

# Intellectual Output 1

Rationalisation Phase

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Deliverable: IO1/A1



## BCT4SMEs

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## REVISION HISTORY

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(\*) 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			
2			

## Executive Summary

This document 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

SMEs are of huge importance to the Scottish and UK economies, representing as they do about 99% of the business population. And although in many ways, the UK has a reputation as being a hospitable environment for SMEs, with studies suggesting that it is relatively favourable toward SMEs in terms of issues such as tax simplification, regulatory burden, and taxation overall, there are a number of financial challenges for SMEs in Scotland and the UK more broadly. Some of these perennial and general challenges that any SME anywhere might expect to sometimes encounter, others are more ephemeral challenges, specific to this time and this country. Whatever the source of the challenges, however, they are challenges, and will impact SMEs either way.

Starting with the more particular challenges, Brexit has until very recently been highest on the agenda. The UK's leaving of the European Union and the resultant customs and regulatory barriers that have since been erected is one of the defining economic changes of the era, and as such for many SMEs, it is a defining challenge. Almost 40% of SMEs in the UK claimed in one survey that they felt they would be worse off as a result of Brexit, with only around 10% predicting that the opposite would be true. Indeed, in the short few months since Brexit has begun in earnest, the consequences for certain industries – most notably the Scottish fishing industry – have been severe. The delays and confusion caused by new border checks and the inevitable bureaucracy that accompanies them has been terrible news for supply chains, and in particular for those products that are perishable.

The other main issue is a more widespread one, if hopefully now in its closing phase. That is of course the COVID pandemic, which has forced the closure of many SMEs during repeated lockdowns and considerably reduced foot traffic and income even when they are allowed to open. Given the nature of this, in many ways the difficulty is most concentrated on retail businesses, but the impact has been enormously broad across the economy. On this challenge, it remains to be seen the full extent of the difficulties that SMEs will face, whether there will be a strong economic rebound immediately following vaccination or whether customers will take a longer time to return to their pre-pandemic spending habits. That being said, however, reduced footfall is not a COVID-specific problem, but rather part of an ongoing trend in which SMEs with physical shop locations have been losing out at the expense of online businesses. The COVID pandemic, as mentioned, has certainly accelerated this, but it again remains to be seen whether or not changes in consumer habits will continue after the pandemic's end.

Related to this is one of the key more perennial financial challenges faced by SMEs. Technology, although a hugely important source of opportunity for SMEs, can in some cases also be a burden if they are not properly equipped. Surveys and studies of this suggest that one of the biggest worries SMEs have, and especially around technology, is the cost of introducing it. This is demonstrated, for example, by one study suggesting that over 40% SMEs believe a cashless society would be bad for their business. Ostensibly, there are many ways in which SMEs could considerably benefit from such a cashless society, but it is most likely their lack of infrastructure and preparation to handle such a society that intimidates them. This infrastructure can be costly, and as such presents a financial challenge.

A further relevant point is the changing nature of banking for small businesses in particular. Banking is crucial for SMEs, and having sufficient access to the funding and investment they can facilitate is hugely important. The challenge here is that banking is in many ways becoming harder for SMEs, with branch closures being increasingly common and online banking more mainstream. While in some ways this is easier, reports suggest that this also denies SMEs the more traditional relationships with staff at their local bank and some of the flexibility that often accompanies this. This challenge is especially egregious for those SMEs not quite large enough to have their own finance department, as the loss of friendly advice and expertise from a local bank branch is amplified.

Part of the knock-on effect of this is cashflow problems. As basic as it sounds, this is a very common problem that businesses face: more money going out than coming in. The consequences of this can be disastrous, including late payment of employees or other debts, or even inability to accept work, but it is something that 57% of UK small business owners report having faced. It is also important to note that one of the effects of cashflow problems, combined with access to finance issues in banking as mentioned above, is that the share of exports coming from SMEs in the UK has been declining notably in recent years. With these challenges, cashflow and exports, it is difficult to ascertain the precise nature of which industries or sectors are having the most severe issues with cashflow in the UK.

## 2.2 Security Challenges for SMEs

Although the nature of security has certainly changed in recent decades, there is no question that security itself is still an issue that SMEs face. Indeed, in some ways, the number of security issues that SMEs have to worry about has multiplied as the advent of the digital age opens new vulnerabilities in the everyday operations and transactions of business.

First among these is cybersecurity. Cybersecurity is a term that covers a very broad range of threats and issues, many of which are a danger to SMEs. Such a threat may take the form of a straightforward email scam, in which a business is coerced or deceived into making payments into a fraudster's account; or ransomware, a form of malware that steals data and extorts the business in question for money in order to get the data back or prevent it being published, where it is sensitive information. Whatever form these threats take, there is evidence to suggest that cybercrime of this nature is rising, and that it is more often targeted at larger businesses than smaller ones.

Furthermore, and on a related note, it is inevitably smaller businesses that are more likely to lack the resources, expertise, or awareness to properly protect themselves against these threats. The nature of such cyber threats is that someone who is unaware of or unfamiliar with them is considerably more likely to be vulnerable to them. Not to mention, as discussed in the previous section on finance, that businesses do not always have the capital to invest in more up-to-date and secure infrastructure.

