

Blockathon 2018 Follow-Up Workshop Report

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1 Setting the Scene

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An introduction to the workshop was given as well as a reminder of the context of the event, namely EU Blockathon 2018, which was held in Brussels in June to highlight the need to collaborate further in tackling counterfeiting.

2 The Anti-Counterfeiting Challenge

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The challenges and objectives of Blockathon 2018 as regards the consumers, customs authorities and logistics operators' perspectives were revisited. Further cross-challenge objectives were also introduced.

Participants were invited to contribute their views on recent trends and the manner in which the anti-counterfeiting challenge is developing, which brought a number of matters to the table.

Customs representatives highlighted their concerns that offers for legal trade via, for example, Amazon, Alibaba and transportation companies, could be abused by people dealing with counterfeit goods along the supply chain. The challenge is to assist these platforms in their legitimate roles. Technology is seen as one of the critical tools necessary to address this.

The Commission's role in setting policies for cross-border controls and tariffs was also highlighted (by the Seal participants) noting, in particular, the current Brexit situation and the potential disruption to the flow of goods.

Finally, a means to incentivise operators to participate in the fight against counterfeiting was mentioned (by the Bird & Bird participants), particularly given the sensitive data issues that could arise. It was stated that the most effective means of encouraging their support would be to reassure them that data could only be accessed by parties with an absolute need for the information.

3 Achievements

The Blockathon 2018 winners gave presentations on the current status of their projects.

3.1 Cryptomice presentation

Speaker: Thomas Rossi

The project is based on a physical product being accompanied by a virtual one, or its 'virtual twin'. At each point along the chain, the receiving party only accepts the physical

product when it is correctly accompanied by its virtual twin. The incentive for it to work is feedback. A red flag is raised when a discrepancy in the chain is identified. Any further discrepancies along the chain raise more red flags, thereby highlighting that something is wrong and identifying the 'bad actors' in the chain.

Since Blockathon 2018, discussions have been held with a number of brands to explore the challenges and the costs. The main questions raised during these discussions were as follows.

- How do you make sure that the person who registers the virtual twin is the actual owner?
- Which goods, and what level of detail, are registered as a virtual twin?
- How is the data supporting the tracking of goods physically distributed?

The overall distribution of the data appeared most pressing to the brands as opposed to the mechanism for identifying fake goods. Systems and data lakes supporting track and trace data and capabilities already exist. With investments already made, it makes sense to complement these systems rather than re-engineer them. Blockchain is considered a good candidate for this purpose given its immutable character and distribution/integration qualities.

Next steps include creating a systems, applications and products (SAP) plugin to support registration and integration with the virtual twin.

Questions and Answers

- Q.** How does the red flag system work, and can everybody on the chain see it?
- A.** When something unusual is identified in the virtual world, everybody in the chain up to this point is marked with a red flag. When repeat offenders act, they are crossed by another red line each time. This can be used as a key performance indicator (KPI), to help customs decide which cargoes to inspect and logistics operators decide what actions to take to protect their shipments and reputations. For example, certain logistics companies may be marked with a number of red lines, which would incentivise them to take action to avoid such occurrences in the future.
- Q.** Has a scenario with multiple blockchains ever been considered?
- A.** Yes, interoperability across blockchains is being considered.

3.2 ScanTrust presentation

Speaker: Peter Kostur

ScanTrust emphasised the importance of robust authentication at the point of receipt by the consumer, rather than tracking throughout the cycle. Their system produces a secure digital identity, a quick response (QR) code on a tamper proof label, which is placed on the product and ensures authenticity for the consumer. The consumer can carry out a scan

verification to track data via an online portal or an authentication scan to check the security and safety of the product purchased. This authentication is currently motivated by the brand owners. By providing digital information of the product or by sharing its tracking data, for example, the provenance and sustainability of the products can be proven.

ScanTrust runs the GoodChain project, which incentivises consumer product authentication by distributing tokens that award projects selected by the brand owners (humanitarian, environmental, etc.) for every scanned product. The GoodChain project won the Consumers and Customs Awards at Blockathon 2018 — since then ScanTrust has launched the GoodChain Foundation, which has already started several live projects in a form of proof of concept (PoC), but also in live production. The GoodChain blockchain not only enables immutable storage of product and tracking data, but also aims to create a transparent circular economy around the interactions with the products. Supply chain actors will be motivated to scan the product, but most importantly, the final user is incentivised to perform the validation/authentication of the digitalised product — not only to reach the product data, but also to contribute to the defined social cause.

