CONCEPTUAL ANALYSIS OF THE NOTION “SERVICES” AND “INFORMATION-COMMUNICATION SERVICES” IN THE DIGITAL AGE

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Abstract: Recent alterations in the global economy have seen rapid expansion and improvement of ICT in all sectors of economy. Subsequently, these requires economies and businesses to reassess and enhance the currently available conceptual foundations of the notion “Services”. More specifically, services have been massively influenced by the rapid global ICT uptake that instigated the formation of new directions in the services field. The following paper aims to review the currently available classification frameworks on the notion “Services” and provide the author’s view on describing the merely defined concept “Information and communication services”.

Keywords: “Services”, “Information and communication services”, Services classification regimes, Digital services/products, Telecommunication services, Social networks

Аннотация: В последние годы отмечаются значительные изменения в мировой экономике в связи с массовым распространением и совершенствованием ИКТ во всех секторах экономики. Следовательно, важно отметить что существующие классификации концепции «Услуги» не полностью раскрывают новые функции данной сферы. В частности, рост использования ИКТ в сфере предоставления услуг, стало основой для формирования новых и инновационных направлений в данном секторе. В данной статье приводится анализ имеющихся в настоящее время классификации концепции «Услуги», и исходя из существующих классификационных режимов автор определяет функциональные особенности характерные для нового направления сферы услуг - «Информационно-коммуникационные услуги».

Ключевые слова: “Услуги”, “Информационно-коммуникационные услуги”, Классификация услуг, Цифровые услуги/продукты, Телекоммуникационные услуги, Социальные сети.

Аннотация: Сўнгги йилларда иқтисодиётнинг барча тармоқларида АКТнинг кенг тарқалиши ва такомиллаштирилиши туфайли глобал иқтисодиётда сезиларли ўзгаришлар юз берди. Шунинг учун “Хизматлар” концепциясининг мавжуд таснифлари ушбу соҳадаги яниг фақтиларни тулиқ очиб бераётгани таъкидлаш керак. Хусусан, хизматлар кўрсатишда АКТдан фойдаланишни кенгайтириш бу соҳада “Ахборот ва коммуникация хизматлари” каби яниг ва инновацион йўналишларни шакллантириш учун асос бўлди.

Ушбу мақола «Хизматлар» концепциясининг мавжуд таснифларини таҳлили килиш ва мавжуд таснифлар учун асос бўлган "Хизматлар" концепциясининг мавжуд таснифларини таҳлили килиш ва мавжуд таснифлар учун асос бўлган.
Introduction: Certainly, the sustainability of the economy and the society in the modern civilization is directly influenced by the presence of technological component in it. Digitalization of the economy incorporates the various forms of products and services emerged with the growth of information technologies. Consequently, the wide expansion of the new business models and followed innovative services require economies to reassess the existing industry classification and measurement regimes.

In fact, the report presented by IMF in February of 2018 admits the crucial role of improving the available measurement schemes of the digital economy in GDP. These concerns are ignited with the low productivity growth of advanced economies during the rapid technological progress in the world, that is argued to be a consequence of the digital economy mismeasurement in GDP. According to the arguments provided by IMF, these inaccuracies in GDP measurement is a result of the lack of generally agreed definition of the digital economy and its components (sector, products/services and transactions), that often results in a very narrow (insufficient) description of the concept “digital economy”, considering it only as online platforms and its associated activities.

The following paper aims to review the existing international and national classification regimes of “services”, and its continuously expanding subcategory “information and communication services”; provide the overview of available information and communication services in the national market; and provide a basis for further research and discussions within the field of digital economy.

Country overview - Uzbekistan: Since the independence in 1991, the government took number of strategic actions on developing the ICT sector of the Republic. This has been achieved through the realization of various projects directed on modernizing and developing telecommunication and Internet networks in the republic (see Figure 1).

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1. The economic sectors that continuously involve ICT in their activities are growing 1.7 times faster than the average growth rate in the economy (OECD Information Technology Outlook 2015, 2015).
2. IMF defines the digitalization of the economic activity as “the incorporation of data and the Internet into production processes and products, new forms of household and government consumption, fixed-capital formation, cross-border flows, and finance.”
3. For instance, according to Oostrom et al. (2016), businesses in Netherlands with an online presence constituted for 87 percent of turnover, and 86 percent of employment in the business segment in 2015. However, if to narrow the definition of digital economy to online stores and internet related ICT services, the indicators fall down to 7.7 percent and 4.4 percent accordingly.
The outcomes of these measures have significantly improved the information and communication infrastructure of the republic. Specifically, the level of coverage of digital telecommunication networks of cities and regional centers of the republic have reached almost 100%, and rural areas of the country reached around 90%. These technological re-equipment of all key sectors of the national economy have expanded the use of Internet networks, led to the exponential growth in the number of Internet users (increased almost 70% since 2013), and significant growth in the speed of Internet in the national country (reached 104,100 Mbps in October, 2018) (Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan).

