Needs' Validation
TRANSNATIONAL REPORT

BCT4SMEs

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DANMAR

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About the project

In comparison with big firms, small businesses confront several problems in the business economy. Many of them face barriers in entering trade markets, while others can confront difficulties in several sectors, such as transactions, data storage, cash flow, and security but also for efficiently protecting IP. When it comes to security issues and in particular, data storage, many companies use the Internet of Things (IoT) for this scope, as big number of devices connected to the internet give the opportunity to control data. Nevertheless, managing all of these IoT devices and the data included in them, often becomes a challenge for enterprises. In addition to this, other security issues may include other fields such as digital transactions, digital identity, communication with others, etc. The other problems that mentioned above, namely transactions and cash flow are problems that many SMEs face in the field of finances, in conjunction with other issues, such as payments, investments, etc.

The OBJECTIVES of the project:

- Assist SMEs improve their place in business economy;
- Promote the use of new technologies in SMEs;
- Empower managers/owners of SMEs with the essential skills and knowledge regarding blockchain technology in order to help them run and manage their businesses successfully;
- Develop strategies and actions that present an innovative approach on blockchain technology education.

The RESULTS of the project:

- Blockchain training course;
- Blockchain Implementation Assistant;
- BCT4SMEs Academy.

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1. Needs' Validation – overview

The aim of this paper is to analyse the data gathered from all six partner countries of the BCT4SMEs project. The research was conducted in Poland, Greece, Spain, Cyprus, The Netherlands and the UK. The main objective was to learn about the needs of SMEs and check their knowledge, skills and expectations in terms of **blockchain technology.**

Research group consisted of SMEs including IT experts and entrepreneurs who have already known the concept and have been somehow related to blockchain technology: digital sector experts; banking sector; finance experts; retail experts; software engineering experts. However, the target group was more than IT related sectors since it collected data from experts operating within various industries, for instance: accounting; consulting; construction; health care; logistics; business management; marketing; sales; manufacturing; automotive; and private sector (SME owners and managers).

In order to gain data from the research group in all six countries 17 questions were developed and raised. For the needs of IO1-A2 'Needs Validation Phase' all partners contacted their stakeholders with a survey on the needs of the project target group in relation to knowledge and skills for implementing the winning practices regarding blockchain technology in SMEs. An online google was shared between research groups between July and August 2021, since the unprecedented situation with the Covid-19 pandemic did not leave any ground for face-to-face meetings and gatherings with the target group.

Total number of interviewees: 162.

Based on the answers given in the questionnaires, the consortium will choose the most relevant topics for the next stages of the project, and develop interactive modules based on what attracted the interest of the responders the most. The modules will give the participants of the pilot testing the required knowledge about the endless possibilities offered by implementing blockchain in their businesses.

In this way SMEs will participate in the BCT4SMEs project from its earliest phases and also contribute to the design of final results since the project aims to meet the SMEs' expectations and needs.

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2. National Reports - summary

2.1 United Kingdom

2.1.1 UK – conducting validation phase

The partner responsible for the validation phase in the UK is CIVIC, Edinburgh.

The SMEs selected to complete this survey were mainly chosen from CIVIC' contacts list but also through research conducted on the web on Edinburgh-based small and medium companies. This allowed CIVIC to have a closer approach, and much better communication with the selected partners. The companies selected for this task were mainly operating in IT sector, Banking, Finance and Retail.

For the purpose of this research, CIVIC reached both SMEs which had never used Blockchain technology before, but also companies who already had implemented Blockchain technology within their business.

Although the number of participants reached more than 30, the whole process of contacting these SMEs through emails, represented a real challenge in these hard times.

2.1.2 UK – survey's results

Out of 31 respondents, 16 of them operated in the IT or digital sector, 4 in the banking sector, 6 in finance, 3 in retail, 1 in software engineering and 1 in private sector.

According to the survey the biggest security challenges faced by the SMEs in the UK are:

- data theft (80.6%)
- lack of awareness about the cyber security risks (61.3%).

There main financial challenge indicated were: the limited support offered by the public authorities (67.7%). Following, complex taxation structures with 58.1% and finally late payments (disruption to cash flows) with 48.4%, closely followed by lack of alternative financing solutions with 45.2%.

45.2% of the respondents knew about Blockchain technology, while 22.6 % didn't.

Out of 31 respondents, 29 of them had never received any type of guidance, training, or course on Blockchain technology. 100% of the respondents, who were asked if they ever implemented or tried to implement Blockchain technology within their business, answered no. 87.1% of the respondents chose to answer no to the question on planning to introduce blockchain technology into their business. The main reasons were Lack of knowledge how to technically implement it (64.5%) and Lack of full understanding of how the blockchain works (58.1%). Lack of knowledge of how to use it in mine business also received a great number of responses with 41.9%.

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Features that stopped SMEs from using blockchain technology were: lack of knowledge how to technically implement it (64.5%); Lack of full understanding of how the blockchain works (58.1%); Lack of knowledge of how to use it in business (41.9%).

The interviewees indicated the best opportunities to use blockchain technology within data privacy, data protection, payment security and investing.

Regarding the knowledge of the application of blockchain the survey shows that the majority of respondents don't have any particular knowledge on implementing this technology in the listed areas.

51.6% of respondents responded that they […] *don't know* if it is possible to use blockchain technology in any business. The same amount (51.6%) also *don't know* if the industry they work in can benefit from this technology. According to the respondents cybersecurity industry could be the one benefiting the most from the use of this technology (90.3%), followed by the new technology sector (74.2%).

