CHAISE - A sectoral approach to Blockchain skills development

Project overview, key findings & expected results

DIONYSIOS SOLOMOS (EXELIA)
WHAT IS BLOCKCHAIN?

• A computing innovation that is revolutionizing industries/public sector and driving economic change by reducing the cost of transactions and the time lapse of working through intermediaries.

• Blockchain comprises distributed databases that maintain a continuously growing list of ordered records that cannot be altered retroactively, providing a secure ledger for storing transactions and enabling more efficient asset transfers and ownership verification.

• Assets can be ‘tangible’ (house, car, cash, government services, land) or ‘intangible’ (intellectual property, patents, copyrights, branding)

• Blockchain can be applied to a wide range of sectors, such as health, agriculture, transportation, public services, education, etc.
WHY BLOCKCHAIN?

• Blockchain is at the core of the EU strategy to advance digital transformation.

• The European Blockchain Sector, with its existing infrastructure and innovative SMEs, is well placed to acquire global leadership; still, its competitiveness largely relies on the availability of a competent and versatile workforce.

• Whereas the demand for Blockchain skills is steadily increasing, employers are facing a shortfall of skilled professionals that prevents the sector from unleashing its full potential.

• The job site “LinkedIn” ranks Blockchain as the number one tech skill sought after by EU companies in 2021, reporting a 400% growth in 2021 from a year prior.
SECTORAL CHALLENGES

• Intensive competition from other markets in the recruitment and retention of highly skilled employees
• E&T providers have limited understanding of employers’ needs and low responsiveness to workplace requirements
• Different types/volumes of skills mismatches among EU Member States
• Skills requirements for Blockchain occupational tasks are not standardized at the EU level
• Misconception of Blockchain as requiring ICT education at the highest level
“To develop a strategic approach on Blockchain skills development for Europe as well as to deliver future-proof training solutions”
THE CHAISE PARTNERSHIP

• 23 Partners + 5 associates
• 13 + 2 EU countries

<table>
<thead>
<tr>
<th>Sectoral Actors</th>
<th>Companies</th>
<th>E&amp;T providers</th>
<th>Entities with regulatory function</th>
<th>Labour market research institutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>INATBA, DIGITALEUROPE, DIGITAL SME, BERCHAIN, ITALIA4BLOCKCHAIN, ALASTRIA</td>
<td>INTRASOFT, FUJITSU, IOTA, C4A, INDUSTRIA, EXELIA</td>
<td>UCBL, UPC, UT, UL, DHBW, ESRI, DIEK-AIGALEO</td>
<td>ECQA, YPEPTH, CPI, CIMEA, ACQUIN, VISC</td>
<td>DHBW, ESRI, ECORYS, KANEP-GSEE</td>
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PROJECT OBJECTIVES

Cooperation
- Set up a collaborative method for monitoring workplace & skill needs
- Set up a post project permanent blockchain cooperation network
- Provide a mechanism for collaboration at national level
- Survey and promote blockchain VET offerings to practitioners

Skills intelligence & training
- Improve Blockchain skills intelligence and document skills mismatches
- Design a modular VET programme and educational resources
- Introduce a MOOC
- Establish a sectoral qualification

Recognition & mobility
- Define EU-wide occupational requirements for blockchain workforce
- Link the designed curriculum with European recognition tools
- Connect jobseekers and Blockchain companies
EXPECTED OUTCOMES

- A detailed **skill needs and mismatches analysis** for the European Blockchain Sector (WP2)
- A **quantitative forecasting model** (D3.1.1) of future blockchain skill supply and demand

An institutionally validated **European Blockchain Skills Strategy** (D4.3.1) to address skill shortages & mismatches

- A **5 semester VET programme** (D5.2.1) to address technical, non-technical & cross-discipline skill needs
- **Open Educational Resources for Blockchain Training** (D5.3.1) in 11 EU languages
- A **Massive Open Online Course (MOOC) on Blockchain Skills** (D5.6.1), for large scale, open and flexible learning
- **Delivery of training to at least 700 individuals** (T5.7), reaching out to 50 companies and E&T providers

