



Classification of E-Service in Indonesia

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ARTICLE INFO

Received 2 December 2019
Revised 19 June 2020
Accepted 8 June 2020
Available online 30 June 2020

Keywords
Classification, e-service, 27
categories

ABSTRACT

E-service consists of various actors. Today, there is a wide range of actors involved. Public, private, and government connected in such complex way to create the e-service world we know today. However, the broad and complexity of the environment raises challenges for policy makers and regulators, such as tax. Until now, there is no tax regulation that specifically regulates trading activities using information technology, also known as an e-service. It operates globally without physical boundaries of a nation. However, rules can be different among nations. The initial step to make these rules is the classification of types of services using information technology, based on the business actors involved. Lack of classification raises problems, such as overlapping business segmentation, which may lead to inaccurate classification of the treatment. That is why a complete classification of e-service is needed. This study proposes a classification of e-service based on provider of the service, origin of goods and service, and the destination of goods and services in Indonesia. Research data obtained through literature studies and surveys of information technology-based service provider sites. We propose 27 categories of e-business classification, which can be used further, such as to cluster business and as a basis for regulation.

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1. Introduction

By 2025, the market is predicted to be more active to search for consumer. Business and consumer will interact in different and innovative way than exist today. New technologies such as internet of things, intelligence machine will enable new business model. Virtual reality, mobile device, social media and digital communities will create new interaction model. To maintain and survive such severe competition, business needs to update their vision and technologies towards new commerce model [1].

Gartner predicted Compound Annual Growth Rate (CAGR) of digital platform market based will rise more than 15% by 2020 [2]. In conventional business, buyer and seller exchange goods at a specific place called market. E-commerce is a revolution that change the way producer and consumer interact. E-commerce operates globally, without geographic boundary of a nation. This is reflected by integral user experience, multi-level distribution support, cost reduction and efficient workflow. Business conducted in such way is known as e-business.

Indonesia offer opportunity for e-commerce implementation, with \$130 billion market by 2020, after China and India. It put Indonesia as the third prospectus country within Asian nations. With projected growth rate of 50% annually, retailer will have the opportunity to focus on mobile platform development to facilitate national wide e-market growth to global level [3]. This circumstance enable e-commerce and e-business growth. This allows the development of ICT-based services or more commonly known as e-service. However, complete classification of e-service is not available yet. Currently there are many e-services, ranging from start up to multi-national enterprises. E-service providers also vary, from the government to the private sector. The broad range raises challenges for policy makers and regulators. This situation raises problems, such as inaccurate classification of tax and overlapping business segmentation. Since e-commerce operates globally, location of the company or source of the goods, for example, may bring new challenges to determine tax rates [4]. Complete classification e-service also enable the government to fairly regulated market of e-service. We propose a classification of e-service based on provider of the service, origin of goods and service, and destined consumer of goods and service.

A tax is a compulsory levy imposed on society for the state. One type of tax is the tax imposed on buying and selling activities, both in the form of goods and services. Taxes on conventional activities have been regulated by the government through Government Regulation number 46 of 2013. The development of information technology has significantly changed the buying and selling activities, both the method and the process.

2. Research Method

The stages in the study begin with the study of literature on the definition of e-commerce, e-business and e-service. The literatures are taken from journals, proceedings, reports, and news between the year 2000 to 2017. Starting from the definition, how are the interrelationships and differences in the scope of the definition of e-commerce, e-business, and e-service. Next, a survey of the types of services that use information technology is conducted. Finally, classify e-services that have been obtained based on previous surveys.

Generally, the e-service category is differentiated based on the type of provider and user of the service. In this study the proposed e-service classification is differentiated based on Service provider, Origin of goods or services, and

destination of goods or services. Qualification results are accompanied by examples of services in Indonesia.

3. E-Commerce

The history of e-commerce began in the 1970s by using EDI (Electronic Data Interchange) technology to facilitate B2B in conducting document exchange transactions such as ordering purchases. The development of e-commerce led to the use of the internet in 1998 [5]. E-commerce is identical to all sales transaction processes using the internet. The organization's need for information technology is increasing with a wider scope than focusing on sales. It has expectations to improve the process by using information technology. IBM introduces e-business with a new paradigm [6].

4. E-Business

E-business is aimed at increasing organizational competitiveness by applying innovative information and communication technology to the entire organization and its surroundings, through relationships between partners and customers. This not only involves the use of technology to automate existing processes, but also must achieve process transformation by applying technology to achieve effective processes [7]. E-business aims to optimize the use of digital technology, especially internet technology, to improve organizational competitiveness through continuous optimization [8].