Questions 16 and 17 were open questions. Please see the replies below.

Question 16: What knowledge do you need to consider introducing this technology into your business?

Technical knowledge
Security issues when trying to implement this new technology
Clear understanding of what it entails in terms of knowledge, infrastructure and processes
Not actually detailed technical knowledge but mostly someone to convince me that there is value on introducing this technology to my business
I would want to know that the number of benefits that this technology can bring is higher than the cons
That all my employees are well trained to implement this technology within the business
I'm not sure it's worth the investment
There needs to be a detailed and accurate training for all employees, plus more computing power in order to make sure the mining process is done correctly
I'm not sure the elimination of intermediaries would always result as a positive thing in the whole process, especially in payment operations

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Question 17: What skills do you need to consider introducing this technology into your business?

IT skills
Understanding of benefits
Understanding that each member of the company will be trained/informed about their role
Cybersecurity/digital security
Data protection
Blockchain security processes
Blockchain standards platforms
Cryptography
Web de

2.2 Poland

2.2.1 POLAND – conducting validation phase

Danmar Computers used its extensive contact database to contact SME owners and managers. Supporting Danmar was RARR (Rzeszow Regional Development Agency), which also helped in reaching the target group. Then the participants had 2 weeks to fill in the questionnaire. Eventually, 32 respondents were collected.

Danmar Computers also assumed that it would be better to translate the survey into Polish in order to make it easier for the participants to understand the questions due to the complexity of the topic. All answers were obtained from Polish participants, mainly from the IT sector

2.2.2 POLAND – survey's results

The Polish target group considered that the 3 biggest security challenges are:
- Lack of awareness about the cybersecurity risks;
- High costs of ensuring cyber security;
- Lack of allocated budget for this purpose.

Among the biggest financial challenges the Polish respondents chose:
- Lack of alternative financing solutions;

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-     Bureaucracy;
-     Limited support offered by the public authorities.

This shows the lack of confidence of Polish owners/managers of SMEs in Polish public institutes and its bureaucracy but also in the lack of financing solutions.

19% of respondents indicated that they do not know what Blockchain is. As many as 84% of respondents have never received any guidance, training or course on the blockchain technologies. Only one respondent answered that he or she was implementing blockchain technology. The vast majority (69%) of respondents do not plan to implement blockchain technology into their business in the future. *Lack of full understanding of how the blockchain works* and *Lack of knowledge of how to use it in business* were the two main replies of interviewees to question number 9: What is blocking you from using blockchain technology? This shows that the main problem is the lack of understanding of this technology and its possibilities for the sector in which the respondents operate.

The respondents see the opportunity to use blockchain in business mainly within *data privacy* and *avoiding currency exchange*. Regarding knowledge of the application of blockchain the two important aspects are elimination of intermediaries and data privacy.

The vast majority of respondents do not know if blockchain is applicable within their industry. 47% of them claim that their industry can benefit from using blockchain technologies. Furthermore, Polish respondents felt that the industries that would gain the most from the use of blockchain technology are: Financial Services; Cybersecurity; New technology; Banking.

Questions 16 and 17 were open questions. Please see the replies below.

Question 16: What knowledge do you need to consider introducing this technology into your business?

Knowing how to use this technology in my business

Actually everything from the beginning

Steps on how to implement from start to finish

Indication of benefits

Knowledge of the implementation of this technology, these activities in the sector in which I operate

Knowledge of blockchain technology

Technology knowledge

Workshops in this area

Greater access to theoretical training on the idea and operation of blockchain

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Questions 17: What skills do you need to consider introducing this technology into your business?

Digital skills

Security knowledge

Technical or IT staff

IT skills

To start with basic implementation skills

Java, C++ programming

2.3 Greece

2.3.1 GREECE - conducting validation phase

ASSERTED KNOWLEDGE contacted their associates in Greece through email to distribute the questionnaire. The company also made some posts in company's Facebook and LinkedIn account. The company tried to reach companies active in banking and financial, insurance and business services.

Number of respondents: 25

2.3.2 GREECE - survey's results

The interviewees indicated the below sectors they operate in:

Finance

Services

health care

Automotive

Sales of goods

Hospitality

Marketing Services

Trading

Educational Organisation

Logistics

Business Management

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Banking
Marketing
Marketing
Accounting
Sales
Manufacturing
Operations
ICT
Trade
Retail
Energy
Telecommunications
Hospitality
private

In the first question, regarding the security challenges that their companies confront, respondents defined the low ICT capabilities of employees and the lack of adequate staff to ensure cyber security as the main problems. The most important financial challenge that companies confront is the limited support offered by the public authorities. Other challenges of high importance include the complex taxation structures, the lack of access to financing, and the lack of alternative financing solutions.

It seems that most of the respondents know what blockchain technology is.

It seems that most of the respondents haven't received any training on blockchain technology. Those who have received training indicate:

- an online training
- a course
- seminar in the company.

Most of the participants indicated that they hadn't implemented blockchain technology in their business (72%). 16% claimed they had tried to implement this technology and named the following difficulties:

- Lack of specific knowledge
- Financial ones
- Lack of financial support.

Most of the respondents are willing to introduce blockchain technology into their business (72%).

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The most common problem that hinders the blockchain technology implementation is the lack of knowledge on how to technically implement it, the lack of confidence and trust for this technology, the lack of understanding of how it actually works.

Most of the respondents believe that it's important for blockchain technology to be used in *payment security* and for *avoiding currency exchange*.

