Intellectual Output 1

Rationalisation Phase

Deliverable: IO1/A1

BCT4SMEs

10.03.2021

ASSERTED KNOWLEDGE

Project Number: 2020-1-UK01-KA202-078895

Co-funded by the Erasmus+ Programme of the European Union

REVISION HISTORY

Version	Date	Author	Description	Action	Pages
1	14/4/2021	AKNOW	Creation	C	12

(*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

REFERENCED DOCUMENTS

ID	Reference		Title
1	2020-1-UK01-KA202-078895		BCT4SMEs Proposal
2			

APPLICABLE DOCUMENTS

ID	Reference		Title
1			
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Executive Summary

This documents presents the deliverable of the activity IO1.A1 of the BCT4SMEs Project (henceforth, "Project").

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. Blockchain technology can offer a solution to these challenges, as it can have a wide range of application in many fields, such as IoT, monetary exchange (bitcoin), storage, etc.

The project aims to support SMEs managers and owners in integrating blockchain technology and benefit from the advantages it comes with.

The present document contains information regarding:

- The security and financial issues that SMEs face in partner's countries;
- Information about the successful application of blockchain technology in the EU;
- Conclusions on the gap between the desired situation and the present situation.

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1. Methodology

During the rationalization phase, we will conduct research regarding the current problems that SMEs confront in terms of finances and security in partners' countries (UK, Netherlands, Spain, Greece, Cyprus, Poland). This phase will be called the "National Phase". The conclusions of the National Phase will reveal the present situation ("AS-IS").

We will also identify the winning practices from SMEs that use blockchain technology to address the issues that have proved challenging to SMEs. This phase will be called the "Transnational Phase". The best practices will include information on the successful implementation of blockchain technology in SMEs across the EU.

The comparative analysis of the Transnational Phase with the National Phase will reveal the gap between the desired situation ("TO-BE") and the present situation ("AS-IS").

2. National phase

2.1 Financial Challenges for SMEs

Most of the Greek enterprises (99.9%) are SMEs, and most of them are micro-enterprises. The financial crisis in 2010 and the sovereign debt crisis had a profound impact on the Greek economy. During the following years SMEs had many issues in loans lending while, in the 2017 the SME lending slightly increased, following a 7-year period of consistent decline. For many years, credit to all businesses was falling, but in 2016, SME loans' stock increased to EUR 48.1 billion, but again declined to EUR 44.7 billion in 2017 and EUR 41 billion in 2018 (OECD, n.d).

In fact, Greece is one of the weakest performers in the EU in access to finance. Venture capital is not available in Greece, while the funding for new and growing firms in Greece is one of the lowest in the EU. Surveyed experts have estimated the availability of equity funding for new and growing firms in Greece to be one of the lowest in the EU. Greece is also among the worst performers in three indicators measured by SBA: share of rejected or unacceptable loans to SMEs, the willingness of banks to provide a loan, and access to public financial support (SBA Fact Sheet- Greece, 2019).

One problem the Greek companies (start-ups and developing ones) face is the bureaucracy. As a result, a great number of businesses who manage to overcome the initial difficulties and started their activities do not survive more than two years. This is also a result of the very limited support offered by the public sector and the related chambers of commerce, trade associations and similar institutions. As a consequence, at the initial development stages, SMEs have to depend on funds coming mostly from the owners, their families, friends, and sometimes from venture capitalists. In the later development stages, SMEs are primarily funded from their own funds coming from surpluses or other means of external capital, while at a later stage, they have access to bank loans and other groups of companies from the SME sector. External acquisition of capital by SMEs is the factor that allows them to finance investments aiming to further development and growth. The main sources of these external sources of capital for the SMEs are non-banking sources, such as trade credit, lease, factoring, franchising, etc., and bank loans which could be short-term and/or long-term (Katsioloudes & Jabeen, 2014).

Another problem that the Greek SMEs face is the limited cash flows. According to a research conducted by the Piraeus Bank, most Greek SMEs operated with limited liquidity in 2018 due to the economic crisis. In fact, the companies that have adequate cash flows in terms of liquidity, efficiency and solvency and are ranked in the highest rating ("a") of ERS, is only the 7.9% of the companies (mononews, n.d).

