

## **DIGITAL TECHNOLOGIES AND DIGITAL SIGNATURE FOR SME DEVELOPMENT IN GLOBAL ECONOMY**

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Technological achievements are a significant factor for SME modern development in Global Economy. Digital technologies significantly improve the efficiency of economy through dramatically reduction of the cost of business relations and transactions. Production processes are determined by the combination of technology and devices along the whole value chain. Computer-driven systems are becoming more and more common to monitor and conduct physical processes. Digital technologies create a virtual copy of the physical world. Unprecedented spread of digital enterprises entails new practice of SMAC (social, mobile, analytics and cloud) technologies to achieve greater productivity.

In contemporary global development digital technologies force business to adapt novelties to survival in the transformed global industrial space against the tough international competition. In contemporary world digital technologies gaining speed to be incorporated in every spare of our lives over the globe. Of course, there is a variety of range of the definition. However, against the constant development of the information technologies, more and more business processes, products, goods, and services are impacted by innovations in this sphere and thus, the term will continue to evolve according the new futures of the modern business models, which eventually will become more and more digitalized.

New technologies give additional opportunities to small and medium businesses to act more easily at global level and access the foreign markets. OECD and WTO data demonstrated that, due to the cross-border activities relatively small business had an access to more customers. Study showed that offline sellers mainly exported to one markets meanwhile in case of 60% of online purchasing, such kind of firms were selling to two or more markets. Moreover, New internet platforms, such as Upwork and Freelancer, make possible for entrepreneurs and businesses to offer services online. (OECD and WTO 2017). As UNCTAD data shows, the share of those buying from abroad rose from 15% in 2015 to 21% in 2017 (UNCTAD 29 March, 2019). However, most internet buyers yet prefer to purchase goods and services from domestic firms. Consequently, cross-border business-to-consumer sales reached \$412 billion in 2019, consisting approximately 11% of

total B2C e-commerce. This is a 4% growth to previous year numbers (UNCTAD, 2019).

Electronic transactions have considerably expanded during the past decades. In 2018, 1.8 billion people purchased goods online. During the same year, global e-retail sales amounted to 2.8 trillion U.S. dollars and estimates demonstrate an increase up to 4.8 trillion U.S. dollars by 2021. (Clement 2019). According to the United Nations Conference on Trade and Development (UNCTAD), the value of business-to-business e-commerce exceeded \$15 trillion and with business-to-consumer e-commerce reached at \$1.2 trillion in 2013. The gross value of the cross-border e-commerce reached \$300 billion in 2015. Estimates predict a growth rate by roughly 25% annually through 2020. (DHL Express, 2016). In 2017 e-commerce sales grew by 13% globally, and reached \$29 trillion, as UNCTAD (29 March, 2019) number shows.

One of the important aspects that support the development of digital business operations, is the online verification of contracts or important documents necessary to prove the validity of online transactions. E-signatures represent modern means to accelerate online business processes and thus make accounts receivable and accounts payable, as well as close deals faster by removing transaction barriers and invoicing issues. Paper-based documents and handwritten signatures have been used to support commercial transactions for centuries in both in national or cross border cases. Therefore, countries had already developed appropriate legislation to deal with different commercial activities such as regulating a contract's terms, termination, execution, its conditions of validity, legally binding proof of consent and est.

Table – Top ten countries by E-commerce sales, 2017

Rank	Economy	Total (\$ billion)	As a share (%) of GDP	B2B (\$ billion)	Share (%) of all e-commerce	B2C (\$ billion)	Annual average spent per online shopper (\$)
1	United States	8,883	46	8,129	90	753	3,851
2	Japan	2,975	61	2,828	95	147	3,248
3	China	1,931	16	869	49	1,062	2,574
4	Germany	1,503	41	1,414	92	88	1,668
5	Korea (Rep.)	1,290	84	1,220	95	69	2,983
6	United Kingdom	755	29	548	74	206	4,658
7	France	734	28	642	87	92	2,577
8	Canada	512	31	452	90	60	3,130
9	India	400	15	369	91	31	1,130
10	Italy	333	17	310	93	23	1,493
	<b>Top 10 Total</b>	<b>19,315</b>	<b>36</b>	<b>16,782</b>	<b>87</b>	<b>2,533</b>	<b>2,904</b>
	<b>World</b>	<b>29,367</b>		<b>25,516</b>		<b>3,851</b>	

Source: UNCTAD

Online transactions entails numerous problems for both national and cross-border transactions. First of all not every country of the world has the appropriate legislation or regulations for electronic signatures and electronic transactions. The second serious problem relates with identification of the persons or parties who are conducting contract or signing the agreement, as well as with confidence that the information is valid and is not changed. This aspect is crucial in online transactions. Moreover, the technologies and methods used for online transactions are numerous and they should be interoperable to make them globally acceptable in every country.

