Vision and conceptual approaches to elaboration at specialized UN bodies and relevant international organizations of a set of recommendations in the field of forming and functioning of single regional digital spaces in global economy

Introduction

Formation of common regional digital spaces in the global economy (hereinafter - SRD) is a current day trend and is aimed at providing conditions for enhanced forming and development of different regional integration associations as an efficient and competitive organization in the global economy, as well as for the sustainable development of national economies in order to improve the living standards of their populations.

The implementation of digital and information and communication technologies into various sectors of the economy and industry, the activities of public authorities and management, as well as in the daily life of the citizens, is a global trend and is fully applicable to developed and developing countries.

Current technological advances lead to the formation of national and regional strategies and programs aimed at forming of SRD in the context of conversion to the digital economy.

Conventionally, there are three basic process of formation of SRD:
- digital transformation of public administration (use of digital technologies in services provision, exchange of information between public authorities, business and citizens based on risk assessment);

- formation of the digital market (enabling of free and unhindered access to the Internet of goods and services, capital services, including electronic money, natural and legal persons in the conditions of fair competition with a high level of protection of their rights and personal data, regardless of their place of residence and citizenship);

- digital transformation of the economy (digital transformation of traditional industries, the emergence of new branches of digital goods and services - "industry 4.0").

The complexity of the respective processes, their priority in many developed and developing countries, which is stated in the relevant documents, as well as their potential to upgrade the economy, improvement of business environment and increase in growth of mutual turnover of goods, services, capital and labor – they all demand even more thorough study and inclusion into the agenda of priorities for the next years, establishment of coordinated actions by countries in this area. For example, in the European Union, formation of the digital single market is included in the number of its ten priorities.

Many problematic issues associated with formation of SRD are connected with underdeveloped of the legal framework in terms of rapid growth in the application of information and communication technologies (hereinafter - ICT) in all areas of regulation. It results in insufficient use of potential of e-commerce for the expansion of trade between states, harmonization of e-government systems, providing of interstate legally significant electronic services to citizens and business entities, establishment of sectoral cooperation ties.

The use of ICT as a tool to enhance and improve integration processes still has fragmentary nature. The fact that the majority of the integration processes are largely connected with the need to create common information resources and the establishment of effective communication lacks recognition.

It appears necessary and timely to use maximally the potential of the various integration projects and to cooperate efforts of states in their aspiration to digital transformation of their economies and building SRD.

Solution of the tasks states undertake to strengthen their economies, to ensure their harmonious development and rapprochement, sustainable growth of business activity, balanced trade and fair competition can be accelerated by consolidating efforts in realization of joint programs and projects on SRD development. In this connection the task of SRD formation becomes crucial and mainstream for perspective development of global integration processes both in the direction of "deepening" and "expansion" in the global world economy.

When preparing long-term strategic guidelines for SRD formation, global trends in this field, including experience of relevant institutions in the European Union, should be taken into account. For example, the Europe Digital agenda in the frames Europe 2020 Strategy provides for the following main areas of development:

1)   improvement of consumer and business access to digital technologies of purchasing goods and services;
2)   arrangement of conditions for digital networks and services infrastructure development;
3)   creation of the digital economy and digital society with long-term growth potential.

These listed development directions are fully relevant for other regions of the world. The priority directions of work in SRD formation may be as follows:
-      development of legal framework of individual countries and their harmonization for the purpose of forming SRD and economies transformation;

- formation of SRD as one of the main channels to increase mutual trade turnover with use of e-commerce tools;
- expansion of practice of ICT use to improve efficiency, including legal one, transboundary cooperation between public authorities, business entities and individuals;
- development and realization of joint projects and programs aimed at the digital transformation of state economies;
- formation of electronic services in directions of the "four freedoms" - movement of goods, services, capital and labor.

Substantial similarity of the tasks on forming SRD in different regions of the world and necessity of their further integration in the frames of global economy highlights the issue of generating basic architectures of a digital economy on the ground of known experience gained primarily in the frames of the UN Centre for Trade Facilitation and Electronic Business (CEFACT) , including the topics of formation and functioning of the single window and the transboundary trusted space, as a natural development of these topics in the SRD direction.

