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MARKET AND MARKET STRUCTURES OF DIGITAL PRODUCTS

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Abstract. Information and communication technologies (ICTs) have revolutionized the changes in all spheres of social life, especially affecting the changes in the economy in which new realities and a new way of thinking have been brought. The use of ICT in the economy has led to a new economic reality that has reflected on major organizational and other changes in business and requires a different way of behavior. By applying the digital economy to business, new economic rules have been created; new business models and new consumer behavior have been created. The significant influence of these changes is reflected above all on changing the perception of the economic role of the market. In recent years, due to the application of digitization in the operations of an increasing number of companies, there have been dramatic changes in the market. These changes have caused the emergence of electronic markets known as electronic market places, which are directly affected by the change of a few "important" processes and functions in business and society. Traditional market functions of the old economy have been replaced by the market economy of the new economy. In the new economy, the market has different functions, it coordinates buyers and sellers, facilitates the exchange of information and payments, and provides institutional infrastructure for more efficient functioning. These changes, in the new market, have positively reflected on the improvement in economic efficiency, lower transaction and distribution costs, and influenced the more efficient functioning of the market. Unlike the traditional market, the costs of digital products and services are different from the new market. Fixed costs of initial investments in the creation of digital products and services are high, while the marginal costs of its distribution are low. This cost dynamics allows a high production volume with lower average (variable) costs per unit, and both types of costs have a special structure. High fixed costs and low marginal costs on the digital product market have important implications for the market structure of the digital economy. The market of digital products and services has all the characteristics of the market structures of monopoly and oligopoly. The monopoly on the digital product market may or may not produce the very best product, but thanks to the size and economies of scale, it has a great advantage over the competition. The formation of prices for digital products differs from the way in which prices of physical products are formed. Some digital products are available free of charge, (free), which implies an alternative option of securing revenue that is necessarily associated with those products. Other, digital products are linked to other products, digital or physical, in order to somehow avoid problems related to their prices. However, the most common way to determine the price of digital products is to use a licensed approach to both sales methods. Regardless of the way prices are determined, it is important that prices of digital products are not formed on the basis of production costs, but into the basis of the values that customers assign to that product. The exchange of products and services between consumers and businesses, unlike the traditional market, is done by the use of a multi-platform platform that plays the role of intermediaries between different user groups.
Keywords: New economy, digital market, digital produce, cost, price,

1. INTRODUCTION

Progress, in the economy, brought a new reality. Large organizational and other changes, which were created by the use of the digital economy, simultaneously influenced the creation of new economic rules, new business models and new consumer behavior. A significant aspect of these changes is the change in the economic role of the market.

The business process in the digital economy is quite different and in many ways it differs from the real world. Instead of producing finished products and services and distributing them, digital business involves the collection, selection, synthesis and distribution of information. So, the digital economy, starting from supply, demand and ending with prices and competition, is completely different from the old or traditional economy model.

2. DIGITAL ECONOMY MARKET

Participants in the digital economy market are the state (government, administration,), economy (enterprises) and consumers (buyers, citizens).

In the new economy, the market has three main functions:

- Adjustment of buyers and sellers,
- Facilitating the exchange of information, goods and services and payments related to market transactions,
- Providing institutional infrastructure that enables efficient functioning as the market.

Similar to the traditional (classical) market on the Internet (digital) marketplace, participants exchange products and services for money (or replace them), but they do it electronically.

The market of digital products and services has all the characteristics of the market structures of monopoly and oligopoly. The monopoly on the digital product market may or may not produce the very best product, but thanks to the size and economies of scale, it has a great advantage over the competition. A classic example is Microsoft, which controls the market for computer operating systems. The oligopolistic market structure of digital products means that there are more manufacturers on the market that offer the same product but in different variations. The most common structure of these markets for digital products is publishing, film, CD and so on. The market is homogeneous, with several large players, often arising from mergers or acquisitions, and whose strategies are pursued on customer locking and retaining competitiveness.