Furthermore, a survey from the European Central Bank, revealed that access to finances is the main concern for SMEs in Greece, while is the only European country which is affected to a great extend from this problem. When asked whether "access to finance" was as a problem in their current situation, as SMEs in Greece continued to perceive it as a very important problem during the years. A relevant problem for Greek SMEs, as already mentioned, is the need for bank loans. In particular, in Greece, the availability of bank loans has tightened further during the last years, as 38% of SMEs identified the presence of increasing difficulties in accessing bank credit for SMEs, but also for large enterprises. At the same time, SMEs in Greece reported negative expectations regarding the availability of internal funds while expect further challenges in bank loans, bank overdrafts and trade credit. Another important problem of the banking sector in Greece is the size of the Non-Performing Loans, which also hinders the availability of bank finance to SMEs

In addition to this, SMEs in Greece have noticed a negative perception of banks' willingness to lend (-30%, down from -22%) and access to public financial support (-51%, down from -36%) during the last years. Also, many SMEs mentioned fear of rejection as a factor discouraging applications for a bank loan, while 9% of SMEs reported that their loan applications were still pending (European Central Bank, 2015).

Nevertheless, many Member States are trying to provide alternative solutions for available finances to SMEs, beyond the banking system and diversify the types of finance available to SMEs. Alternative solutions comprise factoring or crowd-lending, which have recently shown strong growth rates in some Member States. In Greece alternative markets like crowd-lending are not yet established and, thus these types of financing do not exist or are poor.

In the country, there is a single digital portal to inform public audience on available financial instruments. The portal was created by the Directorate for the Support of SMEs of the General Secretariat of Industry & SMEs of the Hellenic Ministry for Economy & Development. The portal gives information and guides SMEs to accredited organisations that provide financial instruments and opportunities (European Commission, 2020).

We can conclude that the main problems that SMEs in Greece have are access to finances in all their development stages. In particular, bank loans are really hard to be accredited to the companies, while another critical issue that many times comes as a result of this situation is the limited liquidity.

2.2 Security Challenges for SMEs

Because of the COVID-19 pandemic, European Small and Medium-sized Enterprises face many issues including abrupt shift to remote work and cybersecurity challenges. The most common issues that companies face regarding to cybersecurity are (Seaton, 2020):

- Lack of awareness about the cybersecurity risks
- False sense of security, and wrong security policies
- Lack of knowledge and understanding
- Lack of staff training
- Lack of allocated budget

According to PwC's 2017 Global State of Information Security Survey, at least 80% of companies in Europe have experienced at minimum one cybersecurity incident, while the number of security issues

across all sectors worldwide increased by 38% in 2015, in comparison with the previous year. Also, in 2017 recorded two major ransomware attacks in businesses across Europe. In Spain, telecommunications, in Germany, train systems and in the UK, public health systems were all affected. As a consequence, all 28 Member States have developed cybersecurity strategies, with Greece being the most recent and the last state to adopt a national strategy. Although all Member States have a cybersecurity strategy, there are many differences among them (Kertysova, et al., 2018).

However, in Greece there is no comprehensive legal framework on Cyber Security. In the Criminal Code the following cybercrimes are included: computer fraud (art. 386a) violation of secrecy of computer programs or data (art. 370B), unauthorized use of software, (art. 370c para. 1) unauthorized data access (art. 370c paras. 2 & 3), child pornography (art. 348a), grooming (art. 337). Although, Greece signed the Cybercrime Convention, its legislation does mention legal sanctions in case of attacks against information systems. Some other relevant laws are the following:

-Data Protection Act (Law 2472/1997, art. 10 para. 3), which provides for the obligation of the data controller to take technical and organizational measures for the protection of personal data.

-Law 3471/2006 (Article 12) transposing Directive 2002/58, while provides for the obligation of telecom providers to take technical and organizational measures to ensure the security of its services and of the public electronic communications network.

-Law on electronic communications (Act No 4070/2012) which provides rules for the security and integrity of electronic communication networks and services (Christodoulaki, et al., 2015)

Pylones Hellas, which is a provider of IT solutions for medium and large companies, with a presence of more than 22 years in Greece, created and conducted a research on cloud computing security, in collaboration with the Department of Digital Systems of the University of Piraeus. More than 350 IT professionals and executives participated in the research. 67.06% of the total participants are in a key position in the IT sector, with 27.84% stating that they are in the IT security sector professionally, while 13.47% are in the IT Networking sector and 25.75% of the participants are employed in other IT sectors.

According to the survey results, 37.54% of the participants have already faced a cyber-threat or cyber security breach without serious problems. However, 10.81% stated that they had serious consequences from cyber-attacks. The most common threats are breach of accounts, services and data, phishing attacks, malware (viruses, worms, Trojans, ransomware) which are all in the same level of concern for IT professionals.

48.20% of respondents believe that the biggest problem when it comes to protection against cyber-attacks is the ignorance of the risk of cyber-attacks. In addition to this 29.38% of the respondents believe that, it is not possible to properly address the threats due to lack of resources or infrastructure. They conclude that the primary measure to be taken is education (IT security awareness training) about these type of threats, and larger investments in Network & Firewall protection and Cloud security.

