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# Digital Revolution and Illegal Trade: is Europe on the leading edge?

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The European Union, the leading trade force in the world, is facing a constant rise in product smuggling and counterfeiting. The rise of illicit trade sets a triple challenge: a health challenge, with the dangers caused by counterfeit products; a security challenge, with illegal trade contributing to the funding of crime and terrorism; and a financial challenge with the loss of tax revenue. The fight to counter illicit trade demands a series of political measures. It also required a technological response, with the introduction of innovative, modern product traceability and authentication systems that can secure supply chains.

By imposing or encouraging the introduction of consumer product tracking systems, the European Union can both lead the way in the fight to counter illicit trade, increase its States' tax revenues, protect the health of its citizens, foster the emergence of a new, innovative industrial sector and become the pioneer of new world standards.

This opportunity corresponds perfectly with the digital technology innovation and development goals set by the European Commission.

In his inaugural speech on July 14th, 2014 Jean-Claude Juncker set amongst ten other priorities that of digital development for his European College. In his opinion and also that of two Commissioners responsible for the sector (Andrus Ansip and Gunther Oettinger), the strategy for digital development is based on three pillars, the second of which "the drafting of rules that are in line with technological development" and the third "making the most of the opportunities offered by the digital sector" They believe that common, interoperable standards are, amongst others, the prerequisites for the completion of a truly digital single market.

The aim of this paper is to assess how digital technologies might lead to a more effective way of fighting the scourge of counterfeiting and smuggling, helping public authorities to achieve greater control over sensitive markets, notably in the crucial area of sanitary requirements.

## THE CONTINUOUS RISE OF ILLICIT TRADE

According to an OECD report[1], in 2013 counterfeiting represented 461 billion \$ in the world, i.e. 2.5% of international trade, against 250 billion \$ in 2007, representing an almost twofold rise in six years. As far as the European Union is concerned, counterfeiting represented 116 billion \$, i.e. 5% of its imports. This is just a share of illicit trade, since in addition to counterfeit products we also have to add smuggled goods to this, i.e. the sale of non-counterfeit products outside of the legal supply chain. This affects a great number of sectors: luxury products, textiles, sports goods, medicines, tobacco.

The increase in illicit trade sets society a three-fold challenge.

- It is a health challenge of which the counterfeiting of medicines is the most shocking example. In certain regions of Africa, Asia and Latin America, more than 30% of the medicines on sale are counterfeit as per the World Health Organization. According to the WHO, counterfeit medicines are said to be responsible yearly for several hundred thousands of deaths. The WHO responded in 2006 with the launch of the International Medical Products Anti-counterfeiting Taskforce (IMPACT). It has undertaken several wide ranging studies that illustrate the increase in false or counterfeit medical product trafficking. It stepped up its initiatives without managing to achieve any real

1. Trade in Counterfeit and Pirated Goods, OECD-EUIPO, Paris 2016

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international convention to oblige States to act. Although the regulation of the distribution of medicines has protected European States for a long time, the development of online sales has led to a rise in the sale of counterfeit medicines.

- It is also a security challenge. According to the UN's Committee for the prevention of crime and criminal justice, counterfeiting is now the second source of criminal revenue in the world. Many investigations have shown the vital role played by the sale of counterfeit goods in the financing of most terrorist organisations[2]. The size of revenues gained from the sale of counterfeit cigarettes by Al Qaeda in Islamic Maghreb earned its leader, Mokhtar Belmokhtar, the moniker of the Marlboro Emir. The rise in illicit trade as a source of funding of criminal and terrorist organisations can be explained in part by the low legal liability faced by counterfeiters, and also by the ease with which they have bypassed traditional product anti-counterfeit methods.