Having analysed the answers to question 11 we can conclude that most of the respondents don't have the necessary knowledge when it comes to blockchain technology (most of them chose the rates 1-3).

Most of the participants believe that blockchain can be used in any industry (44%). At the same time most of the respondents believe that the industry they work in can benefit from blockchain technology (60%). According to the responses, the industry that can benefit more from the use of blockchain technology is the Banking sector.

Questions 16 and 17 were open questions. Please see the replies below.

Question 16: What knowledge do you need to consider introducing this technology into your business?

I would like to participate in a training

I am not sure/I don't know (8)

Technical implementation and short/long-term benefits.

Legal implication and IT

I would guess mostly technical knowledge is needed.

Everything, from concept to implementation and evaluation.

The available technologies

The availability and cost of these technologies

Advanced digital skills

Knowledge about the possible results of the blockchain

Theoretical and practical knowledge on blockchain technology.

How to access blockchain applications

General knowledge about blockchain

Knowledge about the main components of blockchain

The information of how to implement it

Knowledge of blockchain applications

technical

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Question 17: What skills do you need to consider introducing this technology into your business?

I am not sure/I don't know (9)
IT (3)
IT, Business skills, strategy
ICT skills and financial management
ICT SKILLS
Advanced digital skills
digital ones
Theoretical and technical knowledge
Technical skills
Planning and organizing
technical
Communication skills for communicating the main components of blockchain to the IT department
Nothing specific
technical

2.4 Spain

2.4.1 SPAIN - conducting validation phase

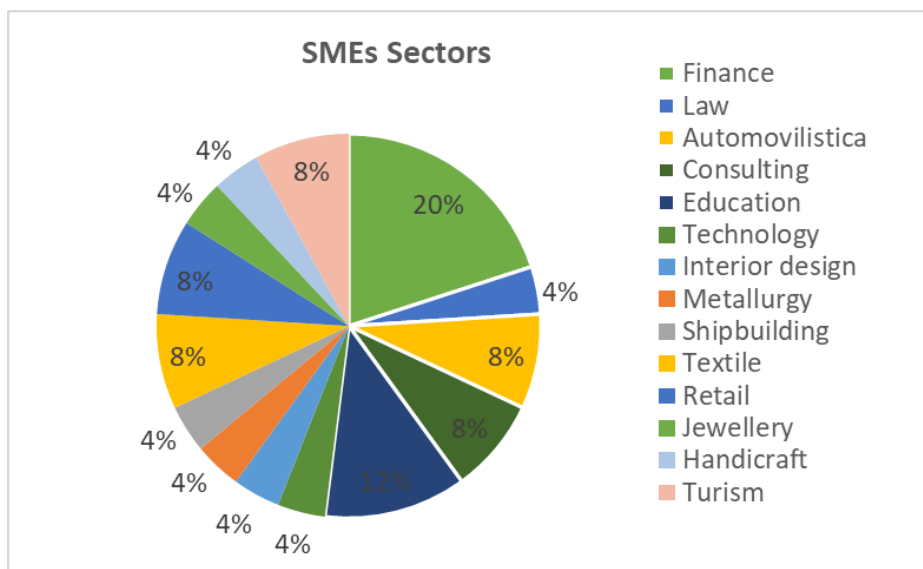The partner responsible for the validation phase is FyG Consultores.

The target group approached were almost 30-40 managers/ owners of SMEs. As this kind is generic, we have interacted with 30 specific SMEs.

FYG Consultores recruited them by different methods. In the first place, promoting through their social networks LinkedIn and Facebook. FYG posted the opportunity to be part of a project for those owners/managers of SMEs who want to contribute in solving the problems of their business by themselves.

In the second place, FYG used also the information posted on the website of the project (https://bct4smes.eu/about). Thirdly, FYG was in contact with some SMEs (via telephone or WhatsApp) who showed their interest in participating in this survey, as they were looking for new technological solutions to increase the security of their companies, and had never ventured into blockchain technology before.

Number of respondents: 30

Please see information about the respondents' sector below:

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SMEs Sectors

Legend: Finance, Law, Automovilistica, Consulting, Education, Technology, Interior design, Metallurgy, Shipbuilding, Textile, Retail, Jewellery, Handicraft, Turism

2.4.2 SPAIN - survey's results

Regarding company security, most respondents agree that the greatest risk is data theft (53,3%%). A close second is the high costs of ensuring cyber security (46,7%). And the third most voted risk is the high costs of ensuring cyber security (43,3%).

Regarding financial problems, the most of participants name the limited support offered by the public authorities as the main risk (73,3%). A close second is the lack of preparation for unforeseen expenses (66,7%). In third place, there is a tie between the limited support offered by the public authorities (60%) and late payments (60%).

In general, the respondents say they do not know what blockchain technology is. There is a negative percentage of 46,7% and only a positive percentage of 23,3%. The other 30% are in a neutral position, neither positive nor negative. They have probably heard of it, but do not know exactly what the concept and consistency of blockchain is. 27 persons out of 30 confirm that they have not had any training or education on this technology. The only response that was received from those participants who had received any guidance was that they had attended seminars. The participants did not have further comments about their usefulness.

Almost none of the companies have tried to implement blockchain technology before (96,7%). The respondents don't have any plans to implement this technology as yet - only 8 of the 30 respondents showed their interest. The other 22 participants said they were not thinking about its implementation. This is a consequence of the previous questions: low knowledge, low training, low interest.

The *lack of knowledge of how to use blockchain technology in businesses* (70%) and the *lack of full understanding of how the blockchain works* (66,7%) were the main barriers stopping the companies from using the technology.