The GoodChain Foundation brings together four main actors:

1. brand owners
2. consumers
3. social causes (humanitarian, environmental)
4. solution providers/supply chain actors.

The GoodChain Foundation is a global non-profit entity, open to other solution providers, brands, social causes, NGOs, etc. Integrating other solutions from Blockathon 2018 is being explored further.

Questions and Answers

- Q.** Is there a risk that consumer collaboration in the delivery of blockchain is made at the expense of privacy? Could this lead to the physical tracking of people?
- A.** The General Data Protection Regulation (GDPR) has been considered. No consumer data will be held. Authentication is made solely on the product identifier and no consumer data is tracked.
- Q.** Shouldn't there be a focus on the requirements and challenges of customs if the consumer is to be assisted?
- A.** This was acknowledged and continues to be explored.

3.3 Seal presentation

Speakers: Bart and Joris Verschoor

The Seal authentication chip (Near Field Communication — NFC) provides a secure link between the physical object and its digital representation. A mobile application platform has

been developed including an open application programming interface (API) allowing brand owners to add product information. The chip can be embedded into products by brand owners to avoid it being copied.

Questions and Answers

- Q.** The cases where people buy counterfeit items knowingly and willingly are not addressed. How does this solution help provide law enforcement and customs with the tools that they need?
- A.** Seal is actively considering how to share relevant details with customs authorities.

3.4 Amaris&unchain.io (Pirate Busters) presentation

Speaker: Jelle Van der Ploeg

Supporting customs is the main focus of the Pirate Busters project, which aims to identify trusted parties and authentic goods in the supply chain allowing faster processing of their products and freeing up time and resources to focus on IP infringement. An incentivised and anonymised whistle-blower system is included to improve detection rates further.

The system will integrate existing infrastructure and blockchains with existing investments. A permission ledger will be used to make sure data isn't shared horizontally. Amaris&unchain's technology has already been successfully applied to integrate and secure medicine supply chains in Africa.

A framework proposal named Trust Track was presented: it aims to bring together technological, organisational and governance features to provide a framework for cooperation between all relevant parties and allow policy and solutions to be developed cooperatively.

Questions and Answers

- Q.** What do you hope to establish over the next 5 years?
- A.** To build on the Trust Track framework and get players to interact, refine the framework and implement solutions.
- Q.** What particular difficulties has Amaris&unchain experienced regarding the delivery of their projects?
- A.** The African supply chain project found the maturity of the technology, with its limited infrastructure accessibility, a big challenge.

4 Change Happening Now

4.1 European Commission presentation

The Commission's interest in the field of blockchain as well as its current initiatives was presented. In particular, the work of the EU Blockchain Observatory was explained.

The EU Blockchain Observatory and Forum (<https://www.euBlockchainforum.eu/>) serves as a hub of expertise to share and disseminate blockchain knowledge and support initiatives in parallel. A map of blockchain initiatives is being drawn up and the audience was invited to add their own initiatives.

The Commission wishes to continue to engage industry in blockchain-related matters and a conference in November is planned. Use case methodology suitable for blockchain implementation with EU cross-border and policy needs and characteristics was requested.

Questions and Answers

- Q.** Is there a plan to invite the winning Blockathon 2018 teams to the November conference?
- A.** The agenda is still being finalised so it remains a possibility.
- Q.** Would supply chain traceability and anti-counterfeiting be interesting for the purpose of a use case definition, within the remit of the EU Blockchain Observatory?
- A.** Yes, such a use case would be interesting given its cross-border nature and relevance to the objectives of the EU Blockchain Observatory.

4.2 DHL presentation

Speaker: Geoffrey Belboom via ViCo

DHL presented the features of a pilot project (still under construction), which applies blockchain technology to secure the supply chain in e-commerce. Other benefits sought include the handling of duty charges through smart contracts. The solution envisages future integration with e-commerce platforms and mobile applications through an application programming interface.

Questions and Answers

- Q.** What kind of ledger is used for the PoC?
- A.** A permissioned ledger based on Hyperledger Fabric.