Subsequently, the Decree of the President of the Republic of Uzbekistan “On the Action Strategy for the Continuous Development of the Republic of Uzbekistan in 2017-2021” further influenced on the development of the efficiency of the current reforms, namely, the formation of conditions to guarantee the full and advanced development of the state and society, modernization and liberalization of all fields of life of the country. Institutional and legislative reforms within the framework of the Strategy for Action concentrated on the implementation of the tasks identified by the State Programme, which effected on the implementation of 437 actions containing 320 articles, the adoption of 29 laws and the improvement of over 900 legislative acts in a wide range of sectors of the economy and the society (2017-the year of sweeping reforms, 2018).

These developments and actions taken at the initial step of Strategy for Actions significantly bettered the quality of public services delivery provisioned via the use of Information and Communication technologies. “E-government” system was
Improved with latter technological developments and brought in advanced mechanisms of dialogue with people. Subsequently, the up-to-date system of the delivery of state services enhanced the population’s life standards, boosted the attractiveness of the investment climate in the country, and endorsed the increase of modern and innovative business opportunities.

Besides, so as to advance the national system of providing state services to a qualitatively new level, the Decree of the President “On measures for drastic reformation of the national system of provision of state services to the population” and the Resolution “On establishment of the Agency on State services of the Ministry of Justice of the Republic of Uzbekistan” was adopted on December 12, 2017. The objective of these vital actions is to identify the organizational and legal actions to significantly enhance the quality, efficacy, transparency and accessibility of state services (2017-the year of sweeping reforms, 2018).

![Figure 1. Number of electronic services at Single Portal of interactive state services](Source: Data collected from the official website of the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan, www.mitc.uz)

Subsequently, the government established Single Portal system that manages to provide more than 300 interactive electronic services in different economic sectors (Figure 1). These include electronic document management system - “e-Hujjat”, electronic statistical reporting system - “e-Stat”, electronic visa registration system - “e-Visa”, online economic court registration system - “e-Sud” and many others (see Figure 2).

4 Over 75 thousand people are already utilizing the electronic state services system.
5 These facilities in the business sector enhanced the status of Uzbekistan in the global ranking of Doing Business 2018 from 24th to 11th position.
6 The system enables the submission of applications on obtaining 61 type of licenses for 40 types of activities.
The national legislation database of the Republic of Uzbekistan, that includes more than 32.6 thousand regulatory acts;

The portal for taxpayers, that is used by almost 99 percent of entrepreneurs;

The single licensee portal, which provides access to the full list of activities that should be licensed and licensing procedures, as well as the list of required documents for receiving licenses and permissions;

The single portal of declarants - today, almost 99 percent of cargo customs declarations are registered online;

Automated system for the electronic statistical reporting "e-Stat";

The portal of municipal services and housing provides a range of different services, including the Reception and Processing complaints, the payment of municipal services and information about payment tariffs;

The information system "e-Visa - currently, more than 90 percent of visas to the foreign citizens are issued online;

More than 35 thousand claims and applications to the economic court are applied online through the system "e-Sud"

Figure 2. Key facts on the services delivered through the Single Portal
Source: Generated by author, based on the data collected from “2017 - the year of Sweeping Reforms”, (2018), Adolat Publishing, Tashkent.

The expansion of the use of modern technologies in the government sectors, the continuous development of online services and large investments in the infrastructure facilitates to a wider implementation of information technologies in the private sector and contributes to its promotion in the corporate sector. Furthermore, these reforms have stimulated the creation of innovative business models, such as MyTaxi, Yandex Taxi, Express 24 by MyTaxi, Asaxiy.uz and others, that fully or partially provided through the digital data exchange. Indeed, IMF argues that all activities that involve digitized data should be considered as “information and communication services” and should found a part of the digital economy(Measuring the Digital Economy, 2018).

