CHAISE - A sectoral approach to Blockchain skills development

Project overview, key findings & expected results

DIONYSIOS SOLOMOS (EXELIA)

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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

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WHY CHAISE?

"To develop a strategic approach on Blockchain skills development for Europe as well as to deliver future-proof training solutions"

IMPACTING

40-50 Sectoral, Social Partners

40-60 Public authorities

700-1200 Learners, workers

Target groups

330-420 Education & Training providers

1400-1600 Businesses

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THE CHAISE PARTNERSHIP

- **23 Partners + 5 associates**
- **13 + 2 EU countries**

Sectoral Actors	Companies	E&T providers	Entities with regulatory function	Labour market research institutes
INATBA, DIGITALEUROPE, DIGITAL SME, BERCHAIN, ITALIA4BLOCKCHAIN, ALASTRIA	INTRASOFT, FUJITSU, IOTA, C4A, INDUSTRIA, EXELIA	UCBL, UPC, UT, UL, DHBW, ESRI, DIEK-AIGALEO	ECQA, YPEPTH, CPI, CIMEA, ACQUIN, VISC	DHBW, ESRI, ECORYS, KANEP-GSEE

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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

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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
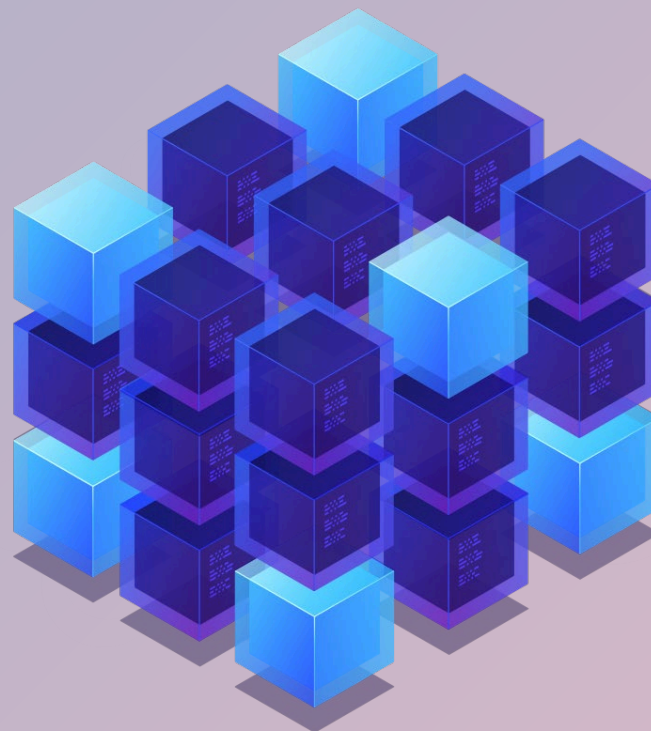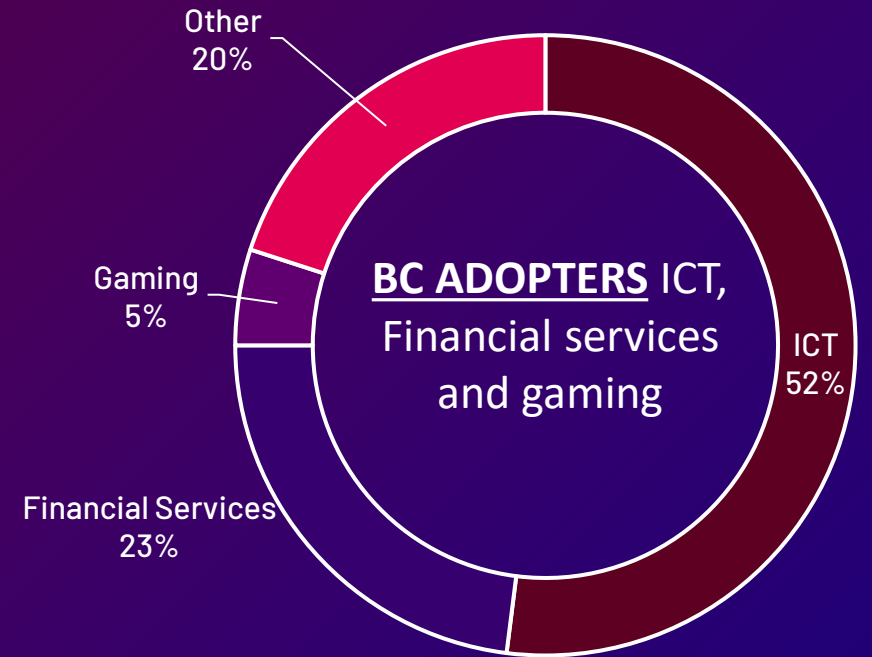
FIRST YEAR RESULTS
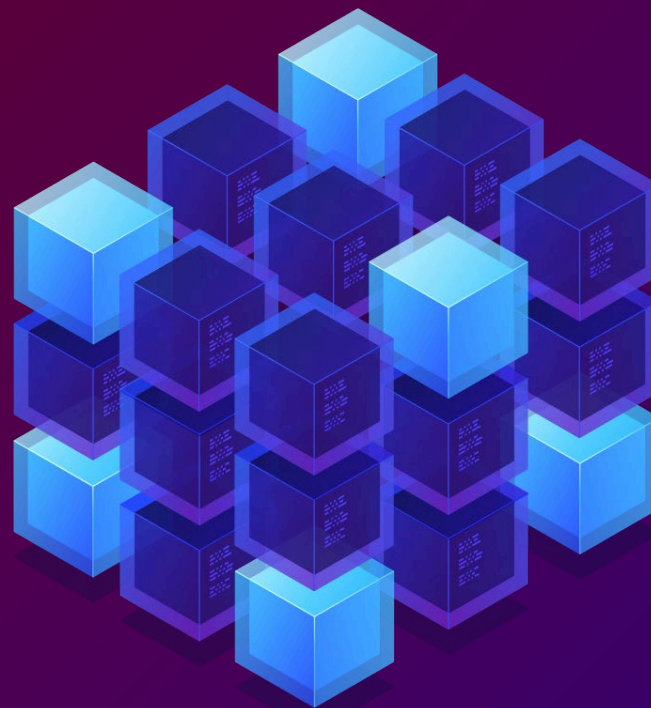
SECTOR DEMARCATION
AND SKILL NEEDS
IDENTIFICATION