- Q.** From your experience so far, what benefits are anticipated by applying a blockchain, rather than a database, solution?
- A.** The features of blockchain, such as immutability and integration capabilities, are expected to achieve more trust, security and flexibility in order to support a range of interesting use cases. For example, to relieve the procedural burden and costs that arise from the obligation to support the audits that are requested regularly by the authorities.
- Q.** Will the solution help to track a suspicious product?
- A.** By improving how authentic products are identified and tracked through the supply chain, enforcement resources are freed up to focus on untracked and suspicious goods.

4.3 EUIPO presentation

The Anti-Counterfeiting Intelligence pilot was presented. It demonstrated how big data, associated with customs authorities' detentions and Applications for Action (AFAs), can be used to highlight trends and inform brand owners of the effectiveness of AFAs so that future applications can be targeted successfully.

The potential for enhancing the information shown was highlighted, using further data captured throughout the supply chain.

Questions and Answers

- Q.** What additional data has been considered in order to expand the pilot further?
- A.** The EUIPO has been talking to the European Anti-Fraud Office (OLAF) to integrate data associated with the movement of containers.
- Q.** Who would the data be visible to?
- A.** Strict controls are applied so that commercial data is not shared unless an organisation has the rights to do so.

4.4 Further highlighted initiatives

Speaker: Dennis Kosse — Unisys

Blockchain is all about security; in this context, Unisys is securing objects (including its authenticity) in a supply chain.

As regards blockchain activities — 2017 was the year of exploration, 2018 the year of the PoC and 2019 the year of pilot schemes and implementations.

Important success factors for blockchain implementations are:

- Internet of Things (IoT) use, as more (automatic) data is available to use;
- advanced analytics: not looking back but using info to create more info, and machine learning to predict and alert forward with the adaptive behaviour of counterfeiters;
- security: access to blockchain and data authorisation is key;
- flexibility: technology is changing fast, so make it flexible enough to be able to choose the necessary components;
- integration: with back end systems, but also with other possible blockchains, as currently there are many different solutions.

5 Dynamic Workshop ‘Prioritise the Objectives’

The teams were split into groups to collaboratively define the objectives with the highest value in the fight against counterfeiting, taking into account the perspectives of customs authorities, logistics operators, consumers and cross-challenge objectives.

Each team started with a focus on one perspective before moving on to other perspectives to review and comment. Each of the objectives was then voted on to reach a consensus on priority.

The top five objectives are listed below, for each perspective and ordered according to their priority alongside the main highlights from the discussions held as presented by the facilitators.

Customs authorities

Top 5 Objectives

1. Data sharing between customs authorities, rights holders and logistics operators (16)¹
2. Fast tracked clearance of authentic goods through customs (11)
3. Counterfeit activity successfully targeted (10)
4. Effective risk assessment tools (7)
5. Trusted systems and data to speed up the verification of shipments (4)

Highlights

The possibility to fast track some shipments and develop a tool to help detect counterfeiting better. A tool to make use of data from seizures at customs, highlighting infringing parties.

Logistics operators

Top 5 Objectives

1. Authenticity of goods, so there is no chance of handling fake goods (20)
2. Increase efficiency, speed (9)
3. Maintain trusted reputation amongst rights holders and consumers (8)
4. Standards (4)
5. Data sharing as early as possible, before departure (3)

Highlights

The authenticity of goods. Data sharing is also key, as well as maintaining trust, while increasing efficiency and speed. Interesting discussions were held on who and what is defined as a logistics operator and how it could be more inclusive (for example, include warehouses).

Consumers

¹ Number of votes received.

Top 5 Objectives

1. Guaranteed authenticity of the goods purchased (19)
2. Safety, security (awareness), privacy (15)
3. Self-service validation of authenticity via trusted applications (7)
4. Easy, simple, only use (4)
5. Compensation (warranty, proof) (4)

Highlights

To identify an authentic product. Safety and security. Self-service validation; whatever is developed should be easy to use. Incentivise the use of verification and reporting applications to the consumer by offering compensation when something goes wrong.

Cross-challenge

Top 5 Objectives

1. Interoperability/integration capacity/scalability (18)
2. Data protection for consumers and privileged commercial information (10)
3. Reliability of data (7)
4. Unique identifier standard/standardisation (7)
5. Users incentivised to increase the ecosystem (6)

Highlights

Interoperability and the ability to integrate different systems into a bigger system.

Securing data permissions for consumers and rights holders.