The development of a system that uses the internet today is not only prioritizing and increasing profits for companies, especially for non-profit organizations. Is the system used with the main goal as a service that does not prioritize profits can be categorized as e-business? Is e-government included in the e-business category? Many studies address the differences between e-commerce and e-business with e-government [9] [10] [11] [12]. Differences can be seen based on their purpose, e-business goals for creating customer value and generating revenue, while e-Government goals are based on law, and regulations that give citizens and companies access to government information and services, and also describe intergovernmental relations, and strategies [10]. Based on these differences, in this paper it is concluded that e-business has a difference with e-government.

5. E-Service

For a broader scope of e-business, Hewlett-Packard introduced e-service. The concept that focuses on the use of information technology and telecommunications to improve the effectiveness of organizational processes. E-service is any activity provided by the service provider to the recipient. Services provided are intangible through the use of information and communication devices. These activities can provide benefits, in the form of services or property acquisitions [13].

E-services as services produced, provided or consumed through the use of ICT networks such as Internet-based systems and mobile device solutions [14]. Based on its scope, e-service is wider than e-business, because all forms of services that use ICT can be categorized as e-service. It can be concluded that e-government and e-business belong to the e-service category. For more details, Figure 1 illustrates the relationship between e-commerce, e-business, e-government, and e-service.

Scopula categorizes e-service groups based on the parties and stakeholders involved. The groups include B to B, G to G, C to C, B to C, B to G, G to C, where B represents business, G is government, and C represents customer [15]. E-

government can also act as e-business, for example such as license renewal and certification, paying taxes, applying for benefits etc. [16]

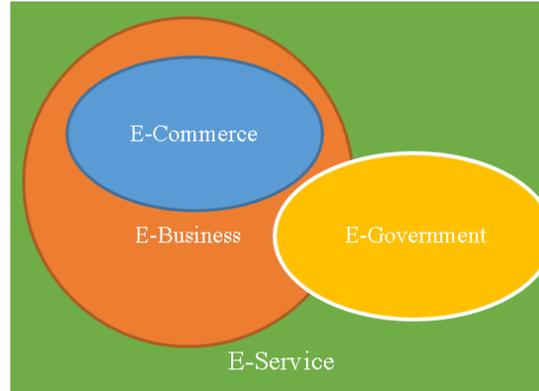


Figure 1 Relationship Between E-Commerce, E-Business, E-Government, and E-Service

6. E-Service Classification

Based on the survey described in Research Methodology above, this paper proposes to classify e-services which are divided by:

1. Service provider
2. Origin of goods or services
3. destination of goods or services

Service provider is entity, which provides Information Technology (IT) based platform for the transaction. There are two main providers,

1. Internal (I). The company itself provides the platform used.
2. External (E). The company utilized platform provided by another company.

Origin of goods or services are entities, which provide goods or services involved in a transaction. They deliver goods or services to destination actor. Both origin and destination actors can be one of the following actor.

1. Government actors (G),
2. Business actors (B),
3. Consumers (C),

Based on the rules above, we propose 27 categories are summarized in Figure 2. The categories are expressed in a three-letters, representing provider, origin, and destination respectfully.

- c. GGC, is a service provided by the government. Goods or services are provided by the government for end consumer needs. The E-auction is an example of this category. The Ministry of Finance provides e-services to conduct auctions which can be accessed at www.lelangdjkn.kemenkeu.go.id.
 - d. GBB, in this category, service providers to exchange goods or services provided by the government. The goods or services are exchanged derived from business entities to meet the needs of other business entities.
 - e. GBC, a service provider for the exchange of goods and or services provided by the government. The goods or services exchanged originate from business ventures to meet the needs of end consumers.
 - f. GBG, a service provider for exchanging goods or services provided by the government. Goods or services are provided by businesses to meet the needs of government agencies.
 - g. GCB, a service provider for exchanging goods or services provided by the government. The origin of goods from consumers to meet the needs of business entities.
 - h. GCC, a service provider for the exchange of goods or services provided by the government. Goods and services come from consumers to meet the needs of other consumers.
 - i. GCG, services for exchanging goods or services provided by the government. Goods or services originate from consumers to meet the needs of government agencies. The categorize of GBB, GBC, GBG, GCB, GCC, and GCG is not yet available in Indonesia.
2. Service Platform provided by the company to support their business.
- a. IBB, is a service provided by internal companies to facilitate company activities to exchange goods or services with other business organizations. Examples of this category are e-auction and e-procurement owned by business organizations. The e-business owned by Krakatau steel which can be accessed at e-business.krakatausteel.com is an example of the IBB category.
 - b. IBC, is a service provided by internal companies to facilitate company activities in selling and marketing goods and services to end consumers. Examples of this category are e-finance. E-Finance is a service owned by a business organization aimed at making it easier for consumers to make transactions. E-finance is a funding transaction for economic activities through electronic communication medium (ECM) [25]. E-finance is a subset / part of e-commerce mainly used by the banking, investment and insurance industries. Complex and complicated transactions are easier [26]. The e-finance platform consists of e-banking, e-money or e-currency, e-insurance, e-trading, and e-acquiring. The following is a description of the relationship between IT management, e-commerce or e-business with e- finance. E-tailing is also included in the IBC. E-tailing is a service owned by a business organization to sell and market products online. E-tailing is a transaction carried out through an