Table 1. Components and main players in the marketplace

Digital produce	All products and services that can be digitized
Consumer	All people and organizations using the Internet are current or potential customers
Seller	There are a number of online retailers that advertise and offer a wealth of things
Mediators	They create and manage on-line networks, help connect sellers and customers, provide certain infrastructure services, and help in final transactions. Most mediators include computer systems, known as e-agents or informers
Support services	These services include addressing implementation issues, ranging from certification and credible services, which provide security to knowledge providers
Infrastructure companies	These companies provide the hardware and software needed to support e-commerce and consulting services
Content creators	The quality of the Internet and the content of the Web sites is key factors of the success of the digital economy and there is a large number of media companies that constantly produce and update Websites
Business partners	Buyers and sellers operating on the electronic market
Electronic markets	Electronic market - exchange with many participants, sales (one seller and a large number of customers) and shopping (one buyer a large number of sellers). They can neither public nor private. Many classic market mechanisms can be used in these markets and most often an electronic auction is used

Author, *according to* Unold, J., Basic aspect of digital economy, Acta Universities Lodziensisi, Folia Oeconomica, 167, 2004

3. MARGINAL COSTS OF DIGITAL ECONOMY.

Production of the first copy (original) of the digital product causes initial high costs while the costs of additional copy or reproduction are low. Fix costs of initial investments in the creation of digital products and services are high, while the marginal costs of its distribution are low. [60] This structure of costs leads to a high production volume, that is, the higher the volume of production, the lower the average cost per unit of product. Fixed and average (variable) production costs of digital products have an individual specific structure. The dominant characteristic of

[60] H., Varian, Economics of Information Technology University of California, Berkeley
July 2001 Revised: March 23, 2003

fixed costs is their irreversibility or loss if it does not continue production. So, the lost costs must be paid in advance, at the beginning of production. In addition to the lost, irrecoverable costs of the first copy or original, there are also the costs of marketing and promotion that are great for most digital products.

A feature of the variable average cost is that they continuously decline, with increasing production volumes. The low variable average cost of digital products allows a wide range of marketing promotions. A digital product is a good one that needs to be experienced in order to be valued by the customer. Just as sellers of new products, such as non-coffee, distribute their samples of street or door-to-door customers free of charge, digital products can be distributed to potential customers via the Internet free of charge. A non-coffee maker must allocate a certain sum of money, for example 500 rsd per customer to produce, pack and distribute its promotional product, while the supplier for the digital product does not pay an additional free copy.

The average cost of making an additional copy at the same time represents the marginal cost of a single copy. If the variable cost is zero, its average cost is also zero, while the marginal cost is small or zero. The marginal cost of producing digital products is near zero, no matter what the digital economy is highly capitalized, digital goods and services can be reproduced in large quantities at zero or quasi zero cost per unit.[61] (Shapiro, Varian,) The low or zero marginal cost of digital products is the result of increased yields, which are a special feature of digital technologies and positive network extensions. This means that the value of the digital asset increases as a function of the network size of adding any additional costs.

4. PRICES OF DIGITAL PRODUCT

High fixed costs and low marginal costs in the digital product market have important implications for the market structure of the digital economy.

The formation of prices for digital products differs from the way in which prices of physical products are formed. Some digital products are available free of charge, (free), which implies an alternative option of securing revenue that is necessarily associated with those products. Other, digital products are linked to other products, digital or physical, in order to somehow avoid problems related to their prices. Also, one way to determine the price is to create an artificial difference in the sub-set of digital products and to use differentiated prices to get the highest possible revenue from each set of customers for the product.[62] However, the most common way to determine the price of digital products is to use a licensed approach from both sales methods. Regardless of the way prices are determined, it is important that prices of digital products are not formed into the basis of production costs, but on the basis of the values that customers assign to that product.

On the Web, different combinations of the listed methods of pricing can often be seen. Sites allow free access and content and charge to other related content.

