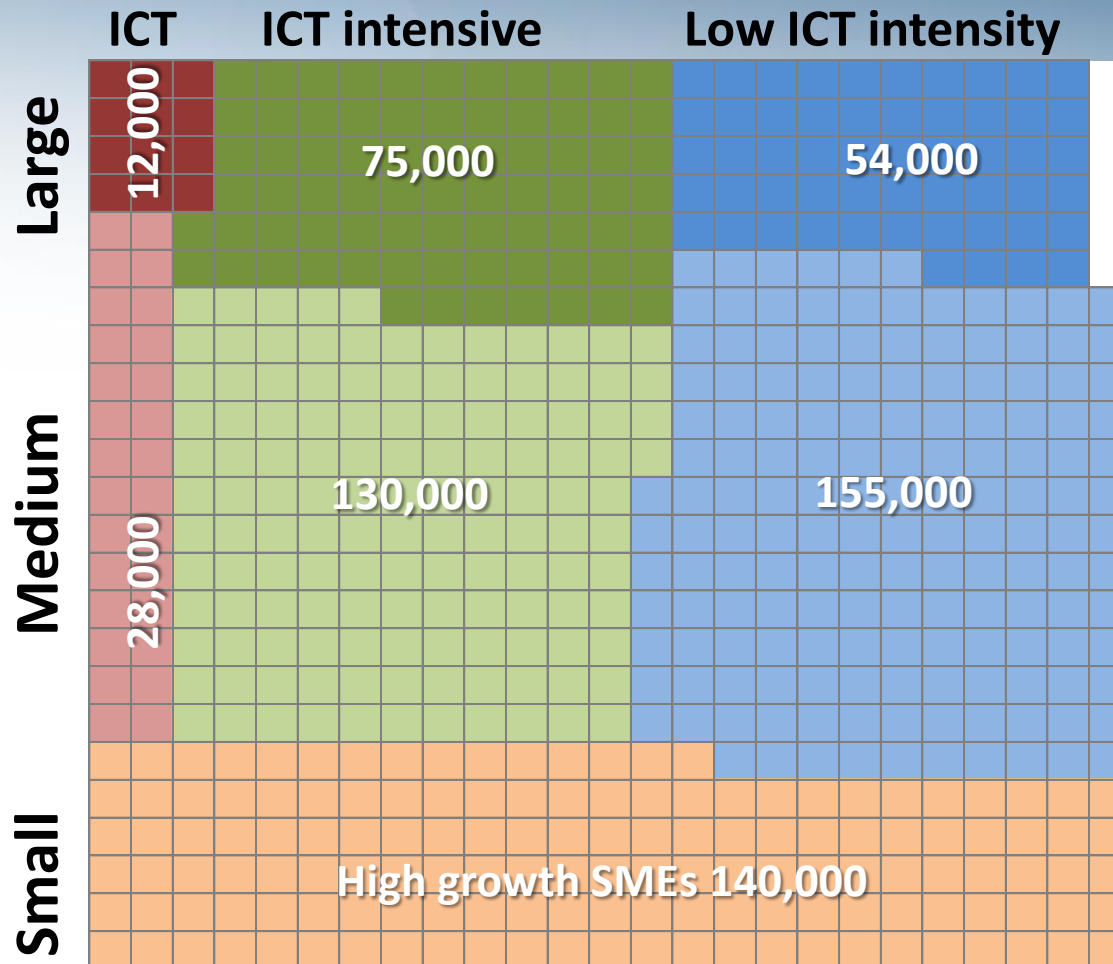
# Quantification

- **Sectoral:** IT-intensity and size of firm determine a certain average number of innovation leaders

*Estimation based on the structure of the economy*

- **Survey based:** asking about involvement of workers in successful digital innovation
- **Functional:** Assigning innovation leadership probabilities to job statistics