Comparative review of international and national classification frameworks: The concept “service” is very abstract and is subject to different interpretations. GATS does not outline the notion “services” due to the shortage of an agreement during the negotiations (Weber & Mira, 2013). Since the abstract criteria, for example the immateriality, the intangibility, and the invisibility can only be considered of constituting open guidelines, the GATT Secretariat has presented “Services Sectoral Classification List” (W/120 List) in 1991, during the course of negotiations on the GATS, which followed the “Provisional Central Product Classification” of the United Nations (CPC). This W/120 List is used as a guide for the classification of services by most of the WTO Members, since the W/120 List

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7 For instance, the innovative service Express 24 provides food delivery services from various local café and restaurants to consumers. Consumers simply place their order through the mobile app of the MyTaxi company; the company then processes the placed order through connecting to the relevant cafes and restaurants. At the final stage, the order is delivered by MyTaxi staff (drivers). Consumers are provided with a product from a third party, through the services of MyTaxi. This example illustrates some of the measurement challenges. For instance, since MyTaxi does not own restaurants, should MyTaxi be classified as a business service or a transport service, or information and communication service?
encompasses a large number of manifold services and has thereby facilitated negotiations (Weber & Mira, 2013).

In most instances, goods may be differentiated from services effortlessly. One exception deals with digital products, being products which can be kept as data, for instance, texts, computer programs, music or movies. Principally, the user is not in fact concerned about the physical data carrier (e.g. CD/DVD/USB), but in the data it contains (Weber R., 2010). Subsequently, the trend appears to follow the direction of breaking digital products into classes such as information and communications services.

More specifically, services offered through e-commerce, which have not been in practice legitimate during the negotiations of the Uruguay Round have nevertheless not discovered a suitable place in the WTO legal framework. In May 1998, during the Geneva Ministerial Conference the WTO Members accepted the Declaration on E-commerce and (based on a Background Note of the WTO Secretariat), the General Council issued a Work Programme on Electronic Commerce in Fall of the year 1998 (Weber & Mira, 2013). Consequently, the negotiations instigated some progress and stressed many different spheres like goods, services, intellectual property and development, having been deeply influenced by the current Internet-enabled trade. Albeit, these segments of market are dramatically increasing and improving in the provision of IT products and services, not much consideration is paid to enhance the classification problems.

The following paragraphs aims to review the international classification and measurement regimes (see Table 1 for a short review):

1) W/120: The services sectoral category list (W/120) is a complete listing of services sectors and sub-sectors covered under GATS. It was assembled by the WTO in July 1991 and its aim was to moderate the Uruguay Round negotiations, safeguarding cross country similarity and consistency of the dedications guarantee. The 160 sub-sectors are illustrated a grand total of the more thorough categories incorporated in the United Nations provisional Central Product Classification (CPC) (Weber & Mira, 2013).

Even though, the classifications, which were created by the WTO constructed the landmark for the discussions of any classifications, it could not be overrated that owing to their original date, the fast and continuing technological enhancements since the Uruguay Round (1986-1994) and the shortage of significant amendments in the WTO regime ever since, more current classifications of other organizations are introduced and are made use of in international trade negotiations.

2) CPC (CPC Version 1.1, 2002): The Central Product Classification (CPC) is, in fact, a categorization which is based on the physical features of products or on the origin of the provided services. Every sort of product or service differentiated in the CPC is described as an avenue that is usually created by solely one activity as clarified in International Standard Industry Classification of all Economic Activities (ISIC).

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3 Internet traffic and World Wide Web were only being used from mid-nineties onwards.
The renewal to CPC 1.1 has concentrated largely on improving the structure and detailed scrutiny of certain sections of CPC 1.0. CPC 1.1 provides a more detailed structure by type of telecommunications service. More specifically, these updates include carrier services, fixed telephone services, mobile telecommunications services and program distribution services. A more elaborate breakdown and detailed study of Internet related services under group 842 have also been enhanced.

CPC Version 2 (CPC 2.0) being the most recent revision of the international unity of economic and social classifications contains a detailed classification of all products and services and is the standard for all goods that are an outcome of an economic activity.

3) **OECD**: The Joint OECD - Eurostat Trade in Services Classification has a close link to the fifth edition BPM (BPM5). It can be featured as a disaggregation of the BPM 5 classification for balance of payments transactions related to trade in services. The Joint OECD-Eurostat Trade in Services Classification compiles all service transactions made between residents and non-residents. The estimate of every member country’s exports and imports of services by service type is indicated by the database on “International Trade in Services” (Weber & Mira, 2013).