5. LOW PRICES OR BARTER STRATEGY

If you want to share information on the Internet, receive and send messages of different content of different people and companies, Yahoo, Google and others are offering free e-mail accounts. These companies do not charge their services but collect personal information they use for marketing purposes.[63]

Numerous digital products of the Internet are offered in a free manner. In many cases, a visitor receives a digital product in exchange for personal information used by the product provider for marketing or other purposes. In other cases, the visitor agrees to advertise the product providers in the web browser window.

6. THE SUBSCRIPTION PRICE

If you want to get information about important events in Serbia on a daily basis without buying a newspaper, you can subscribe to the Political website. Subscription is usually time-limited and allows subscribers to access daily news content at any time.

[61] C. Shapiro, H. Varian, Information Rules Information rules : a strategic guide to the network economy , Harvard Business School Press, Boston, Massachusetts, 1999

[62] G., Schneider, ,Digital Products on the Web: Pricing Issues and Revenue Models University of San Diego, USA 2005

[63] D. Momirović, D, Mikroekonomija , PEP, Beograd 2018

A subscriber (client) agrees to pay for access to desired content or to use digital services for a specified period of time. For vendors, subscription is a desirable condition because it reduces administrative costs associated with monitoring and accounting for personal consumption of digital products. The subscription is interesting to the customers because they offer them a simple price list that has a known and specific price.

7. **DIFFERENT PRICES**

Every person that wants to buy a product has its maximum price for that product it wants to pay. This price is known to the buyer, but it is not for the seller. Therefore, when determining the price, the seller estimates the potential maximum price that the buyer is ready to pay and the price of his product is setting low enough to attract a large number of potential customers. The seller, in order to draw the highest possible price from various customers, groups potential customers into several categories and then charges different (different) prices from each category. Charging different prices for the same product from each customer is known as price discrimination. The Web has a great opportunity to apply price discrimination in the sale of digital products. He has his own ability to identify his visitors and to adapt to the experience of customers.

8. CREATING VERSIONS

A digital product version is a good example of price discrimination. For example, offer a product version of advertising or with barely noticeable advertising or in some form of less visible advertising. A version of no or low advertising content is sold for a higher price or is only available with subscription. Many sites sell or rent graphics on websites or in applications offer a small image with low resolution for free or for a low price. Customers can buy more or better graphics or graphics resolutions at a higher price. So, each version is sold at a long price that allows the seller to extract the maximum value of its product.

9. BINDING OF THE PRODUCT

Some digital products may be offered in combination or packages. For example, a music CD does not contain only one song but more individual songs associated with the package. Or newspapers are a collection of political articles, advertisements, sports events, etc. Research has shown that if customer preferences are not homogeneous, the prices of individual items in the package are not close to each other and a significant part of the customers is indifferent to a large number of products in the package, the obligatory linking of the product can give more profit than the product offer separately.

Products offered by businesses over the web can be combined and placed in a complementary package. In the name of the complementarity of the offered package, companies can charge premiums of customers. Collecting premiums on different amounts of different customers is a combination of linking products of price discrimination.

10. MULTIPLE BUSINESS MODELS

Many companies perform their activities using a multi-platform platform. A multi-platform platform provides different products and services to different consumer groups while acknowledging that the demand of one consumer group depends on demand of another group and probably the other way around. [64] From there, it follows that the multi-platform platform plays the role of an intermediary between a different user groups.

In this business model, the dominant group is consumers, who use the platform as part of their everyday habits. The other side, in a far smaller group, is made by sellers, but they are also as important as customers. In addition, the company acts as a platform, selling two different products or services to two different types of customers. On the one hand, it provides free people-to-people services, from where it collects and creates a database with a huge number of consumer data and their habits and behaviors. On the other hand, this information is then used to provide meaningful information to different, existing and potential users, who use them for marketing and advertising purposes. Users obtained the information they receive to create advertisements for their products and services that advertises via face book and which they pay. Both groups of services are interconnected, regardless of their evident diversity and target grouping. This specific relationship between different customer and seller groups is known as network effects.