# e-Leaders in Europe: around 600,000



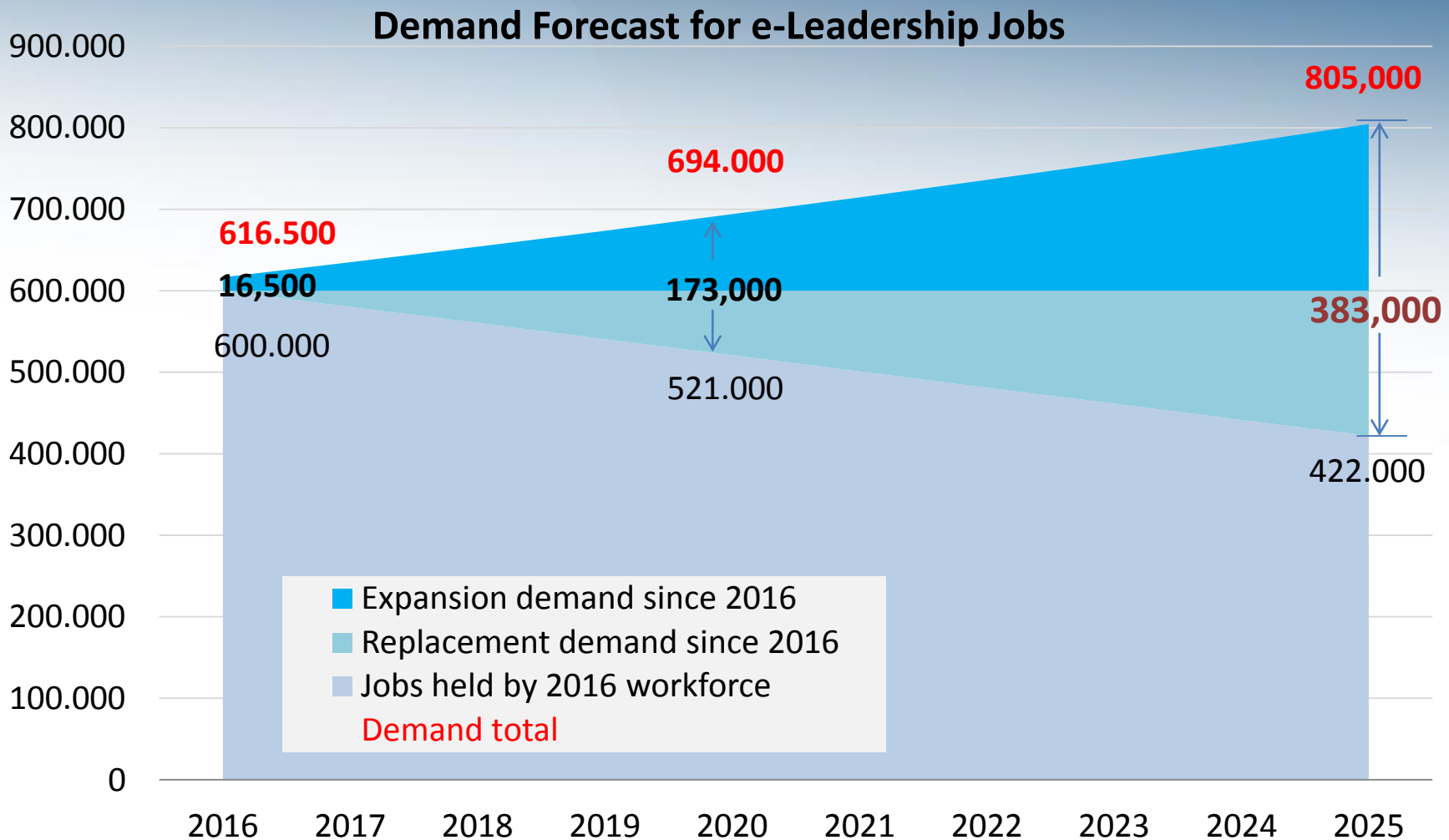
# Demand: Counting Job Adverts

- Analysis of online job postings (Jobfeed database )
- Search algorithm to find ads fitting all the criteria of the e-leadership definition
- DE, UK, FR, NL, AT
- November 2015 snapshot
- Assume 50% publish rate
- Assume EU total  $\sim 5$  countries \* 1.5
- → 16,500 vacancies for e-leaders
  - Equals vacancy rate of 2.65%  
(compare: total business economy: 1.8%, ICT: 2.9%)



# Demand Forecast e-Leadership Jobs

## Scenario Moderate Demand Growth (3% CAGR)



# Supply Scenarios Given Moderate Demand Growth (3% CAGR)

| e-leader generation<br>capacity / year | Vacancies<br>2020 | Vacancies<br>2025 | Over-supply<br>2020 | Over-supply<br>2025 |
|--|-------------------|-------------------|---------------------|---------------------|
| 30,000                                 | 53,000            | 112,500           | 0                   | 0                   |
| 40,000                                 | 13,000            | 22,500            | 0                   | 0                   |
| 42,500                                 | 3,000             | 1,000             | 0                   | 0                   |
| 45,000                                 | 0                 | 0                 | 5,000               | 2,000               |
| 50,000                                 | 0                 | 0                 | 10,000              | 7,000               |
| 60,000                                 | 0                 | 0                 | 20,000              | 17,000              |