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EUROPEAN BLOCKCHAIN MARKET

BC JOBS

Software developers

ICT service managers

Administration managers

Other
20%

Gaming
5%

BC ADOPTERS ICT,
Financial services
and gaming

ICT
52%

Financial Services
23%

TRENDS

Supply Chain	Data Encryption
Health Care	Advertising
Cloud Storage	Consulting
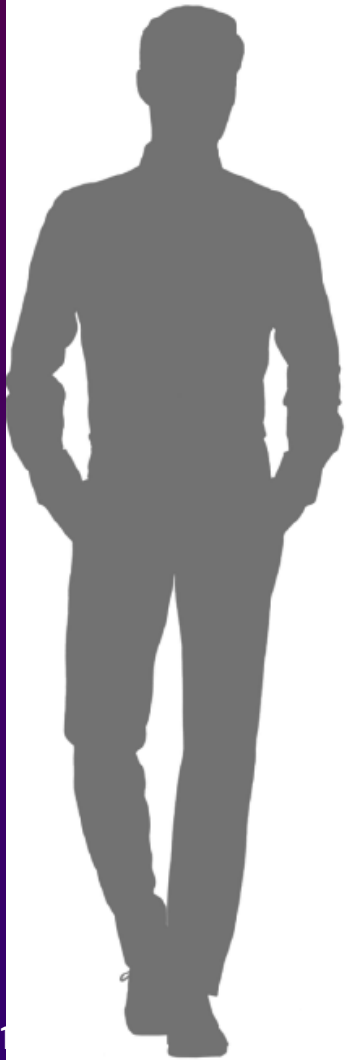
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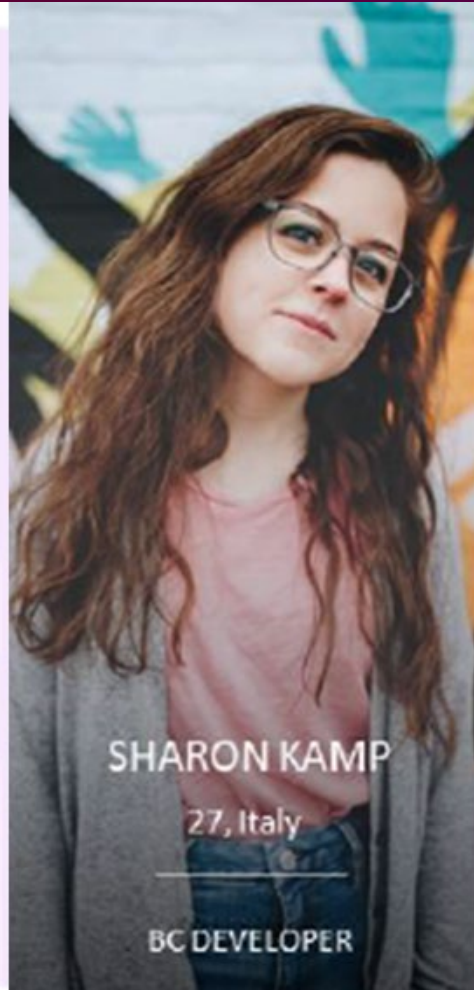
BLOCKCHAIN WORKFORCE CHARACTERISTICS