4) **Manual of Statistics of International Trade in Services (MSITS)**: The Guide that was made on Statistics of International Trade in Services 2010 (MSITS 2010) deals with the needs of a range of goods and users of such statistics. It is mainly a manual for compilers of statistics, while it is at the same time a handy tool for governments and international organizations too that implement statistical data dealing with international negotiations on trade in services.

The updated guide supplies a more thorough classification of services distributed via traditional trade between residents and non-residents. Specifically, revisions in the classification of Extended Balance of Payments Services (EBOPS 2010) and existing frameworks for statistics were placed (Weber & Mira, 2013). The MSITS 2010 Classification distinguishes telecommunications, computer and information services (OECD).

5) **Extended Balance of Payments offerings (EBOPS)**: While it is more detailed, the classification of the EBOPS is generally similar to IMF’s BPM5 classification of trade in services. EBOPS was made for the MSITS 2002, deriving from the experience obtained with the usage of the Joint OECD-Eurostat Trade in Services Classification at the end of the 1990s. EBOPS describes electronic services through dividing into two wide sectors: 1) Communication services (Postal and courier services; telecommunication services); 2) Computer and information services (computer services; information services – news agency services; other information provision services) (OECD).

6) **Nations International Standard Industrial Classification (ISIC)**: ISIC is known to be the United Nations International Standard Industrial Classification of every economic activity. This classification is standardized internationally to classify

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9Completed on 31 December 2008.
productive economic activities in order to allow entities to be able to be classified with regard to the activity they perform (Weber & Mira, 2013).
### Table 1.

Comparative analysis of services sector measurement classification regimes

<table>
<thead>
<tr>
<th>Classificationregimes</th>
<th>General description; latest updates made</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/120</td>
<td>✓ Complete listing of services sectors and sub-sectors covered under GATS.</td>
<td>✓ Services offered through Internet were not legitimate during the negotiations of the Uruguay Round (1986-1994), and there is a shortage of significant amendments in the WTO regime ever since.</td>
</tr>
<tr>
<td>The Central Product Classification (CPC)</td>
<td>✓ Based on physical features of products or on the origin of the provided services; ✓ Significant improvements made to keep up with technological progress (particularly telecommunications and internet services list has been extended).</td>
<td>✓ Although telecommunications and internet services list have been improved, the services enabled through internet platforms (such as Airbnb), and media sectors have not been considered.</td>
</tr>
<tr>
<td>International Standard Industrial Classification (ISIC) of the United Nations</td>
<td>✓ Defines Information and Communications Technology (ICT) sector, as well as Content and Media Sectors.</td>
<td>✓ The services provided through the internet platforms have not been included (such as Airbnb).</td>
</tr>
<tr>
<td>The Joint OECD – Eurostat Trade in Services Classification Manual on Statistics of International Trade in Services (MSITS)</td>
<td>✓ Close link to the fifth edition BPM; ✓ Covers all service transactions made between residents and non-residents.</td>
<td>✓ The innovative services provided in the digital economy have not been reviewed.</td>
</tr>
<tr>
<td></td>
<td>✓ Widely implemented to measure international negotiations on trade in services; ✓ Observing enhancements in the market of international services; ✓ A thorough classification of services distributed via traditional trade between residents and non-residents; ✓ The classification of Extended Balance of Payments (EBOPS) and existing frameworks for statistics has been revised.</td>
<td>✓ Distinguishes only among telecommunications, computer and information services; ✓ Digital transactions have been considered.</td>
</tr>
<tr>
<td>Extended Balance of Payments offerings (EBOPS)</td>
<td>✓ Close to IMF’s BPM5 classification of trade in services; ✓ Describes electronic services through dividing into two wide sectors (Communication services; Computer and Information services).</td>
<td>✓ Does not include complete list of services provided through the Internet platforms, digital products/services.</td>
</tr>
<tr>
<td>Nations International Standard Industrial Classification (ISIC)</td>
<td>✓ Standardized internationally to classify productive economic activities; ✓ Allows entities to be classified according to the activity they perform.</td>
<td>✓ Online platforms (Google, Facebook) and their products are incomplete, as well as platform-enabled services are not included (Airbnb).</td>
</tr>
</tbody>
</table>

(Note: Data from Weber & Mira, 2013).

Since there is not single internationally recognized description of the word “services” owing to the fact that the opposing parties could not come to consensus, the meaning of “services” is subject to interpretations. According to the State Committee of the Republic of Uzbekistan on Statistics defines “Services” as the...
result of productive activities that change the state of consumers (legal entities and individuals) or facilitates the exchange of goods, services or financial assets (Methodical provisions, 2016).