- 3 new **Blockchain specific occupational profiles** (D6.1.1) to be embedded into ESCO & ECQA classification systems
- A **blueprint and roadmap for the establishment of a blockchain specialisation qualification** (D6.3.1)

A “Blockchain” career guidance & alumni platform (D7.2.1), to promote graduates’ employability and mobility

- **A Memorandum of Cooperation** (D9.1.1) among stakeholders for a European Blockchain Skill Cooperation Network
FIRST YEAR RESULTS
SECTOR DEMARCATION AND SKILL NEEDS IDENTIFICATION
BC JOBS
Software developers
ICT service managers
Administration managers

BC ADOPTERS
ICT, Financial services and gaming

ICT 52%
Financial Services 23%
Gaming 5%
Other 20%

TRENDS
Supply Chain
Health Care
Cloud Storage

Data Encryption
Advertising
Consulting

EUROPEAN BLOCKCHAIN MARKET
BLOCKCHAIN WORKFORCE CHARACTERISTICS

- Education: Bachelor Degree ICT
- Gender: Male
- Age: 30
- Employment form: Full-time
- Wage: 45,000€
- Knowledge of:
  - Web development
  - IT, legal, finance, data
  - Maths and statistics
  - Tokens & Smart contracts
  - Distributed system thinking
  - Agile Development
EMERGING BLOCKCHAIN ROLES

Main skills:

BC Architect
- Coding (C++, Python, Java)
- Systems & Networked thinking, analytical competence, problem solving
- Skills for (Blockchain) Use Cases development
- Business Development Skills
- Data / Network Security

BC Developer
- Coding (C++, Python, Java)
- Develop Decentralised Applications (on Ethereum, Bitcoin, Stellar)
- Systems & Networked thinking, analytical competence, problem solving
- Design-thinking competence, versatility & perspective taking
- Frontend/Backend Development

BC Manager
- Communication
- Cooperation competence & Team-working ability & emotional / Social intelligence
- Self-determination & Autonomy
- Self-management / organisation / regulation & self-responsibility
- Decision competence & Responsibility-taking
BLOCKCHAIN SKILLS

STRATEGY
ACTION AREAS (STRATEGIES)

1. Monitoring BC labour market developments and evolving skill needs
2. Creation of an EU-wide Blockchain knowledge building platform
3. Enhancing collaboration and knowledge transfer from business to academia and vice versa
4. Creating a decentralized BC training and marketplace platform
5. Bringing Blockchain to everyone
BLOCKCHAIN SKILLS
FORECASTING MODEL
FORECASTING METHODOLOGY

BC DEMAND

• Scrapping BC jobs from job sites and mapping them to specific ISCO occupational categories
• Proportion of each of ISCO categories that are Blockchain jobs
• CEDEFOP employment forecasts for each occupational category

BC SUPPLY

• Proportion of BC graduates from total graduates in BC related fields of study such as ICT
• Forecasts for 2020-2026 using linear trends sourced from 2015-2019 Eurostat Data
## FORECASTING RESULTS

### FORECAST SUMMARY FOR DEMAND AND SUPPLY, 2020-2026

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>TOTAL BLOCKCHAIN DEMAND</th>
<th>BLOCKCHAIN GRADUATE SUPPLY</th>
<th>MISMATCH</th>
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<tbody>
<tr>
<td>EU Total</td>
<td>28,092</td>
<td>14,972</td>
<td>13,120</td>
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MILESTONE & UPCOMING ACTIVITIES

1. Formulation of the European Blockchain Skills Strategy (March 2022)
2. Deployment of the Blockchain Skills Forecasting model and delivery of 1st year results (May 2022)
3. Availability of the CHAISE curriculum and educational resources (November 2022)
4. Creation of the new Blockchain Occupational profiles (January 2023)
5. Launch of the "Blockchain" career guidance platform (November 2023)
6. Formation of National Blockchain Skills Partnerships (May 2024)
7. Establishment of a permanent Blockchain Skills Cooperation Network (October 2024)
8. Definition of skills needs & mismatches (July 2021)
DIONYSIOS SOLOMOS
solomos@exelia.gr