Also the task has already been brought to the agenda concerning realization of measures on creating a single digital space of the Eurasian Economic Union, which involves the production of basic architectures as well.

Conceptual approaches

1. In the frames of the upper level architecture in the formation of SRD a set of infrastructure and functional solutions can be identified.

1.1. The infrastructural solutions, also including information security aspects, can comprise:

- Regional and global transboundary trust spaces (TTS)[1];
- Systems of personal data protection[2];
- Systems of trade secrets protection;
- Other information security solutions.

1.2. The functional solutions can comprise:
- Concentrators (hubs) of e-commerce services[3];
- E-payment systems;
- E-government services systems;
- Telemedicine systems;
- Distance education systems;

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[1] http://www1.unece.org/cefact/platform/download/attachments/55378391/Rec+draft+v.0.952+10.03.16.pdf
[2] http://www.cbprs.org/Consumers/ConsumerDetails.aspx
[3] http://paa.net/

- "Single window" systems[45];
- Different applications of the Internet of things (IoT)[6], smart house, smart city, Internet of Vehicles (IoV)[7] and others;
- various information and analytical systems in aggregation with the systems of goods marking, including ones for trade flows monitoring for the purpose of traceability up to the final consumer.

2. An important architecture-defining feature of SRD is the expediency to use TTS to support transboundary legally significant electronic document flow in the frames of any functional services that require or imply a certain level of trust.

It especially applies to functional solutions, which can be classified as accounting information systems that contain information from the documents of title, which require special support measures from trusted electronic services. These functional applications include, for example, services provided on the basis of concentrators (hubs), e-commerce, e-payment systems, systems of e-government services, telemedicine, distance education and single window.

2.1. In this context, the term "transboundary trusted space" (TTS) is proposed to mean a set of legal, organizational and technical conditions recommended by the UN specialized bodies and relevant international organizations in order to ensure trust in the international exchange of e-documents and data between the subjects of electronic interaction.

Besides, the term "subjects of electronic interaction" is proposed to mean public authorities, individuals and legal entities that interact in the frames of the relations emerging during formation, sending, transmission, receipt, storage and use of electronic documents and data.

2.2. Separate functional applications, such as online dispute resolution procedures, can use not all the TTS tools, but only specific systems for identification of plaintiffs, defendants and third parties, appropriate to those used on the trading platforms where the dispute arose.

3. Various functional applications, such as the Internet of Things (IoT), smart house, smart city, Internet of Vehicles (IoV) and other analogs can be classified as information and reference systems that process various information and data, but not electronic documents. In this regard, use of complex and

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[4] https://en.wikipedia.org/wiki/Single-window_system
[5] http://www.unece.org/fileadmin/DAM/trade/ctied7/ece_trade_324e.pdf
[6] https://en.wikipedia.org/wiki/Internet_of_Things
[7] http://mddb.apec.org/Documents/2014/TEL/TEL50-PLEN/14_tel50_plen_020.pdf

expensive trusted electronic TTS services can be economically and organizationally unreasonable.

4.   It is expected that various information and analytical systems in conjunction with the goods marking systems designed, inter alia, to monitor trade flows for the purpose of traceability up to the end user can use the information resources of the account and reference systems in accordance with a predetermined analytical algorithm for purposes of control and prevention of possible misconduct.

5.   The issues of ensuring trade secrets and personal data protection and legal significance of electronic documents are based on the following general architectural principles:

-    coordinated organization of specialized international network of authorized operators by analogy with the Trusted Third Party (TTP) or Accountability Agents (AA);
-    determination of organizational, technological, legal and institutional requirements for such operators;
-    determination of requirements for auditing such operators;
-    conduct of independent commission audit of operators;
-    regulation of the access from the client level to the necessary information (trade secrets, personal data, electronic documents) for which authorized operators bear regulated responsibility.

Conclusion

The proposed basic architectural approaches can significantly facilitate subsequent development by specialized UN agencies of and relevant international organizations of a set of the recommendations in the field of formation and functioning of SRD, as well as in the preparation of various concepts, strategies and other fundamental documents in integration associations, which plans provide for construction of SRD. It is obvious that construction of particular information systems in the frames of SRD will cause interpenetration between separate elements of the described basic architecture.