Digital Skill Degree
How to analyse Digital impact in Labour Market Demand

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DATA SCIENTIST @TABULAEX – @CRISP

ETF AND EC WORKSHOP ABOUT SKILLS MATCHING AND ANTICIPATION – MILAN - JUNE, 2019
Quo Vadis Labour Market?

Knowledge becomes crucial to support different LM actors and policy makers in understanding LM dynamics and trends.

**LM CHALLENGING FACTORS**
1. Skills Evolution
2. New Emerging Occupations
3. Job Automatisation/Replacement
4. Mobility

**LM NEEDS**
1. Updated information (near-real-time)
2. Data driven decisions (let data speak)
3. Prediction can be done to anticipate trends
Labour market changes

opportunity or disadvantage?

«There's never been a better time to be a worker with special skills or the right education because these people can use technology to create and capture value.” However, “there’s never been a worse time to be a worker with only ‘ordinary’ skills and abilities to offer, because computers, robots and other digital technologies are acquiring these skills and abilities at an extraordinary rate»

Erik Brynjolfsson and Andrew McAfee, 2014
✓ Which skills are required from Labour Market?

✓ How digital skills can impact company’s demand?

Pervasiveness of Digital in Labour Demand for non-ICT professionals
Compute Skills Rates and Relevance

**Skills Rate**
estimate the incidence of Digital, Hard non Digital and Soft skills in a single occupation

**Skills Relevance**
defines the weight of each skill for the considered occupation

**Idea:** Exploit the informative power of the OJV for computing the Skill Rate and skill Relevance

*Skills Rate and Relevance methodology was defined and used by CRISP in 2017 and 2018 for the Italian Observatory of Digital Skills promoted by the Italian ICT associations*
WollyBI - Our Labour Market Monitor

**What Is?**
A Real-Time Labour Market monitoring system, based of Big Data and Artificial Intelligence techniques, that collect data coming from OJVs to analyze Labour Market Dynamics

**Some numbers:**
- 5M+ OJVs
- 6 Years of data

**Analytical dimensions:**
- Occupation and Skills by:
  - Geography
  - Sector
  - Educational Level
  - Type of Contract
  - .... (and much more)
Compute Skills Rate – An analytical path example

Demand of digital, specialist and soft skills - by Sector

Credits to WollyBI: a trademark of TabulaeX
Focus on Digital Skill Rate for different corporate areas (Manufacturing sector)
Focus on Skill Rate by Profession (Manufacturing sector, core business areas)

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<thead>
<tr>
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<tbody>
<tr>
<td>Manufacturing</td>
<td>13%</td>
<td>59%</td>
<td>28%</td>
<td>11%</td>
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<tr>
<td>Grafici e progettisti multimediali</td>
<td>14%</td>
<td>32%</td>
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<tr>
<td>Specialisti dei metodi di insegnamento</td>
<td>7%</td>
<td>46%</td>
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<td>Conduttori di impianti e macchinari fissi</td>
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<td>Dirigenti nel settore ricerca e sviluppo</td>
<td>12%</td>
<td>43%</td>
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<tr>
<td>Mathematicians, actuaries and statisticians</td>
<td>10%</td>
<td>34%</td>
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<td>32%</td>
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<tr>
<td>Ingegneri industriali e gestionali</td>
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<td>Disegnatori industriali</td>
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<td>60%</td>
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Credits to WollyBI: a trademark of TabulaeX
Compute Skills Rate – An analytical path example

... and more, looking at each occupation...

- **Applied and Management Skills** = ability to use tools and software to manage both operational and decisional processes
- **Basic Skill** = for everyday use of basic IT tools
- **ICT Techniques Skill** = very specialized on solutions, platforms and programming languages
- **Information Brokerage Skill** = for the use of IT tools aimed at corporate communication
Compute Skills Rate – An analytical path example

... and more, looking at **elementary skills**

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<th>Occupation</th>
<th>Applied and Management Skills</th>
<th>ICT techniques</th>
<th>Information Brokerage</th>
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<td>Database usage</td>
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<td>SW markup usage</td>
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Some recap data

Sectors with most relevant DSR:
- Manufacturing (8-44%)
- Services (5-36%)
- Commerce (8-17%)

Corporate Areas with most relevant DSR:
- **Manufacturing**: HHRR, Research & Development, Marketing & Communication;
- **Services**: Quality Assurance, Research & Development, HHRR, Secretariat & Office Administration;
- **Commerce**: General Management, Research & Development, Accounting, Management Control, Finance;

Overall relevant Soft Skill Rate ~35%
Thanks for your time

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