6 Dynamic Workshop ‘Enabling the Change’

The teams were once again split into groups to focus on each challenge perspective. Each group discussed the current situation and the future actions that will be necessary to enable the achievement of the prioritised objectives, taking the people and organisations who should be involved into account.

As in the earlier workshop, each team started by focusing on one perspective before moving on to each of the others to provide feedback and planned actions.

Based on the work of the teams and the feedback received, the Challenge Champion gave a presentation of the workshop results.

Below are the summaries of each presentation. This includes the enabling actions and parties involved.

6.1 Customs authorities presentation

Enabling actions	People and organisations
<ul style="list-style-type: none"> • Decide upon infrastructure (interoperability) • Data sharing: identifying key data • Digitalisation of documents (all docs) • Standardisation of messages 	<ul style="list-style-type: none"> • EU Commission • EU Enforcement Agencies • EUIPO/EDB, rights holders • Intermediaries and logistics

The main challenge is to have the necessary tools to intercept irregularities and identify risky consignments. Data sharing between customs authorities, other enforcement authorities, national offices, brand owners and other parties in the supply chain is key. More timely information is also needed to support risk management information.

For this, an infrastructure needs to be defined and built that offers interoperability; making the same information available to everyone. The Commission should have a role in this in order to motivate private sector involvement.

As regards data sharing, the definition of key data, from a risk management point of view, needs to be identified. Concrete, specific information is needed, such as adversary operator names (those who have already infringed). Data must be integrated from different sources such as the EUIPO, rights holders and intermediaries. The digitisation of documents, standardisation of messages and a more global approach to infrastructure design is necessary.

Questions and Answers

- Q.** With so many entities involved on a day-to-day basis, already with a degree of success, what would be the starting point for next steps?
- A.** Efficient data sharing through a blockchain-based solution could make risk profiling more efficient and effective.

6.2 Logistics operators presentation

Enabling actions	People and organisations
<ul style="list-style-type: none"> • Share more detailed data with others, e.g. customs (discount on handling costs if info provided/data protection solution?) • Tools for data sharing • Incentives for data sharing (legislative initiatives) • Customers of logistics operators demand it • Support research and development on blockchain • Standards • Digitalisation • Get logistics operators to feel 'owners' of the issue • Financing 	<ul style="list-style-type: none"> • Logistics operators (ICS insufficient) and all companies using logistics • Cooperation IT provider companies, logistics operators, customs • EU Commission (push by rights holders, others) • Rights holders, consumer associations • Rights holders, public authorities • Standard organisations, industry, etc. (EU, global)

Previous experiences of the challenges of getting different parties involved in working together for the good of all were shared. Persistence is needed to reach a common understanding, to reach consensus and convince parties to collaborate.

Logistics operators are rewarded for moving products from A to B regardless of their authenticity. Consumers are increasingly interested in knowing more about their products, their CO2 footprint and their authenticity. This must somehow be reflected in the incentives for logistics operators to ensure that they play their role in combating counterfeiting. A cultural change is needed and potential changes in regulation.

Questions and Answers

- Q.** What could be a first step?
- A.** Looking into regulation options and being able to track where goods come from more accurately.
- Q.** Why don't logistics operators collaborate more with customs?
- A.** Logistics is mostly focused on the challenges of moving more and more goods. Hence, the abovementioned incentives for cooperation need to be explored.
- Q.** If an impact on revenue or increased costs is the reason influencing logistics operators support for anti-counterfeiting, then could insurance options offer a solution?
- A.** This could be a very good and creative solution that is worth exploring.

6.3 Consumers presentation

Enabling actions	People and organisations
<ul style="list-style-type: none"> • Education and awareness • Tailor response to type of good (pharmaceutical v luxury) • Interoperability/compatibility of unit serialised methods • Involve and incentivise intermediaries • Clarity for consumers • Bridging the gap between consumers and brands • Persistence of reviews 	<ul style="list-style-type: none"> • Governments • Brands • Intermediaries • Consumers

The consumer wants assurances regarding the authenticity of the goods, to know that they are safe. Solutions already exist today, such as serialisation, a unique code on every single unit that goes through the supply chain. The consumer needs the ability to read these codes, regardless of the serialisation method used, to check authenticity.

A debate was held by the teams on whether there should be a single serialisation standard. It was also debated whether such a standard should be mandated and whether blockchain would be necessary in this process. To date it is done without blockchain. No consensus was reached.