At present, universal system of approaches, technologies, standards, or regulations does not exist for e-transactions. Though, the vivid benefit driven from digital economy push couriers to seek for solution of these problems. The United Nations Commission on International Trade Law (UNCITRAL) has taken steps to standardize the approaches and increase legal rules to govern e-transactions, e-signatures and digital authentication and therore issues the number of legislative documents to regulate the issue.

Currently, many countries adopted legislation to deal with e-transaction, though regional disparities still exist. According to UNCTAD, 145 countries have passed such laws, of which 104 are developing or transitioning economies. Almost half, 46.3%, of African economies, 72% of Asian, 81.8% of Latin American and Caribbean and 97.6% of developed economies have adopted e-transactions laws (UNCTAD, 2015).

The EU established a new legal framework for electronic identification, signatures, seals and documents by issuing The Electronic Identification and Trust Services Regulation (EU regulation 910/2014/EC - also known as eIDASRegulation) in 2014. The Regulation offers the terms of using for three

levels of signatures: basic, advanced and qualified e-signatures. While all types of signature are legal, acceptable and valid, only qualified e-signatures are legally identical to handwritten signatures. These are also the only types of signatures mutually recognized by all EU member states.

Over 23 million small and medium enterprises are operation in the EU, though majority of them are less affected by the eIDAS. The regulation is mainly implemented through public services and government agencies that widely apply new opportunities offered by the regulation. The regulations introduces new terms and concepts including electronic devices, and data types — certificates, identifications, signatures, timestamps, seals, creation data and devices — each are divided into 3 assurance levels. The regulation is too complex and contains no less than seven implementing acts and 30 norms, specifications technical standards, est.

In particular, digital technologies affect development and introduction of innovation in several ways. Digital technologies expanded research methods and tools through more accurate implication of larger amounts of data and wider participation of researchers based on distance cooperation. Due to the Digital technologies new products and services were invented as well as old products and services gain new, digital dimension and thus, gain additional quality and cost advantages. At the same time, digital technologies makes easier market integration through significant reducing communication costs and increasing matching efficiency, which in its turn increases competitive advantage of those who use this novelties. They support to reduce entry barriers by offering online services, like globally accessible cloud computing and online marketing platforms to small- and medium-sized enterprises and start-ups due to a significant reduction of the fixed costs of running a business both in internal markets and foreign markets. Big data equip firms with the opportunity to target products so they more closely align with consumer preferences grounded on more accurate information about the latter.

Despite the vivid advantages of the digital signature, business and individuals yet heavily rely on paper and hand-written signature. Many still lack confidence and trust in electronic processes. Though the speed of implication of the electronic signature is growing rapidly. However, The 4th wave of industrial revolution creates digital space that combines physical, biological and virtual world. But the digitalization would be impossible without appropriate confidence of online verification of contracts or important documents necessary to prove the validity of online transactions. In this context, the electronic signature is an excellent tool to affirm the legal value and validation of online business operations.

E-signatures represent modern mean to accelerate online business processes, especially for SMES and thus, make accounts receivable and accounts payable.

Despite the certain difficulties in term of application of digital signature for SMEs due to the technological novelties requiring appropriate physical infrastructure, complex and comprehensive soft-wares, strong and strict security requirements, skills and knowledge, changing of cultural and behavior attitudes, future developments will evitable lead to the wider use of digital technologies and consequently broader application of digital signature.

### References

1. European Commission (2015), Digital Single Market, “The first big step in eIDAS implementation accomplished”, 9 September 2015. Available at <https://ec.europa.eu/digital-single-market/en/blog/first-big-step-eidas-implementation-accomplished>.
2. Mermanishvili Tamar (2019). *Digital Marketing -a Modern Technological Tool for Gaining Competitive Advantages in Global Markets*, Business Systems Laboratory 6th International Symposium, “Borders without Borders: Systematic Frameworks and their Applications for Sustainable Well-being in the Global Era”. University De Pavia, Italy, ISBN: 9788890824272, 2019. p. 134-139; retrieved from: <http://bslab-symposium.net/Pavia-2019/BSLAB-%20Book%20of%20Abstract-Pavia-2019.pdf>
3. Sepashvili Eka (2019). *Knowledge Triangle: Innovation Policy Approach to Strengthen National Competitiveness*, Business Systems Laboratory 6th International Symposium, “Borders without Borders: Systematic Frameworks and their Applications for Sustainable Well-being in the Global Era” . University De Pavia, Italy, ISBN: 9788890824272, 2019. p. 134-139; retrieved from: <http://bslab-symposium.net/Pavia-2019/BSLAB-%20Book%20of%20Abstract-Pavia-2019.pdf>