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From the comments to question 10 the main conclusions that can be extracted are that the blockchain is perceived as an opportunity and chance to learn mostly about all options as equals, especially about data privacy. However, the areas where there is most doubt are data protection and investment. When asked about data privacy, 20 people out of 30, i.e. almost 70% of the participants say they have no knowledge of how to apply blockchain technology in this field.

Most of the respondents thought the blockchain technology could be used in any industry (only one participant gave a negative answer to question 13).On the assessment of the industries which would be more benefited by the use of this technology, there is a majority pointing the new technology sector and the cybersecurity, which, interestingly, are where the greatest security risks were seen in question 1.

Question 16: What knowledge do you need to consider introducing this technology into your business?

The most common response is that participants need specific training on blockchain technology (9 such responses), its benefits and disadvantages, and how to apply it to their business. A high number of answers also relate to knowledge in ICT and finance. More than 3 participants answered that they would need more basic and application knowledge of ICT and training in cyber security awareness, especially for employees. To a lesser extent we also find other answers that talk about market or investment knowledge. Anecdotally, we have a response that says "eager to learn about this technology". This is not knowledge as such that can be acquired, but it can help us to know what is important for owners/managers of SMEs to implement this technology in their company: that they are interested in it, that they are willing to learn about it.

Question 17: What skills do you need to consider introducing this technology into your business?
Regarding the skills, the answers we found were that, more than 7 respondents said that they need IT (ICT) and security skills. Another 3 or 4 respondents see a need for analytical, planning and strategic management skills, as well as investment skills.

2.5 Cyprus

2.5.1 CYPRUS - conducting validation phase

In order to gather all the required responses from the target group in the context of IO1 for the BCT4SMES project, Frederick University asked 23 experts to state their preferences in a questionnaire.

The companies and the people who took part in the survey and completed the questionnaires are managers or owners of SMEs in Cyprus and are somehow related to blockchain technology. Frederick University did not opt for specified SMEs specialization (IT / technology SMEs) but a rather bigger target group, because the market in Cyprus is relatively small to the other countries. The target group has been contacted primarily through emails and then through telephone conversation, we also approached the responders through our broader network, LinkedIn, personal contacts, etc.

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2.5.2 CYPRUS - survey's results

The responders are mainly active in the following sectors:

- Construction
- SaaS
- Law
- Consulting
- Accounting
- Banking

In the first question, the responders had to answer what are the biggest security challenges that they have to overcome in their company. 50% of the responders consider as the most challenging part the low ICT capabilities of employees and secondly (47,8%) risks related to the use of new technologies such as iOT cloud computing, big data.

Limited support offered by the public authorities was indicated as the biggest financial challenge (69.6%).

The majority of the responders, and more specifically 60,9% are fully aware of blockchain technology while the 21,7% are somehow familiar with blockchain technology. Only 17,4% of the target group is not aware of this perspective at all. Surprisingly, 73,8% did not receive any guidance/ training. The respondents were also asked if they had implemented blockchain in their businesses in the past/ or recently. The majority (73,9) hadn't made any use of blockchain technology yet.

Question 8. In this question the interviewees had to state whether they could use the blockchain practices into their businesses. Only 43,5% of them stated that they would.

The responders stated that the biggest obstacles that they have when it comes to implementing blockchain currently are:

- Lack of full understanding of how the blockchain works
- Lack of knowledge of how to use it in my business
- Lack of knowledge of how to implement it technically.

The majority of the responders stated that they would potentially use blockchain mainly for data protection and data privacy since they believe that these two are the most crucial aspects. Secure payments are also important while the rest of the categories received a lowest rate of preference.

Responders are familiar with payment security, decentralization as well as the elimination of intermediaries. They have very limited knowledge when it comes to investing and avoiding currency exchange.

47,8% agreed that blockchain technology could be use in any industry. Moreover, almost 70% involved in this research are well aware of the benefits of using blockchain techniques in their industries. Financial services can benefit from this technology according to the respondents (18 out of 23).

Questions 16 and 17 were open questions. Please see some of the replies below.

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Question 16: What knowledge do you need to consider introducing this technology into your business?

Financial and IT knowledge

web development and apps programming

ICT and blockchain

Academic or University knowledge

Software engineering

Further understanding of how to implement it and what blockchain is

Practical and theoretical knowledge

Basic knowledge and General understanding

Govermental regulations

Practical Applications/ success showcases of the relevant technology

Details to what is implied and training of staff

Extensive training

Financial regulations and procedures

Question 17: What skills do you need to consider introducing this technology into your business?

Financial and IT skills

Security skills

ICT and blockchain-related specific skills

Training from experts

Software engineering

Game theory, economics, distributed systems, cryptography

Blockchain Understanding

Web development, Data structures, Cryptography

Computer science skills

Understanding of security risks

Basic knowledge

Problem-solving and collaboration skills

Extensive training

Academic and work experience

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2.6 The Netherlands

2.6.1 THE NETHERLANDS - conducting validation phase

ATERMON reached their contacts (and encouraged them to share the survey questionnaire with their contacts also) by email. The companies that were contacted were picked from a wide range of sectors, such as construction, services, financial, automotive, furniture, software development, etc. The completed questionnaires were submitted through Google forms.

2.6.2 THE NETHERLANDS - survey's results

Respondents come from a wide range of SMEs from automotive industry and construction to ICT providers and Logistics sector.

