



PERMANENT
TECHNICAL COMMITTEE

PC0483E1a

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217th/218th Sessions

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17 – 20 October 2017

Brussels, 11 September 2017.

FUTURE OF CUSTOMS

- Disruptive technologies -

(Item IX. (a) and (b) on the Agenda)

Background

1. At its 215th/216th Sessions in March 2017, the Permanent Technical Committee (PTC) discussed the way forward for the Virtual Working on the Future of Customs (VWG FC), two years after its establishment under the PTC.
2. The PTC took note of the good work and outcomes reached under the VWG FC and the PTC's Future of Customs agenda. More importantly, the PTC agreed on the way forward for the VWG FC to focus mainly on two different areas:
 - i. i. exploring disruptive technologies while focusing on their benefits risks and role in the supply chain, as well as taking into consideration the interlinkages between them; and
 - ii. ii. exploring strategic foresight as a means of better addressing the Future of Customs agenda.
3. During the inter-session, the members of the VWG FC focused their work on disruptive technologies (i), which will be discussed in detail under item IX. of this Meeting.

Disruptive technologies – what are we talking about?

4. A disruptive technology is one that displaces an established technology and shakes up the industry or a ground-breaking product that transforms life, business and the global economy. Harvard Business School professor Clayton M. Christensen coined the term disruptive technology. Disruptive technology often has performance problems because it is new, appeals to a limited audience and may not yet have a proven practical application. Historical examples of disruptive technologies include PCs, Windows operating system, emails, smartphones, cloud computing, social networking and others.
5. Here are a few examples of disruptive technologies and how they are being used, as well as how they could potentially be used by Customs and other border agencies:
6. **Artificial Intelligence (AI)** and machine learning: Facebook CEO Mark Zuckerberg has already shown what is possible with artificial intelligence, by building Jarvis, a virtual assistant for his home in San Francisco last year. Language processing, speech recognition and face recognition are the key AI systems used for Jarvis. Potential benefits of AI and machine learning for controlling the movement of passengers across borders are maybe the most obvious. However, there are many more, including high advancement of risk management capabilities in cross-border movement of goods.
7. **Internet of Things (IoT)**: IoT is the internetworking of physical devices, vehicles (also referred to as “connected devices” and “smart devices”), buildings and other items embedded with electronics, software, sensors and network connectivity that enable these objects to collect and exchange data. Some predict that the 2017 will be the year of the “Internet of Everything”, where a huge step will be made in terms of connecting all possible devices. One of the main challenges in the IoT remains security of information, which is more frequently being addressed especially by producers of IoT devices. In the WCO context, the potentials of IoT can also be considered, for instance, in implementing Integrated Supply Chain Management (ISCM) and/or the Unique Consignment Reference (UCR) concepts.
8. **Biometrics**: Using a thumbprint to unlock a mobile phone has become an everyday thing for most people today. We are moving toward a future where personal information will be biometrically stored. Biometrics are already to a certain extent used for controlling the movement of people across borders, but how much more can be done to unravel this potential, is yet to be seen.
9. **Robotics**: It is a branch of technology that deals with the design, construction, operation and application of robots. Increasingly capable robots with enhanced senses, dexterity and intelligence can take on some tasks that are considered to be too delicate for humans. It is expected that robotics will reach new dimensions during 2017, focusing more on content generation and other tasks performed primarily by humans. We see even today some Customs administrations, such as China Customs, exploring the application of robotics in their work.
10. **Blockchain technology**: Blockchain, or the distributed ledger technology (DLT), is the new buzz word when it comes to emerging digital technologies. The impact of Blockchain’s potential to fundamentally change the way markets and governments work is only now emerging. This complex development that everyone is talking about today is still to be explored and its potential use in supply chain management.

11. **Virtual reality:** Samsung Gear is maybe the best widespread example of how virtual reality can work. There is still a lot to be explored around the possibilities of its use, but one is for instance having long-distance meetings with team colleagues spread around the globe or possibly carrying long-distance physical inspection of goods.

Exploratory work and the way forward

12. Not every emerging technology will change the way we work, but it is key that policy leaders understand which technologies will be relevant to them and to prepare accordingly. The potential benefits of the new technologies could be tremendous, but also the challenges of preparing for their impact. If the business and government leaders wait until these technologies are exerting their full influence on the economy, it will be too late to capture the benefits or react to the consequences.
13. Bearing in mind the importance of exploring new and emerging trends for successful policy making, the PTC decided that the VWG FC would focus on exploring disruptive technologies which are gradually becoming part of our lives. However, the benefits for Customs and border management, have not yet been fully explored. Therefore, it was found relevant to carry out further exploratory work and research on these topics and provide more information on their use, benefits, risks, their role in the supply chain etc. The aim is also to take into consideration the interlinkages between the different disruptive technologies and have a more holistic approach to how latest technologies can support Customs business.
14. The VWG FC has already dealt with some technologies which are being considered as disruptive, such as 3D printing and drones and comprehensive discussions on these have taken place in PTC meetings.
15. However, the Group has now taken up the task of exploring disruptive technologies more broadly and members of the Group have volunteered to explore them in more detail. The results of this work will be shared in a panel session under item IX. of this Meeting, to be followed by a break-out session where PTC delegates will be invited to provide more information on the current exploitation of disruptive technologies in Customs and border management and to provide recommendations for the future.

Action required from the PTC

16. After a comprehensive panel discussion which will set the scene and provide food for thought, the PTC delegates will be invited to discuss the following questions in a break-out session and report back in the plenary:
- What are the benefits of disruptive technologies and how are they used in Customs and border management today?
 - What can we envisage for their future use and what would be the recommendations to policy leaders?
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