Further discussions involved the necessity to have a detailed ledger available to anyone and everyone at all times, as well as the need to involve intermediaries and consumers with incentives provided to encourage their involvement. Currently, data on consumer-based validation isn't very promising. A 20 % participation rate is considered realistic with efforts to increase this considered somewhat futile.

Relying on consumers to validate authenticity and report infringements will not solve the problem of counterfeits. A solution needs to be found that achieves a higher rate of participation. Elements such as education and awareness, including the ‘piracy is a crime’ campaign run by the film industry, are good examples of such investments. Brands should also be encouraged to speak to their consumers publically about issues relating to counterfeiting.

Questions and Answers

- Q.** Regarding the participation level of consumers in the fight against counterfeiting, previous experience has shown that even quite low numbers (a quarter in the experience of Intel) has been enough to stop the counterfeiting problem further up the chain. Do you have any further thoughts on this?
- A.** Regardless of the numbers that participate, the intermediary should be in a position to assure the consumer of the authenticity of the goods purchased. Experience shows that often the intermediaries’ reputation is at stake, ahead of the brand owner and logistics operator. Consumer trust is very hard to earn and very easy to lose, so intermediaries’ motivation to tackle counterfeiting is high.
- Q** Why are logistics operators seemingly less motivated to take a position against counterfeiters than intermediaries?
- A.** The logistics operator doesn’t necessarily have a relationship with the consumer. The relationship with the consumer, in most cases, is with the intermediary in terms of third-party sales, and the reputation at risk is theirs, not that of the logistics company.

6.4 Cross-challenge presentation

Enabling actions	People and organisations
<ul style="list-style-type: none"> • Define standards (open standards) • Ensure interoperability • Agnostic technology • Alignment of the current silo standards • Incentivise (educate) consumers changing the culture by means of gamification, consumer participation, etc • Global 	<ul style="list-style-type: none"> • Open-source community • Business alliances • Standard organisations • Observatory • The public sector shouldn’t take the lead in setting the standard

Open standards need to be defined to facilitate interoperability, while supporting and balancing different perspectives and needs. Blockchain technology offers opportunities to change the framework for cooperation with less bureaucracy and centralisation. The public sector has a role in endorsing standards and promoting collaboration.

Consumers’ participation in combating counterfeiting requires a cultural change and incentives.

Questions and Answers

- Q.** If a new economic agent is introduced with money running through a new blockchain-based system, then shouldn't the government have a seat at the table?
- A.** Government should be involved, but they should not run it as there is a risk the community wouldn't follow.

7 Closing Remarks

EUIPO

There is a need to join the dots between initiatives to give visibility to what is being worked on among the various actors and to take advantage of these synergies. The EUIPO can play a role in maintaining the anti-counterfeiting 'community' that came together for Blockathon 2018 and the workshop and find a way to facilitate connections between all parties involved.

The anti-counterfeiting use case arising from Blockathon 2018, which aims for interoperability and proof of authenticity, is a candidate for submission to the EU Blockchain Observatory.

Incentives to support anti-counterfeiting remains a challenge with the different motivations and interests of logistical operators, intermediaries, brand holders and other parties impacting on the degree of support and willingness to engage. Communication, regulation and education are important elements of any framework for cooperation.

Regarding standards, industry should take a lead in their development, while legislators, authorities and government should play a role to ensure they meet the public's needs while balancing the rights and interests of key parties.

The workshop has reinforced the benefits of a global interoperability standard on blockchain technology whereby parties can easily scan and retrieve all the required information to prove authenticity and to improve the effectiveness of cross-border controls. Such a standard requires an analysis of the key dataset to be shared and an appropriate and secure architecture to support connection to legacy systems.

The level at which such a standard should apply needs to be considered, to assure the amount of data shared is manageable and meaningful. For example, individual and low-value items (pens, small items of food, etc.) would perhaps be too low-level, while ship consignments would be too high. To begin with, a focus on materials with high safety requirements may bring the best return on investment.

The unique and accurate identification of goods is an important element for proving authenticity. Identification methods such as serialisation should continue to be examined and developed to ensure that they meet requirements and can be used by all the interested parties along the supply chain.

The attendance and enthusiasm of participants at the workshop is evidence that the demand for continued collaboration exists. Looking ahead, the EUIPO will seek to encourage greater participation from rights holders.