Almost 70% of all respondents identified the '*Low ICT capabilities of employees'* as the biggest security challenge, followed by '*Risks related to the use of new technologies* (IoT, cloud computing, Big Data) at almost 50% and '*Lack of awareness about the cybersecurity risks*; at 43%.

When asked on the biggest financial challenge, both '*Lack of access to financing*' and '*Lack of alternative financing solutions'* scored higher at 52% of all respondents. The next most significant ones were '*Difficulties in obtaining loans'* and '*Bureaucracy*' at almost 40%.

Only 24% of all respondents stated that they know what blockchain technology is. Almost 40% admitted that they do not, while a significant 40% has a vague idea of the blockchain concept. A massive 90% of all respondents have received no guidance/training/course on blockchain technologies.

For only 2 respondents (out of 21), that admitted they have received training/ guidance on blockchain technology, they did so via:

- BLISS online course. It was very useful even if the course is primarily addressed to ICT professionals.
- Some very general information from the web and open online courses from other EU projects.

A massive 76% of all respondents stated they have not implemented (or tried to implement) blockchain technology in their business. Less than 15% have tried without success, and only a 9% have actually implemented blockchain technology.

Among the respondents that tried to implement blockchain technologies in their business without success, the difficulties were attributed to:

- Vague information and lack of skills for implementation
- Lack of skills for implementation

Only 9 in 21 respondents (43% of all) stated they are planning to introduce blockchain into their business.

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Lack of full understanding of how the blockchain works has scored higher (48%) as a bottleneck to using blockchain technology, shortly followed 'Lack of knowledge of how to use it in mine business' at 43%, and 'Lack of confidence and trust for this technology' and 'Lack of knowledge how to technically implement it', both at 38%.

'Payment security' and 'Investment', followed by 'Faster Transactions' seem to be the most popular opportunities for the respondents to use blockchain in their business.

Without significant differentiation, respondents assessed their knowledge of the application of blockchain as poor (#1) in all areas presented.

Less of a third of all respondents (6 out of 21) think that blockchain can be used in any industry, while the rest stated uncertainty. None responded negatively to **question 13**.

The majority of respondents (67%) are unsure whether their company can benefit from blockchain technology.

The vast majority of respondents (86%) believe that the 'Financial Services' is the industry that benefits most from this technology, followed by the 'Banking' and the 'Cybersecurity' sectors, at 67% and 62% respectively.

Questions 16 and 17 were open questions. Please see some of the replies below.

Question 16: What knowledge do you need to consider introducing this technology into your business?

Not sure
Everything
C o n c e p t u a l,
I'm guessing every knowledge related to the implementation of blockchain in my sector of business
Security and Legal implications
I don't know
The available blockchain technologies and applicability for each sector
The term of blockchain. The available programmes and technologies
Knowledge about the process of transactions and investment
How to implement it and the benefits of it
benefits (why?) - application (how?) - case studies (what?)
Everything around blockchain
Fundamentals of Blockchain and Distributed Ledger Technologies   **Blockchain System Architecture**   **Blockchain Security**

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| |
|---|
| **Blockchain Platforms** |
| **Regulation and Legal Aspects** |
| **How and why to introduce it** |
| **Blockchain technology and how to implement it.** |
| **How to use the blockchain technology in a small-medium enterprise like mine.** |
| **What is available for the type of the company I work for (small-medium enterprise)** |
| **Everything I guess** |

Question 17: What skills do you need to consider introducing this technology into your business?

Not sure.
Not sure
IT, Legal?
IT, Legal
I don't know
ICT skills, financial management and e-privacy
ICT skills and financial management
Technical skills
Technical knowledge and deep understanding of its applicability
not sure, maybe software engineering and financials?
Everything around blockchain
Developing use cases
Blockchain Business Management and Planning
Governance of Blockchain Systems
ICT skills
All about blockchain technologies and practices.
Everything about the adoption of blockchain technologies and the specific benefits of it
ICT and financial skills.
Financial, legal and technical skills.

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3. CONCLUSION

The below section provides a brief summary of the forementioned data from each country – it focuses on drawing conclusion. The aim is to analyse the common features and also find the opinions and suggestions that differ. This analysis will help draw certain conclusions from the research phase. This can help develop the BCT4SMEs Project in the appropriate way so that companies could use the information on daily basis.