[64] A. Kockam, How to Asses Market Power in Digital Economy, Radboud Univesitetas Nijmegen, Faculty of Low2017

11. USER INTERACTIONS AND DIGITAL PRODUCT

11.1. Experince

Many digital products are things that customers are experiencing. These things often do not have a meaningful physical existence, separate from experience. Because of this, many of this features of digital products is viewed as any experience or credibility of goods. Unlike a physical object, (pants that can be tasted before buying in a store) a good experience requires the customer to be exposed to the product before it makes a judgment on its quality.

Therefore, vendors are investing additional efforts to devise different approaches to consumers in order to remove any doubts when buying before they find out what you really get shopping. In addition, they do not disclose, just all information, otherwise, there would be no purpose and need to buy complete information. Free samples, promotional prices and recommendations and the ability to browse are ways to expose consumers to experiential products and services. In addition, branding and reputation are good ways for suppliers to increase demand for their experiential products and gain customer confidence.

11.2. Overloading information

The process of information dissemination explains why manufacturers tailor their advertising, targeted advertisers, and target specific groups of customers. Accordingly, advertising works by using statistical forms. For example, people reading the magazine Hot Tires will probably be more interested in Fiat ads, and those reading Real Estate ads will be more interested in buying a real estate in Nis. In this sense, the Internet offers great opportunities and potentials for customizing the seller and customers. Participants in the transaction can achieve their intentions, the advertiser achieves the desired target on the market, while the consumer in the abundance of information, should only provide information that is interesting to him. Additionally, the collection of new and more interesting information about the particular needs of customers provides opportunities for vendors to design products that are more adaptable to customers and which they value more.

11.3. Switching costs

Transfer costs arise when the existing relationships that cause irreversible costs cease and new relationships that require new costs start. Costs are costs associated with individuals and organizations in situations where they change an existing supplier for a new supplier.

Costs and lockouts conduct companies for which information technologies and formats will be decided. However, the advancement of technology with greater and better capabilities, forces companies, if they want to maintain and improve their competitiveness, to replace the old with new technology and new formats. This switch can be very expensive. These switching costs OF ICT can be so high that virtually no payouts are made for switching, which is known as locking. Switching costs can dramatically change company strategy and options. In essence, the size of switching costs is the strategic decision on the system manufacturer itself.

11.4. Network effects (externalities)

Network effects are a feature of digital markets, which is a correlation between the service value and the number of people using those services. Consumers benefit from many popular formats and systems from many digital products and services. When the value of a product or service of a user depends on the number of others, existing users, and such a product shows the network externals. Communication technologies, telephone, internet, e-mail are examples of external effects. Technology under the influence of external effects has a rapid growth trend over a longer period of time. The cause of the rapid development trend is positive feedback; the installed user base increases, more and more users accept it as more valuable. The more users in the network, the product becomes more valuable to each individual.

12. CONCLUSION

The digital economy market does not only affect businesses and the economy as a whole, it also brings about comprehensive social changes. It creates a new demand, new flexible economic structures, manages price changes, restructuring of businesses and types of employment, and facilitates the emergence of a digital generation.

These markets create a new demand that generates new products and services produced by digital technology. With new products, it contributes to the creation of a new demand, which did not exist on traditional societies and widens existing demand.

The digital economy markets allow for flexible economic structures of IT, entry and exit of businesses from the business becomes much easier, with consumers playing a greater role. They mitigate fluctuations in prices and in many countries have contributed to the reduction and stabilization of inflation. In addition, they act affects the transformation of the company's structure creating new jobs and new jobs.

In addition to all of the above, digital economy markets are constantly stimulating digital generations. New generations influenced the production process and at the same time were the first consumers, but also actively

participated in the production and consumption of new products and services and contributed to the development of digital economy through the development of IT.

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