Part of what makes businesses vulnerable in some of the ways described above is the nature of how data is managed and stored today. Whereas in years gone by, it might have been common for a physical file to be kept, or for perhaps a digital file on a single device, nowadays it is extremely common to have data stored or backed up on a digital cloud. There are various different applications and services that allow businesses to store data online, in a space that they can access from any device anywhere, making this both a convenient solution and a potential vulnerability. Especially given the ongoing pandemic, it is not inconceivable that an employee or SME owner might decide to use their data cloud storage to work more frequently from home or elsewhere rather than their office. The devices they use in those environments, however, might not necessarily be as secure as those in the office.

On a different note, but similarly affected by the COVID pandemic, is the security of payment. Although again technological advancements has made this in many ways more convenient and has dramatically expanded the potential for growth, it has also, as before, introduced vulnerabilities. The rise of digital payments rather than cash or cheque has been accelerated by lockdowns in the UK, which can more easily be exploited by those with malicious intent. Indeed, the impersonality of online payment was exploited to the tune of over £2 million last year.

### 3. Transnational Phase

#### 3.1 Best practices in application of blockchain technology in finances

Name of the company	Unilever
Website	Unilever.com
Sector	Consumer goods
Country	UK/Netherlands
Description of the issues that the company was facing before the application of blockchain technology (if applicable).	Difficulty in tracing and paying its producers. The nature of supply chains meant that intermediaries were necessary between the original producer of a product and Unilever at the other end of the supply chain. Given that the intermediary will often have to work with local financing rates, this can translate to lower wages for the producer.
Description of the blockchain strategies that the company adopted.	Unilever started using blockchain technology to record its supply chain details, meaning that they were able to more easily follow where produce was coming from, who was making it, and under what conditions. The more instantaneous nature of this process and the bringing of both ends of the supply chain closer together means much faster payment for the producer, the potential to save on transfer fees, and much greater transparency in the supply chain generally



### 3.2 Best practices in the application of blockchain technology in security

Name of the company	Xage
Website	Xage.com
Sector	Industry Internet of Things
Country	USA
Description of the company's challenges before the application of blockchain technology (if applicable).	The industrial internet of things (IIOT) is a key feature of the fourth industrial revolution, and could transform the way all sorts of industries operate. That being said, the fact that so much of this will operate digitally, with so many parts of the process connected online means many more points of vulnerability to cyber attacks.
Description of the blockchain strategies that the company adopted.	Xage produced a way of integrating the IIOT with blockchain, which provides a consensus-based verification system that prevents much of the potential damage that a cyber attack or other hacker might ordinarily inflict.

## References

- <https://www.telegraph.co.uk/business/challenges/sme-key-challenges-2019/>
- <https://www.business-live.co.uk/opinion-analysis/challenges-opportunities-facing-smes-19547782>
- <https://dataconomy.com/2020/02/here-are-the-biggest-challenges-smes-in-the-uk-are-facing/>
- <https://www.uktech.news/accountancy/smes-most-common-issue-is-cashflow-20190402>
- <https://www.gtreview.com/news/europe/uk-government-struggling-to-reverse-decline-in-sme-exports/>
- <https://informationsecuritybuzz.com/articles/6-security-challenges-facing-smes-heading-into-2021/>
- <https://www.bbc.co.uk/news/uk-england-52310804>
- <https://www.provenance.org/case-studies/unilever>



[https://techcrunch.com/2017/12/14/xage-emerges-from-stealth-with-a-blockchain-based-iot-security-solution/?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuY3Nvb25saW5lLnVnbS8&guce\\_referrer\\_sig=AQAAAAmJBLx4QIHT4Ha5858O2jMcdLdrPO7qFWfhZSZjJOOMM5Dm2LVAIHJ97o3wvaUcQIUegngROygtskrdHjmbq7zL3-7p36q6ET0sWdE1yerCf3R3Fb2bXx6QcwXuP7sKTH5kafkeya8gAsdfJgtxEzXZXXyNXuIEiraL2oi6Bt](https://techcrunch.com/2017/12/14/xage-emerges-from-stealth-with-a-blockchain-based-iot-security-solution/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuY3Nvb25saW5lLnVnbS8&guce_referrer_sig=AQAAAAmJBLx4QIHT4Ha5858O2jMcdLdrPO7qFWfhZSZjJOOMM5Dm2LVAIHJ97o3wvaUcQIUegngROygtskrdHjmbq7zL3-7p36q6ET0sWdE1yerCf3R3Fb2bXx6QcwXuP7sKTH5kafkeya8gAsdfJgtxEzXZXXyNXuIEiraL2oi6Bt)

## Resources

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/583788/EPRS\\_BRI\(2016\)583788\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/583788/EPRS_BRI(2016)583788_EN.pdf)

<https://ec.europa.eu/growth/access-to-finance/data-surveys/>

[https://ec.europa.eu/growth/access-to-finance\\_en](https://ec.europa.eu/growth/access-to-finance_en)

[https://ec.europa.eu/growth/access-to-finance/funding-policies/fintech\\_en](https://ec.europa.eu/growth/access-to-finance/funding-policies/fintech_en)

<https://www.enisa.europa.eu/news/enisa-news/european-smes-facing-increased-cyber-threats-in-a-changing-digital-landscape>

<https://www.enisa.europa.eu/publications/blockchain-security>

<https://www.enisa.europa.eu/publications/challenges-and-opportunities-for-eu-cybersecurity-start-ups>

<https://www.enisa.europa.eu/publications/privacy-and-security-in-personal-data-clouds>

<https://www.enisa.europa.eu/publications/challenges-of-security-certification-in-emerging-ict-environments>