In terms of the biggest security challenges that a company could face, all the respondents from all six countries surveyed chose very similar answers. Please see below the most frequent answers (the answers with the highest score per country):
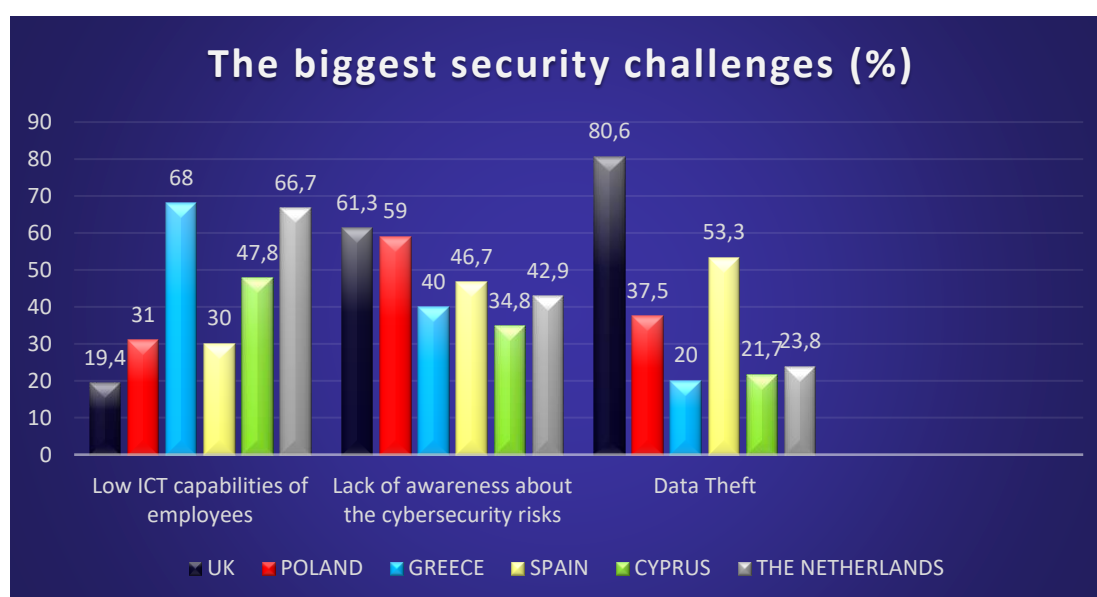
The above graph shows the three most frequent answers to question 1. The biggest security challenges are: low ICT skills of employees; data theft; and lack of awareness about the risk. It is worth noticing that the most common answer per country was lack of ICT skills of employees. The conclusion is that SMEs are aware of the importance of digital data and they want to make sure the employees are careful about digital data. Thus providing training to SMEs on the risks involved is crucial.
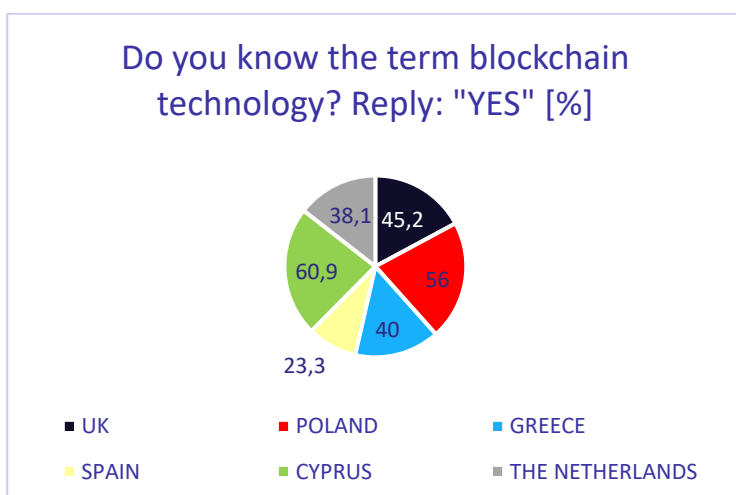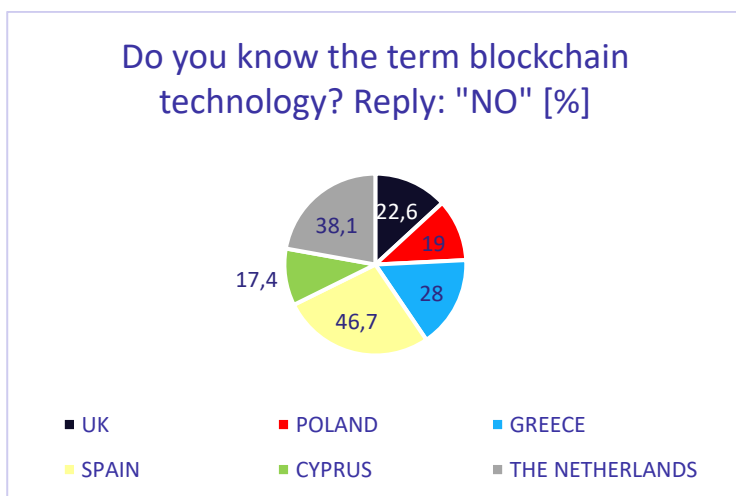
In terms of financial challenges the most frequent replies per country were:

- Lack of access to financing (in Netherlands)
- Lack of alternative financing solutions (Poland, Netherlands)
- Limited support offered by the public authorities (Cyprus, Greece, Spain, UK).

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The biggest financial challenges (%)

The general conclusion is that the interviewees do not feel that the public authorities offer support. Furthermore, SMEs do not observe many financial possibilities that they could use in order to develop their business and try new things.

The third question in the survey was about the term itself – respondents were asked to state if they knew what blockchain technology was. Please see the below charts which show the number of negative/positive replies in given country:

Do you know the term blockchain technology? Reply: "NO" [%]

Do you know the term blockchain technology? Reply: "YES" [%]

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The conclusion: We may observe that there are two countries where the respondents were not familiar with the term: UK and Spain. The remaining countries were rather familiar with the term.
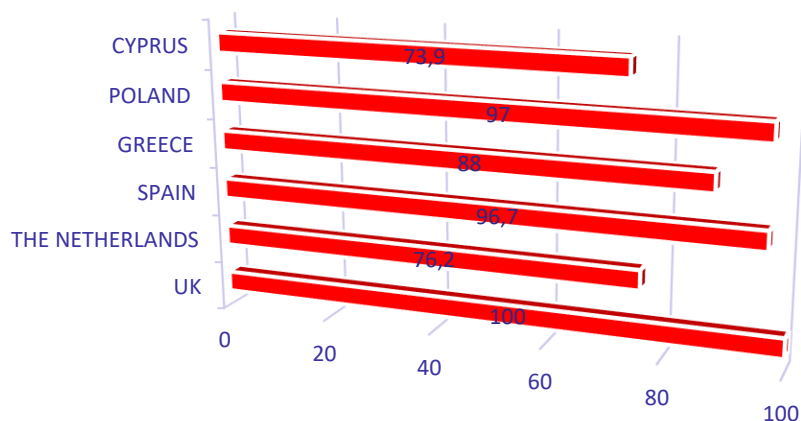
Regarding the training provided/ guidance on the term and its use, some replies were: online courses; open online resources; assistance from professional consultants; General Technology Awareness course; seminars within the company; MSc in Digital Currency. Nevertheless, it is worth mentioning that ***enormous number of respondents did not receive aby guidance or training*** at all:

"I HAVEN'T RECEIVED TRAINING" [%]

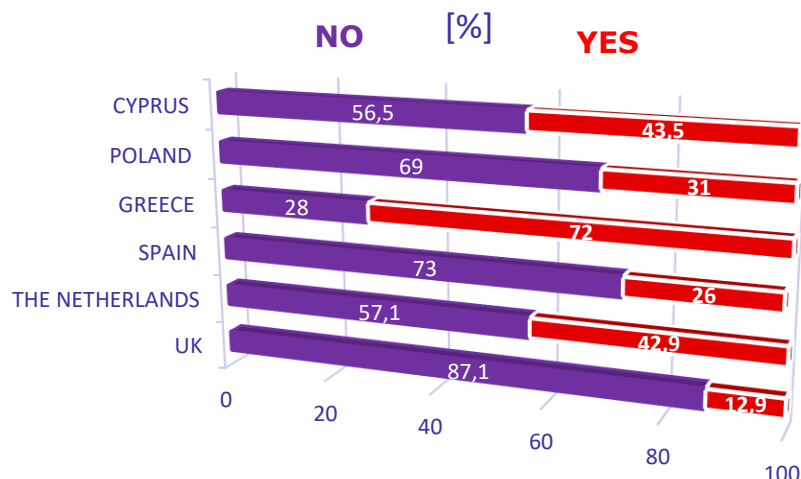| Country	Value
SPAIN	90
THE NETHERLANDS	90,5
CYPRUS	73,9
GREECE	88
POLAND	84
UK	93,5
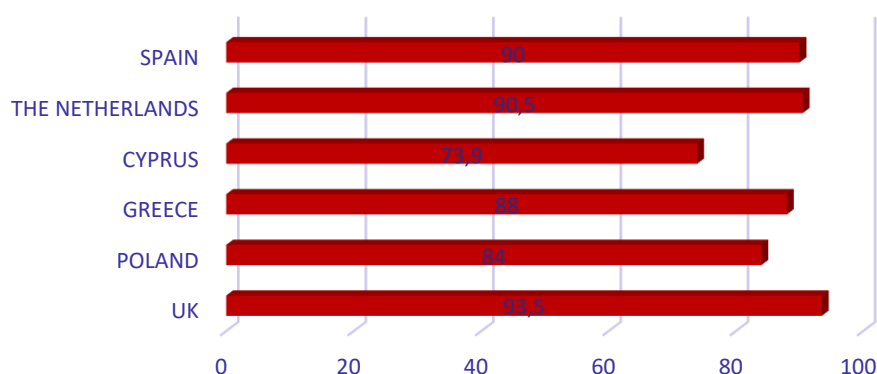
The fact that overwhelming number of respondents have not received any training or guidance concerning blockchain technology is indisputable. This data clearly shows that there is still not enough training available for SMEs. As consequence companies are not fully aware of this technology – its use; ways of implementation; benefits. Even if most of them had already been aquaintanced with the term, most probably their understanding of blockchain technology is still quite vague. This conclusion is actually proven accurate by the data received from the research in six countries. Please have a look and analyse the following charts:

"I have *NOT* tried implementing this technology." [%]

Country	Value
CYPRUS	73,9
POLAND	97
GREECE	88
SPAIN	96,7
THE NETHERLANDS	76,2
UK	100

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Are you planning to implement this technology?

NO   [%]   YES

Country	NO	YES
CYPRUS	56,5	43,5
POLAND	69	31
GREECE	28	72
SPAIN	73	26
THE NETHERLANDS	57,1	42,9
UK	87,1	12,9

Almost 100% of respondents have not tried to implement the blockchain technology in their businesses. They indicated the below reasons disabling them from using this technology in the future (the most frequent reply per country was chosen):
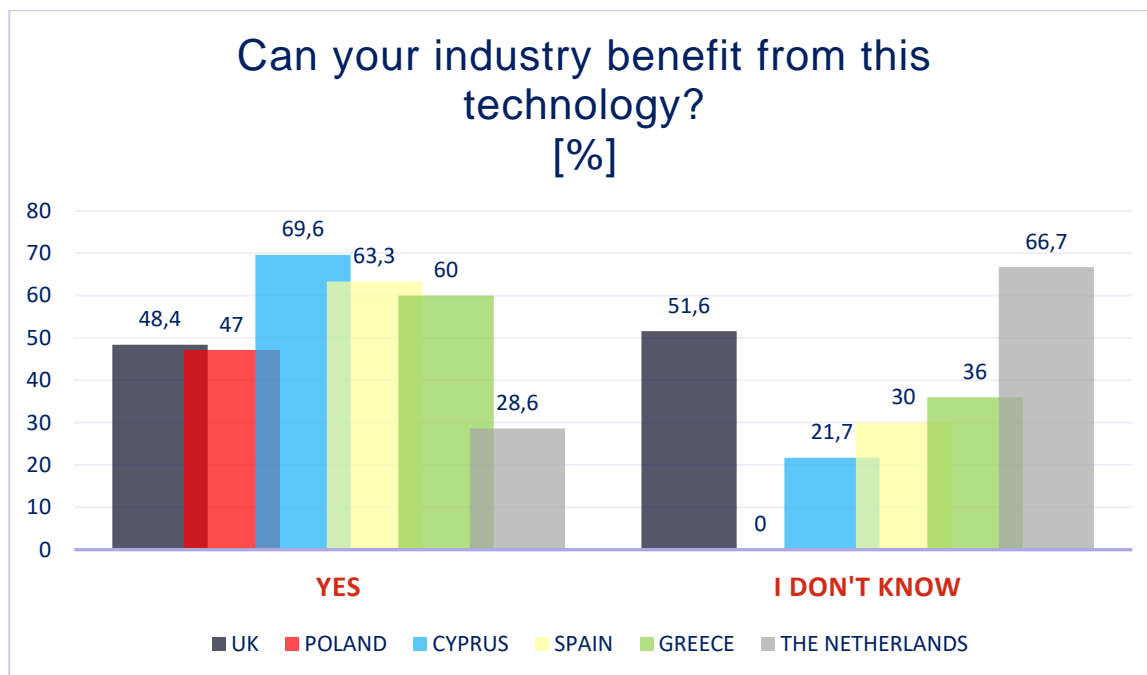
- Lack of full understanding of how the blockchain works (the Netherlands, Cyprus, Poland)
- Lack of knowledge on how to technically implement it (Greece, UK)
- Lack of knowledge of how to use it in their businesses (Spain)

These **points should be taken into consideration as the main aspects for developing the results of the BCT4SMEs project** and improvement of the companies. It is clear to notice that lack of knowledge is the main issue that stops SMEs so that they do not implement the blockchain technology in their business. Therefore, further training programmes and courses are of the highest importance and needed nowadays.

The survey results (see the chart above) also indicate that lack of knowledge does not stop SMEs to consider the use of this technology in the future – there are many replies within the research that are very positive; many respondents (especially in Greece) show eagerness to implement the blockchain technology in their business in the future. Nevertheless, they still need to be trained in order to do so.

Moreover, respondents declared they see opportunities of using the blockchain technology within: Payment Security; Investment; Data Protection; Data Privacy; Avoiding Currency Exchange; Avoiding Currency Exchange.

Most of the respondents believe that their industry could benefit from the blockchain technology. However, lots of them also declared that they had been unable to tell if the industry could actually benefit from it. This is connected to the conclusion drawn above – most of SMEs interviewed during the research were lacking information on the term. Therefore, they could not really tell what the actual outcomes resulting from implementation of the forementioned technology would be.

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Can your industry benefit from this technology? [%]

YES — UK 48,4; POLAND 47; CYPRUS 69,6; SPAIN 63,3; GREECE 60; THE NETHERLANDS 28,6

I DON'T KNOW — UK 51,6; POLAND 0; CYPRUS 21,7; SPAIN 30; GREECE 36; THE NETHERLANDS 66,7

Legend: UK, POLAND, CYPRUS, SPAIN, GREECE, THE NETHERLANDS

In Poland there were no "I don't know" replies. Instead, responses to this question split almost evenly (between "YES" and "NO"). This means that the target group is divided and does not know whether its sector can gain from using this technology.

The respondents indicated also the industries they think would most probably benefit from the blockchain technology: Financial Services; Banking; Cybersecurity; New Technology.

A large group of respondents claimed that the technology could be used in any industry. Nevertheless, many SMEs stated that they could not tell if it was possible or not which again proves that the respondents were lacking elaborated knowledge on the term.

Do you think that this technology is beneficial for any industry? [%]

YES — UK 22,6; POLAND 22; CYPRUS 47,8; SPAIN 70; GREECE 28,6; THE NETHERLANDS 28,6

I DON'T KNOW — UK 51,6; POLAND 75; CYPRUS 26,1; SPAIN 26; GREECE 71,4; THE NETHERLANDS 71,4

Legend: UK, POLAND, CYPRUS, SPAIN, GREECE, THE NETHERLANDS

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Finally, the respondents were asked to indicate skills and knowledge that they thought would be essential/ crucial for implementing the blockchain technology. The most common replies are listed below and they should be also taken into consideration while developing the content of BCT4SMEs project. Moreover, we list below also some comments that we find interesting:

I'm guessing every knowledge related to the implementation of blockchain in my sector of business
Everything The term of blockchain. The available programmes and technologies
benefits (why?) - application (how?) - case studies (what?)
How to use the blockchain technology in a small-medium enterprise like mine
Fundamentals of Blockchain and Distributed Ledger Technologies
ICT skills, financial management and e-privacy
Academic or University knowledge
Govermental regulations/ Legal implication
Practical Applications/ success showcases of the relevant technology
Details to what is implied and training of staff
Extensive training/ Workshops in this area
Training from experts
Security skills
Software engineering
Communication skills for communicating the main components of blockchain to the IT department
How to access blockchain applications planning and strategic management skills investment skills
Data protection
Cryptography
Web development
Security issues when trying to implement this new technology

The most important conclusion from the research would be the fact that SMEs are still lacking knowledge about the blockchain technology. Nevertheless, they are interested in the topic and motivated to learn more. The replies provided show various suggestions which can be the source of inspiration for the BCT4SMEs Project so that the useful outputs will be developed. The research also proves that there are not enough training available on the topic of blockchain technology. Thus, developing competent material is crucial and will surely be of high value for SMEs.