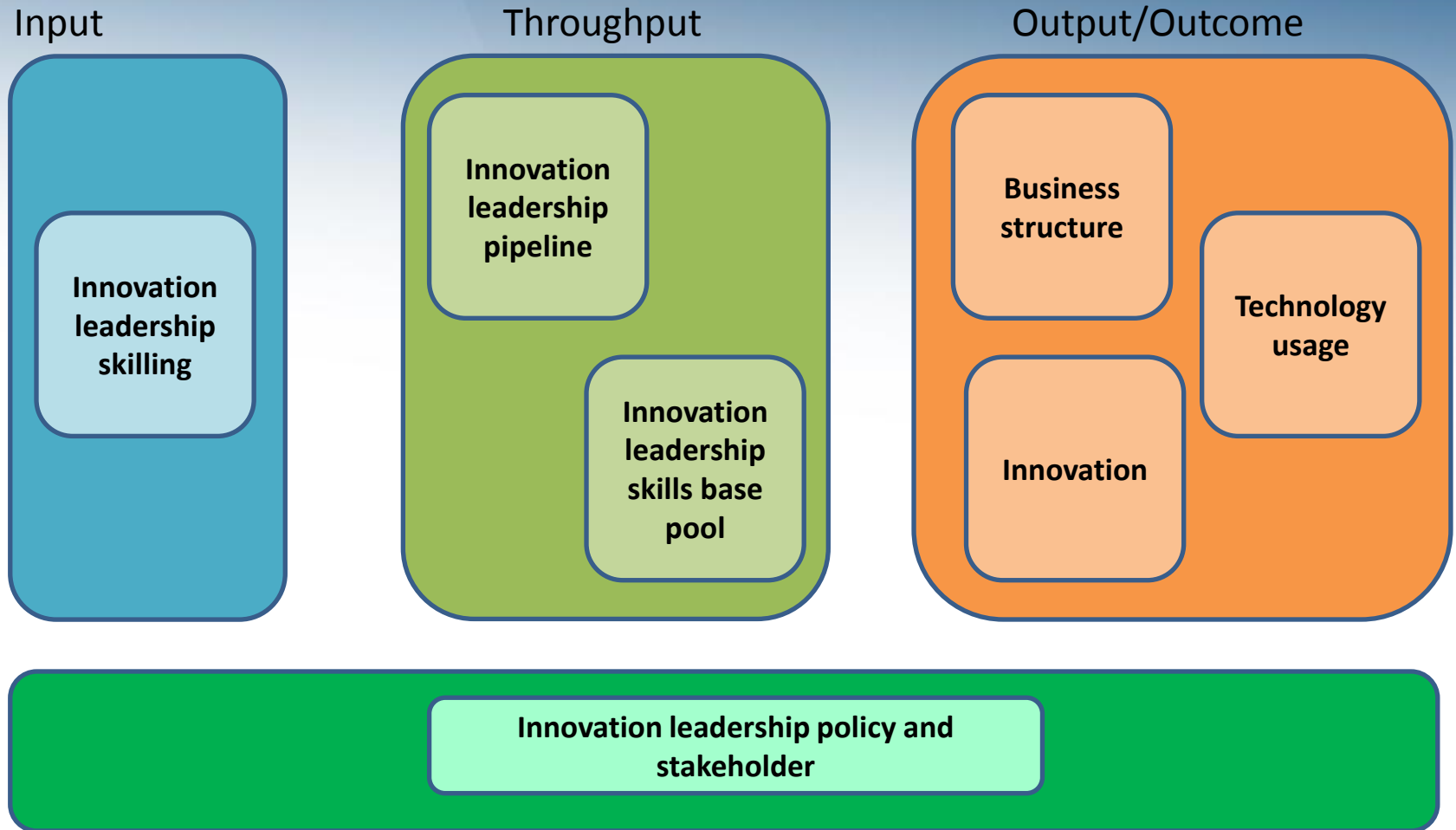


Given 3% demand growth, optimum capacity  
generates 40,000 to 50,000 e-leaders per year