Also, the cloud services are being used by many companies, especially in the COVID-19 era. In particular, 82% of the respondents stated that they use a cloud service in their company such as Infrastructure as a Service (IaaS), Software as a Service (SaaS) or Platform as a Service (PaaS). However, 50% believes that the cloud security provided by the provider is not sufficient. The biggest concern regarding the use of cloud services seems to be the lack of skills to understand the impact on security by 51.80%. While a significant percentage of 52.91% declare as the biggest challenge of cloud security the detection and response to security incidents that comes as a result of lack of visibility in the cloud and ignorance of cloud security (nafteboriki, 2020).

Some European Countries have explored the topic of governmental clouds, connected to the adoption of security frameworks (Gov Cloud adopters). The Greek Gov Cloud is comprised of Okeanos18 and ViMa, which are Cloud services provided by the Greek Research and Technology Network S.A. (GRNET) and they are mostly used to the national academic and research Okeanos is a

Cloud service with customers in the academic and research community, and thus is mostly used by Higher education Institutes. ViMa aims to provide shared computing and network resources to the educational and academic community, with production-level quality In order to be able to ensure high availability, both Okeanos and ViMa are hosted on multiple computing clusters distributed in several data centres in Greece. The Gov Cloud network infrastructure ensures seamless connection to the telecommunications backbone (and Internet), at very high speeds. Okeanos and ViMa are based on open source software (ENISA, 2015).

In conclusion, the most common threat in terms of security is cyber security, and the attacks aiming to steal personal data, services and accounts, while could security is also arises some concerns and issues. While some European countries are Gov Clould adopters, the cloud services are mostly used for national and academic research, meaning that companies still have to figure out how to solve their issues on their own.

3. Transnational Phase

3.1 Best practices in application of blockchain technology in finances

Name of the company	BEEZ &TOYS
Website	www.beezandtoys.com
Sector	Manufacturing
Country	Serbia
Description of the issues that the company was facing before the application of blockchain technology (if applicable).	-
Desciption of the blockchain stategies that the company adopted.	BEEZ& Toys is a manufacturing company in the toys sector. The company decided decided to adopt a blockchain-based solution from company Infidia because it thought that this solution can help it use some financial instruments that it would not be able to use without blockchain. Infidia app is a blockchain-based solution that keeps records of the business process prior to invoice creation. In both web and mobile apps, Infidia verifies invoices for invoice financing, in order to help small businesses, to solve liquidity issues, and fund their growth.

Name of the company	mBrainTrain
Website	mbraintrain.com
Sector	Innovation
Country	Serbia
Description of the issues that the company was facing before the application of blockchain technology (if applicable).	The company had to deal with long payments delays from is costumers (institutes, universities, etc).
Desciption of the blockchain stategies that the company adopted.	mBrainTrain aims to make EEG (method of brainwave recording) a method that that will be used in everyday activities. The company adopted InfidApp to change the above mentioned problem. In general, the company sees Infidia's as a cash-flow solution. Also, the company provided feedback to the Infidia for examing the opportunity to: - Verify the business transactions behind the invoice that provides the basis for invoice discounting -Link orders with invoices and various documents -Reduce invalid invoices -Create a new pool of clients for banks -Unlocking small invoices -Enable a bundle package and define the level of risk

3.2 Best practices in the application of blockchain technology in security

Name of the company	Piegāde69
Website	www.piegade69.lv
Sector	Transport
Country	Latvia

Description of the company's challenges before the application of blockchain technology (if applicable).	The company is a third party delivery service provider and it wanted to collect trustworthy data and show this information to its b2b customers.
Description of the blockchain strategies that the company adopted.	The company established in 2018 with the aim to provide transporting services accross Latvia. The company setted as goal to collect proof about the quality of its delivery. Piegad69 understands that blockchain-based applications will have legally binding power in the future, and because the company is a third party delivery service provider, it wants to collect trustworthy data and show this information to its b2b customers.

Name of the company	AlBicchiere
Website	www.albicchiere.com
Sector	Food and Beverage
Country	Italy
Description of the issues that the company was facing before the application of blockchain technology (if applicable).	AlBicchiere wanted to find a way to control a complex logistic chain with many different actors.
Desciption of the blockchain stategies that the company adopted.	For that reason, the company has tested, validated and adopted Datarella's blockchain-based solution. Datarella has developed "TRACK & TRUST", a digitized and secure tracking solution for valuable goods on their supply chain journeys. AlBicchiere adopted the platform as they believe that a distributed ledger in the control of logistic chain would encourage consumers to purchase from it (as they will be efficient transparency and control for transportation processes) and would also support wine producers when using the company's system.

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