interactive online computer system, which connects consumers with sellers electronically, where buyers and traders are not in the same physical location [27]. E-tailing, also known as e-retailing, has characteristics of product search facilities, product evaluation facilities, on-line purchasing functions and product delivery capabilities [28]. The example of e-tailing in Indonesia is gamedia.com, Correfour.co.id, klikindomaret.com. Another example is a website to assess student personality [29], and a website to monitor lecturer performance [30] provided by the university.

- c. IBG, is a service provided by internal companies to facilitate business organizations offering products and conducting business interactions with the government.
 - d. ICB, is a service provided by individuals to facilitate end consumers offering products to business organizations.
 - e. ICC, is a service provided by individuals to facilitate end consumers offering products to consumers.
 - f. ICG, is a service provided by individuals to facilitate end consumers offering products to the government.
 - g. IGB, is a service owned by the internal government to offer products provided by the government to meet the needs of business organizations. This category is the same as the GGB category.
 - h. IGC, is a service owned by the internal government to offer products provided by the government to meet the needs of end consumers. This category is the same as the GGC category.
 - i. IGG, is a service owned by internal government to offer products, interact and exchange data and information between government agencies. This category is the same as GGG.
3. Service provided by third party.
- a. EBB, a service that is owned by a business organization to facilitate business organizations in marketing products to other business organizations. Examples of this category in Indonesia are www.bizzy.co.id
 - b. EBC, services owned by business organizations. Service aims to facilitate business organizations in order to meet product needs to end consumers. Example of this category are e-marketplace, e-tourism, e-travel, and e-booking. www.amazon.com is an example of e-marketplace on EBC category. E-tourism is e-commerce in the tourism sector for commercial purposes including offering tourism products such as flights, hotel reservations, car rentals and so on [31]. E-tourism is also known as e-travel. E-tourism refers to phenomena and research areas where the application of information and communication technology (ICT) is able to change the processes and value chains in the tourism industry [32]. E-Tourism is an e-commerce section that combines telecommunications technology, information technology, the hotel industry, management, marketing and strategic planning. E-Tourism activities involve tour operators, travel

agents, travel consumers and other entities that have interests in the tourism sector through specialized portals in cyberspace. E-tourism that can be used by consumers includes e-information, e-booking (hotels, transportation, etc.) and electronic payments. Examples of E-bookings included in the EBC category are traveloka.com, and pegipegi.com.

- c. EBG, a service owned by a business organization to facilitate business organizations in selling products to meet government needs. This category does not yet exist in Indonesia. An example of this category is www.b2gmarket.com.
- d. ECB, a service owned by a business organization to facilitate business transactions between individuals and business organizations. Products offered to meet the needs of business organizations. An example of this category is www.jobstreet.co.id. Jobstreet provides services to facilitate individuals interacting with business organizations in terms of offering capabilities and expertise.
- e. ECC, a service that business organizations have to facilitate individuals offering products to end consumers. Examples of these services are e-marketplace (ex. www.bukalapak.com), e-auction (balelang.com), and e-hailing (ex. Gojek, grab). E-hailing or also known as ride sharing is a platform that uses GPS technology to connect drivers and consumers who need a ride at an agreed price. Generally, consumers use the application on a smartphone to request a ride by providing specifications of time and place. The ride sharing system will provide price information, driver location, and waiting time. The system also allows passengers and drivers to contact each other [33].
- f. ECG, is a service category owned by business organizations to facilitate individuals to offer products to the government.
- g. EGB, is a service category owned by a business organization. Services aimed at facilitating government interact with business organizations in terms of offering and selling products.
- h. EGC, a service owned by a business organization to facilitate governance to interact and exchange data with end consumers or with citizens.
- i. EGG, a service owned by a business organization to facilitate between government agencies to interact and exchange data and information. The category of IBG, ICB, ICC, ICG, IGB, IGC, ECC, EGB, EGC, EGG yet still does not exist in Indonesia.

7. Conclusions

The proposed e-service classification consists of 27 categories, based on service provider, origin of goods or services, and destination of goods or services. The classification provides clear separation of business actors conducting trading activities using information technology. Clearly distinguished business actor enables authority to set policy, such as tax policy fairly. The classification also can

be used by application developers or start-up companies to work on categories for which e-service applications are not yet available.

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