- Finally there are the financial stakes for both the States and businesses. According to the Sun 2015 report by KPMG[3], the 28 Members of the European Union would have earned 11.3 billion € more in tax revenues if counterfeit or contraband cigarettes, which represent 10% of the cigarettes consumed in Europe, had been purchased legally. The stakes are also high for businesses, notably in severely affected sectors such as the luxury, toys, automotive spare-parts and aeronautics industries. Illicit trade deprives businesses of revenues, affects the credibility of their brands, impoverishes national know-how and deceives the consumer.

### THE MEANS TO COUNTER ILLEGAL TRADE

The fight to counter illegal trade requires:

- The strengthening and harmonizing of criminal penalties against smugglers and

counterfeiters. Counterfeiting and contraband might therefore be included on the list of criminal offences covered by article 83 of the Treaty on the Functioning of the European Union[4] which would allow the EU to adopt directives establishing minimal rules regarding the definition and sanction of offences. Criminal penalties should be significantly toughened, notably regarding organized counterfeiting.

- Strengthening the means allocated to the fight to counter illicit trade and cooperation between States and with the most sensitive regions like China and Eastern Europe which are at the origin of most counterfeit products flows.

- Increasing vigilance regarding e-trade. Those active in e-trade should be required to check or be vigilant about the products being marketed on their sites. Anonymous vendors should be banned. The sites found guilty of counterfeiting should be forced to communicate this information to their clients and visitors.

- Harmonizing taxation. The rise in contraband undeniably finds its source in the heterogeneous nature of the tax policies implemented between Member States and therefore this affects sales prices. Their harmonisation would have a significant effect.

- Raising consumer awareness and "including" them in the fight. Awareness of the damaging effects of illicit trade is vital. Widespread action is necessary across the EU to raise awareness and to mobilise citizens. Moreover the use of new technologies would help literally to engage consumers, who would be able, via their smartphone or their computer, to download certified information about the origin and distribution chains followed by a product.

Indeed technological innovation enables the provision of innovative product traceability and authentication systems.

2. [http://www.unifab.com/wp-content/uploads/2016/06/Rapport-A-Terrorisme-2015\\_FR\\_42.pdf](http://www.unifab.com/wp-content/uploads/2016/06/Rapport-A-Terrorisme-2015_FR_42.pdf)

3. <https://home.kpmg.com/uk/en/home/insights/2016/05/project-sun.html>

4. "The European Parliament and the Council may, by means of directives adopted in accordance with the ordinary legislative procedure, establish minimum rules concerning the definition of criminal offences and sanctions in the areas of particularly serious crime with a cross-border dimension resulting from the nature or impact of such offences or from a special need to combat them on a common basis. These areas of crime are the following: terrorism, trafficking in human beings and sexual exploitation of women and children, illicit drug trafficking, illicit arms trafficking, money laundering, corruption, counterfeiting of means of payment, computer crime and organised crime. On the basis of developments in crime, the Council may adopt a decision identifying other areas of crime that meet the criteria specified in this paragraph. It shall act unanimously after obtaining the consent of the European Parliament.

## NEW TECHNOLOGIES TO COUNTER ILLEGAL TRADE

There are technologies available to States, businesses and citizens to fight more effectively against illicit trade.

This involves tracking and tracing technologies which enable to mark a unique code on each product, and to follow it through the supply chain as the code is scanned in each warehouse or point of distribution. Information can be attached to this code regarding the product's origin and the destination market. By checking this code, the customs authorities, businesses and consumers would be able to see the logistics journey taken by the product and check that it reaches its destination market, thereby enabling the identification of counterfeit or smuggled products. Since checking the origin and destination of products via the simple reading of the code would be possible with a smartphone, the work of the police and customs authorities would be speeded up considerably.

This also implies forgery-proof authentication technologies so that the authenticity of a product can be proven with certainty. Traditional technologies such as holograms and optically variable inks, applied to paper stamps, can now mostly be replicated. There are new technologies. These include security markers, based on combinations of rare earths or nanoparticles which issue a specific optical or electronic signature that can be validated by a dedicated scanner or material biometry, which like a human finger print or iris recognition, enables the generation of a unique signature, specific to each unit product, based on the structural vicissitudes in the material itself. This technology is already available and will certainly be developed further.

## EUROPE-WIDE RELIABLE TRACKING AND TRACING

The European Union could define open standards to guarantee the interoperability of tracking and

tracing schemes. It has a major role to play in the introduction of tracking and tracing systems for consumer products, notably for medicines, foodstuffs, luxury products, tobacco, alcohol. It has already taken some major steps. The 2011/62/UE directive[5] made the serialisation of medicines obligatory with a code printed on each product.

The next step will be the introduction of a tracking and tracing system on tobacco products provided for in the European directive 2014/40/UE[6]. This project goes beyond the goal of the directive on medicines, since it involves the guarantee of tobacco product traceability, from the factories in which they are manufactured to the last distribution point before the first retail outlet. The directive also includes the introduction of an anti-counterfeit measure on each tobacco product.

These two directives are major steps forward in the fight to counter illegal trade across the European Union. They are a step towards a comprehensive tracking and tracing system, first for the most sensitive products, but possibly also for other consumer products. We can rely on the Commission and the Parliament to introduce regulations that are open to innovation, that are interoperable between Member States and which involve the industries in question. This is now vital.

Indeed to be able to function across Europe systems must be interoperable between the different Member States, which will still have control over their development and implementation, according to the principle of subsidiarity. The deployment of the electronic tachograph, enabling the control of HGVs (working time and the condition of vehicles) was developed according to this plan, with a common interface between the States (the Joint Research Centre[7]), the exercise of their regulatory powers and the involvement of industrial partners.

The introduction of tracking and tracing schemes Europe-wide for consumer products is necessary.

5. [https://ec.europa.eu/health/files/eudralex/vol-1/dir\\_2011\\_62/dir\\_2011\\_62\\_fr.pdf](https://ec.europa.eu/health/files/eudralex/vol-1/dir_2011_62/dir_2011_62_fr.pdf)

6. <http://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=CELEX:32014L0040&from=FR>

7. <https://ec.europa.eu/jrc/en/about/jrc-in-brief>

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To guarantee its interoperability and its functioning, a tracking and tracing system must be based on a series of common standards and specifications shared by all of the Member States and the players involved. This approach is all the more vital since various industrial production lines supply many countries, which imposes the introduction of compatible systems between the various States. It also enables the guarantee of interoperable measures between the various industrial sectors, notably so that the customs authorities can check different types of products with identical tools.

To do this traceability measures must be based on acknowledged industrial standards, such as GSI EPCI and ISO 19987. The adoption of these standards is vital in the effective implementation of tracking and tracing that provides a common base recognised by all of those involved: industry players, suppliers of solutions and equipment and enforcement authorities. The implementation of the serialisation of medicines was achieved using these standards.

### **SECURE MANAGEMENT OF DATA PROVIDED TO PLAYERS VIA CENTRALIZED DATABASES**

The authorities (customs, police), as well as the economic operators involved should be able to access product tracking and tracing data easily so that they can identify any product and analyse the flows. Access to data must be granted to the public authorities as part of their enforcement work and also to the economic operators involved so that they can provide necessary support to the enforcement authorities. To do this the best approach would be to have centralised Europe-wide data bases that consolidate all of the available data. There should also be a strong guarantee of data protection and confidentiality.

Code generation systems would have to be made secure and be perfectly adapted to various

industrial environments so that they could be completely independent of the industrialists' IT systems and be protected from all types of hacking.

Databases containing all tracking and tracing information would also have to be highly secure to prevent any hacking and to guarantee the total integrity of the data recorded, which, in order to achieve a maximum level of security, would have to be transferred to central databases in real time.

A secure system like this, guaranteeing the single tagging of all products and high data integrity would ensure that no player, either legitimate or illegitimate, could circumvent the system.

Moreover strict data access rules would be necessary to guarantee confidentiality.

The most effective and the safest approach would be to introduce centralised but separate databases per producer, with a common interface that would allow the enforcement authorities to undertake all types of queries in the database. Technology is now available that also allows the consumer to check the authenticity of a product he has purchased himself.

### **DATA ACCESSIBLE BY END CONSUMERS**

Tracking and tracing systems would make it easy for end consumers to check their product using a single code via their smartphone or an internet site. The provision to the public of product traceability data would be a formidable way of increasing the number of checks and of involving end consumers in the fight to counter illegal trade. This approach could be revolutionary. Someone who buys and scans the product using his smartphone, would immediately know where it came from, by whom it was manufactured and distributed and also whether it is on its destination market.

### **COMBINING ACTIVE ENFORCEMENT BY THE STATES AND THE INVOLVEMENT OF ECONOMIC OPERATORS IN OPERATIONAL IMPLEMENTATION**

The implementation of tracking and tracing systems must combine high enforcement levels by the public authorities, when sanitary and tax stakes justify it, with the economic operators involved in the operational implementation.

The role of enforcement played by the public authorities, as advocated by the WHO's framework anti-tobacco convention, is indeed made vital by the fiscal and sanitary stakes implied in the control of product flows.

Both the States and the European Commission will have to supervise the implementation conditions of the tracking and tracing systems and notably the most sensitive issues, such as code management and data storage. To do this it will be vital to use advanced rather than old technologies, which are now systematically circumvented by the fraudsters. A major stake will therefore be to persuade the Member States to make ambitious and even courageous choices in support of technologies, whilst some of them are still using old techniques (tax stamps for example).

Vital dialogue between the players and the approach adopted by the Commission with its open investigations and its consultation with the stakeholders is of total interest in this sense since it can be placed out of reach of lobbies and misconception. The worst thing that could happen would indeed that technologically outmoded or obsolete procedures would be selected including by the States on the basis of intellectual facility or due to pressure.

### **INDUSTRIAL AND TECHNOLOGICAL STAKES FOR THE EUROPEAN UNION**

The implementation of tracking and tracing requirements on sensitive consumer products is

a great opportunity for the EU and its Member States to counter illicit trade; it also provides an opportunity to develop the "digital agenda". EU value added, although quite often brought into question right now, can be demonstrated on this occasion.

Indeed, by becoming the spearhead in the fight to counter illegal trade, the EU also has an opportunity to foster the emergence of an innovative industrial sector and of new champions of new technologies.

The implementation of product traceability and authentication solutions mobilises players in different specialties: tracking and tracing systems, data storage, chemical, optical or digital authentication, printing and industrial vision equipment, as well as the integration of systems on industrial production lines.

The requirement for serialisation introduced by the directive on falsified medicines has led to the rise of a dynamic sector with the emergence of new players and start-ups promoting their solutions amongst pharmaceutical laboratories.

The introduction of tracking and tracing requirements in new sectors will help give these businesses a strong domestic market that will open up opportunities for them to grow in other parts of the world. With advanced technologies, Europe can become a world leader and, given the size of its market, a pioneer elsewhere in the world.

The choices made by legislators and the Commission regarding the means to implement traceability will be of crucial importance in the EU's ability to bring forward new champions.

More importantly, we can count on the European Union, given its demanding competition policy, to foster open, fair competition between the suppliers of solutions and equipment, which is resolutely supportive of innovation. In terms of the delegated acts that will largely be defined by the European Commission under the supervision

of the European Parliament, we might therefore hope for the draft of specifications that will lead to competition between the different and most innovative solutions, in line with its digital agenda.

Jean-Claude Juncker believes that a connected digital single market could lead to 250 billion € of growth in five years for the European Union. The Commission's departments have estimated the savings achieved by the implementation of standards and real interoperability in the sector (Once only) at 5 billion € in 2017. It is therefore

up to the institutions to continue along the path towards the more systematic use of the most advanced digital technologies. It is up to them to do this in line with their management practices, i.e. by setting strict competition rules that are open to all competitors and all technologies.

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