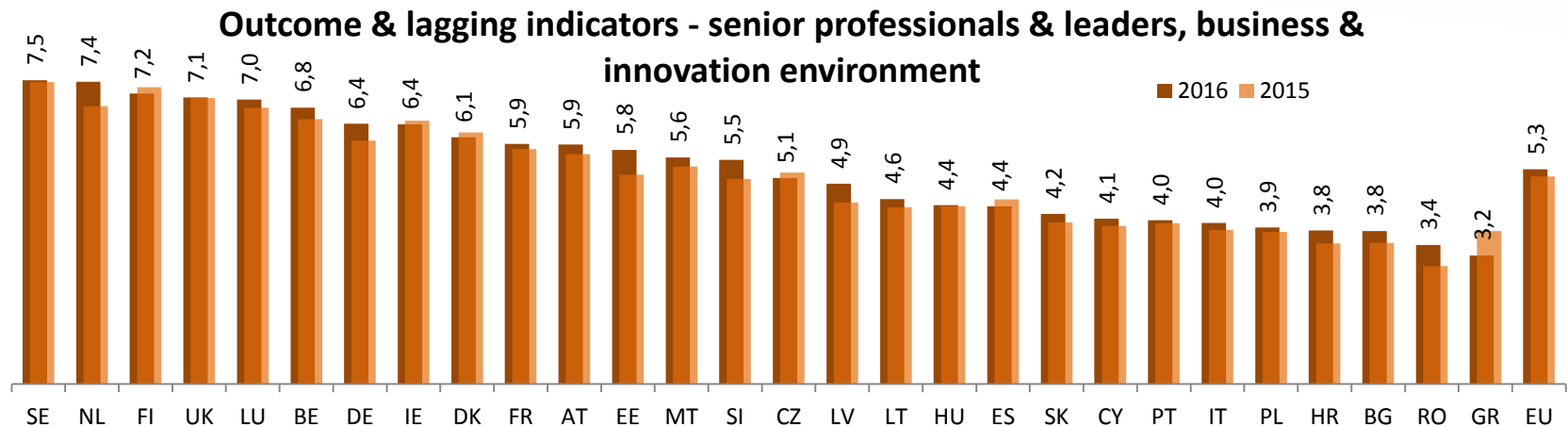
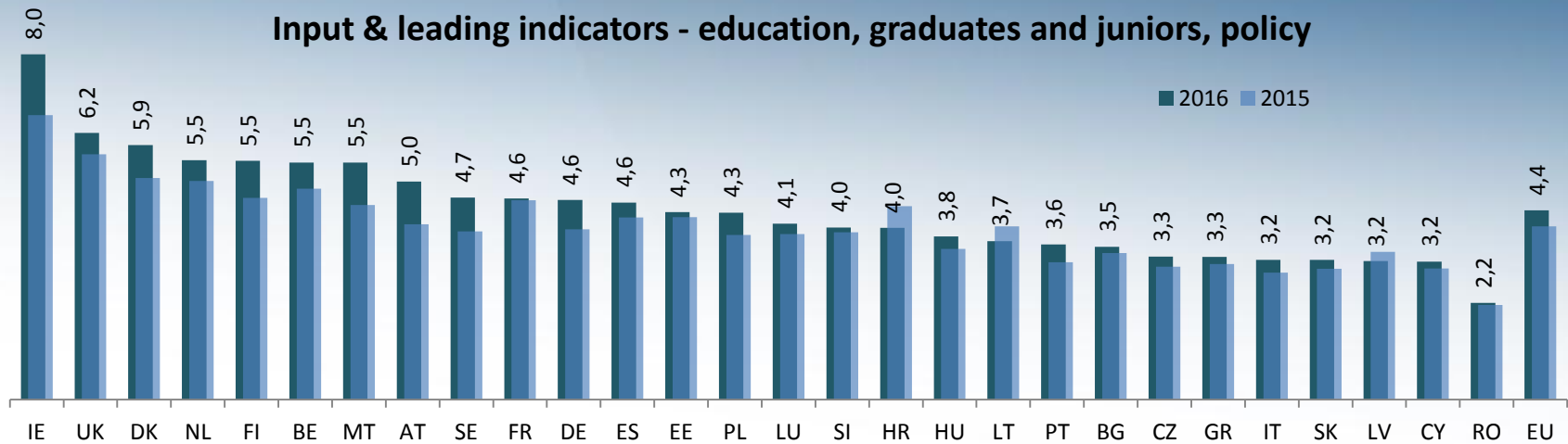
# Quantification - Summary

- Estimates based on the definition of e-Leadership
- No data available from statistical offices
- Status quo ~ 600,000
- Open vacancy data, some assumptions applying, as a demand metric
- **Future demand evolution based on scenarios only**
- At 3% demand growth, 40k to 50k new e-leaders annually needed
  - Graduate figures from executive education (HE and business schools) are far from being even close to this order of magnitude
  - Supply emerges mainly through cross-functional experience, corporate leadership programmes and other on-the-job development.
- Significant scope for improvement of **e-leadership talent** development strategies, at enterprise as well as at national and EU economy level

# Other Indicators As Proxy



# e-Leadership Measurement





# Accomplishment vs. Preparedness Plotting For The Mid-Term Outlook



# Conclusions

- Unless massive surveys are undertaken, useful to rely on indicator **scoreboard as proxy** measurement
- Preparedness > accomplishment: best outlook on growing their e-leadership skills maturity. Examples:
  - **Ireland** (Strengths: executive education and LLL),
  - **Malta** (Policies and initiatives),
  - **Denmark** (Graduates & junior practitioners, LLL),
  - **Spain** (Executive education),
  - **Poland** (Education programmes, graduates)
- Accomplishment > preparedness: Look out for **complacency!**

**THANK YOU**