Education: Bachelor Degree ICT

Gender: Male

Age: 30

Employment form: Full-time

Wage: 45.000€

Knowledge of:
- Web development
- IT, legal, finace, data
- Maths and statistics
- Tokens & Smart contracts
- Distributed system thinking
- Agile Development

EMERGING BLOCKCHAIN ROLES

ANNE SHIRLEY
29, Belgium
BC ARCHITECT

SHARON KAMP
27, Italy
BC DEVELOPER

SANDRIGO ZOILO
30, Spain
BC MANAGER

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

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BLOCKCHAIN SKILLS

STRATEGY

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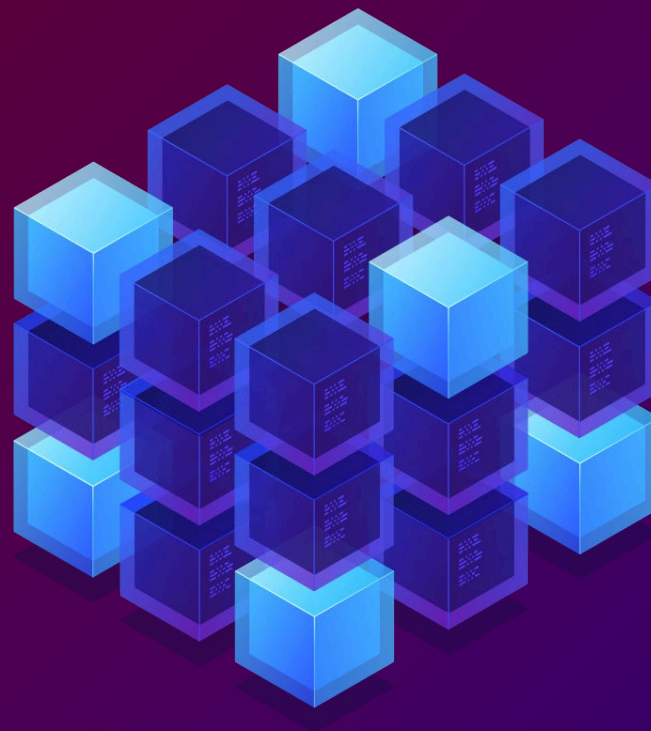
ACTION AREAS (STRATEGIES)

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

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BLOCKCHAIN SKILLS

FORECASTING MODEL

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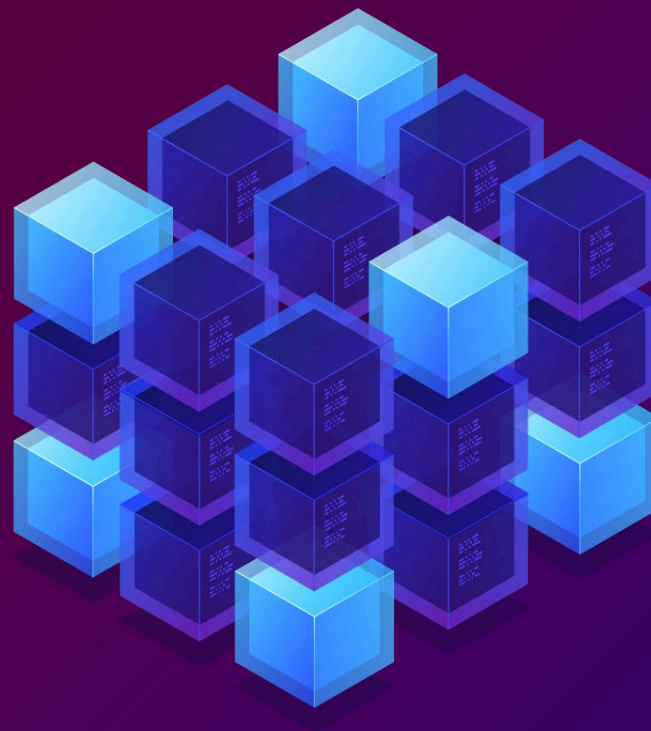
FORECASTING METHODOLOGY

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

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FORECASTING RESULTS

FORECAST SUMMARY FOR DEMAND AND SUPPLY, 2020-2026			
COUNTRY	TOTAL BLOCKCHAIN DEMAND	BLOCKCHAIN GRADUATE SUPPLY	MISMATCH
EU Total	28,092	14,972	13,120

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MILESTONES & UPCOMING ACTIVITIES

Formulation of the European Blockchain Skills Strategy (March 2022)

Availability of the CHAISE curriculum and educational resources (November 2022)

Launch of the "Blockchain" career guidance platform (November 2023)

Establishment of a permanent Blockchain Skills Cooperation Network (October 2024)

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Definition of skills needs & mismatches (July 2021)

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Deployment of the Blockchain Skills Forecasting model and delivery of 1st year results (May 2022)

4

Creation of the new Blockchain Occupational profiles (January 2023)

6

Formation of National Blockchain Skills Partnerships (May 2024)

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