**Figure 3. The main service sectors of the economy.**

(Note: Data from The State Committee of the Republic of Uzbekistan on Statistics, www.stat.uz)

Statistical records of services by type of economic activity are maintained in accordance with the Program of development of the service sector in the Republic of Uzbekistan on the basis of the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan of 02.26.2016 No. 55 "On the program of development of the services sector for 2016-2020", and distinguishes 13 main sectors of services by economic activity (Figure 3).

**Discussion and recommendations:** Recent global developments in the ICT industry have resulted in the expansion of the ICT based products and associated services that stress existing classification and measurement regimes. Currently, the digital sphere, for instance, cloud computing covers information processing and database services from business services and electronic mail, database retrieval and data processing from communication services, data exchange through social platforms. Evidently, the IT sector has expanded out of a merge of telecommunications, computer technology and software and the mixture with services from more content-focused sectors such as broadcasting and publicizing were to come in the future, which is resulting in a mix hybrid IT services cloud and consequently hard to put into categories into any specific sector. Indeed, OECD suggests that concept “information and communication services” should cover all services that are digitally ordered, digitally delivered and platform-enabled.

The comparative analysis found that currently available classification regimes (see Table 1) do not consider (or partly consider) three crucial trends in services...
sector, empowered with the recent digital advancements in the global economy: 1) Online platforms (Google, Facebook) and their products; 2) Platform-enabled services (such as Airbnb, MyTaxi); 3) Databases are considered as a product, but not data itself.

Based on the reviews of relevant studies, the services sector “information and communication” technologies are suggested to be defined as those services that are provided through the digital transactions (digitally ordered/platform enabled/digitally delivered), telecommunications and social networks.” The proposed definition covers three major service sectors: 1) telecommunication services; 2) Services provided through the digital transactions; 3) social networking services.

1) Telecommunication services.

2) Services provided through the digital transactions: Digital commodities could be computer software, videos, images, sound recordings or other commodities that are digitally encoded and transmitted through the electronic devices, despite whether they are contractually treated as commodities or services.10

The continuous and irrepressible development of the Internet and Internet-related services along with the ubiquitous ongoing progress of other data and ICT devices is improving electronic cross-border communication of services and digital commodities (such as the recordings of sound, audiovisual works, video games, computer programs and literary works). Therefore, and importantly, services provided through digital transactions should be included to this sector.

3) Social Networks: A social network is usually described as a “construct” encompassing relationships between individuals, groups, organizations, or even entire societies. The structure of a social network is determined by interactions between persons or entities. The characteristics of a social network are expressed by such interactions which often model and explain social phenomena.

The notion of social networks (for instance Facebook or Twitter) normally is made up of sharing principles and beliefs across communities, and in the meantime shaping social bonds between those who are taking part in the network and, therefore, creating social groups.11

The services given by a social network normally are not charged to those taking part. This, in fact, makes social networks appealing. However, payments are not inappropriate; the services for advertising provide the financial needs of a social network and provide it with the possibility not to enquire money from the users (“consumers”). Businesses which are interested to attain a large public usually purchase virtual space. Hence, it can be said that advertising is the major profit source for a social network.

10 Frequently, the trade with digital commodities has the feature of a service because the users have an interest in the data (software, video, music) that can be a byproduct of digital product. Therefore, there is mostly a close linkage to a service, since the digital products are seen as services notwithstanding the way the product/service is offered or consumed.

11 Social networks established in the Internet were not in existence during the Uruguay Round negotiations; as a result, the electronic services belonging to social networks are not recognized and listed in any classification modes while being utilized at the beginning of nineties.
Concluding Thoughts: The categorization of services in the digital economy is known to be principle for running businesses, not only in the ICT-related fields; but at the same time, it seems to be a particularly difficult regulatory problem, which effects on a range and often hard problems. The principle idea of classifications is to group and organize information while making it meaningful and systematic according to a standard model that is handy for identifying the comparability of services.

Nevertheless, there does not exist any agreed framework or conceptual prototype that contains all aspects and the ever-progressing behavior of the information society. The illustrations of a variety of classifications have demonstrated that a number of organizations having various aims are collaborating on the enhancement and development of internationally applicable standards.

The current available regimes on the services classification does not state any clear and single agreed definition of Information and Communication services, due to the lack of an agreement during the negotiations of the Uruguay Round. The research identified that current measurement regimes do not provide complete list of services of the current modern business world. Therefore, the proposed description for information and communication services cover all services provided through the digital transactions, telecommunications and social network.

Reference list:


