Chapter 2
Internet Economy: Existence from the Point of View of Micro-economic Aspect

2.1 Notion and Sense of the Category "Internet Product"

In our opinion, deeper understanding of the problem of presence of Internet economy in our life could be reached by viewing this phenomenon on micro-level, the simplest exchange item at which has been—from the very beginning of existence of economic relations on the Internet up until now—Internet product. It should be noted that the category "Internet product" consists of two important components: Internet service and Internet product.

Internet service, which supposes Internet provider's providing access to the network for one or another participant, traditionally possesses all "commodity" features, being a limited means—in one case, in the scale of space, in other—in time scale. Based on this, it is possible to say that most of postulated of the theory of limited usefulness and labor theory of cost can be applied to it.

The situation with Internet product is different, as for a consumer it is a result of intellectual and creative activities of individuals in the form fit for transfer on the Internet. Let us pay attention to the fact that Internet product, functioning of which is based on information, differs from information, as the contents of the latter is wider, for it can be taken from various sources. So, Internet product is a computer and information benefit, transferred from one basic station to another with the help of Internet.

Unlike traditional product, Internet product has its specificity expressed in non-material nature; low level of information carrier; connection to its source; unlimited character of distribution and application; exterritoriality; saturation and multiplicity of consumer characteristics; single nature of purchase and multiple nature of use; duration with relative aptitude to moral ageing of information.

Existence of Internet product is not always brought down to its commodity existence. All doubts regarding this issue could be dispersed by viewing the key attributes of Internet product as a commodity—its usefulness and value.

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Usefulness—or, as it is called otherwise, consumer value—of Internet product is reflected in its having the role of a certain resources for various material and non-material objects. Apart from everything else, Internet product is present in the global information and communication environment as an element of the system of stock, commodity, and financial markets.

Consumer qualities of Internet product are not the full totality of information collected in various documents for the purpose of their further application within the search for solving specific problems. Indeed, it is a set of data presented in special formats the work with which allows a consumer to successfully solve the problems of economic, social, psychological, and other directions.

A quality of Internet product, as a commodity, to be viewed is its value characterizing its form under the conditions of commodity-money exchange. However, classic economic theories in their initial form do not always allow substantiating the proportions of commodity exchange in Internet economy.

Despite the above circumstance, commodity and money exchange in exists in Internet economy, as it is accompanied by constant development of real production sector—products in it are created by material resources of a limited character. Moreover, activity of Internet economy is built on the basis of limited labor capabilities—possibilities of a generator or, in other worlds, creator of actual information data. Such a unique resource seems nowadays to be a single case of existence of new value creator in information and communication space of the Internet.

As we see it, Internet product is something that is characterized by non-commodity contents and that manifests itself from the point of view of usefulness. Obviously, if need arises, its form can become commodity one, as at any moment there may arise a need for its exchange for product of commodity sector of economy, based on limited material resources and the law of reducing feedback of production means.

We know already: formation of the initial information material, as a basis of Internet product, takes place by means of processes of intellectual labor object that creates unique content. Indeed, the first copy of the product has high value, which can include separate quasi rents. However, even in such circumstances, Internet product may not be a commodity. For example, this may happen if any Internet use has access to information important for the public, posted by its creator on a free basis.

Product of information content acquires commodity form when the issue of its realization depends directly on the quality of artificial limitation of access to data constituting the its integrity, by means of various tools of online protection (PIN, license, etc.). All of this provokes a just growth of contradiction between non-commodity contents and commodity form of Internet product, which is based on emergence of another form of value of all following copies of information product that have authentic value.

The next issue to be considered is the issue of measuring and final considering the cost of Internet product. Some scholars, including Valtukh (2001), deem it

expedient to measure the cost by the quantity of information data that are to be determined by their rarity.

As a matter of fact, probability that is a part of calculation of information cost of a certain objects as an important calculation component is the value reflecting the level of distribution of this object in the perimeter of a certain system. The offered proofs allow connecting cost not to information, materialized in contents and characteristics of the studied object, but to its popularity or rarity.

In our high-tech age, Internet product, having conquered its niche in the market space, entered the period of their presence in the information world when its cost is determined by rarity that has a load of social direction, as the set cost can manifest itself only in the moment of exchange of electronic product for other commodity items. It should be noted that the above relates only to the initial variant of existence of Internet product, its original form. Its second and further copies are far from the category "rarity"—that's why they crate only appearance based on monopolistic ownership of information benefit.

Based on the fact that the second and further copies of the original Internet product are not rare due to simplicity of their distribution, it is possible to state that Internet economy influences not only the law of cost but the law of reducing marginal usefulness. In the analyzed reality, its work looks differently: both marginal usefulness and value of Internet product, treated as addition of new useful information data that appear in the basis of new knowledge, increase with growth of the number of users who want to possess it.

It should be noted that each new Internet user influences the increase of usefulness of the known information and communication space for other participants. At that, the Internet benefits as well, for such changes lead to growth of its value. However, this process is peculiar for its non-linear character. This was a matter of interest for Metcalfe (2013), who invented localized network technology. In early 1970s, he came to the conclusion that in order to possess the network value it is necessary to achieve critical mass, but small networks of local character that together create one large network start to increase their value with large force.

Results of Metcalfe's observations became a cause for formulation of the law called after him—according to it, value of any network space is an equivalent of the square of connection nodes for its participant. Thus, usefulness from connection to network space grows by exponent due to increase of the number of its components. There are statements that this law decreases the real level of growth of network value, which is really larger.

The Metcalfe's observations consisted of the idea of existence of a telephone network which enabled to individuals to have connection, which meant the following: total volume of potential connections in this case had to depend on the object of paired connections in the network. However, existing networks allow for connection with three and more participants—so, their value grows much quicker.

Let us add: positive effects from functioning of network and non-linear growth of its value show themselves not from the beginning but from the moment when it reaches so called critical mass. In our opinion, this decisive moment already

happened in Russian and foreign practice. The Internet is very popular with the inhabitants of the Earth.

Speaking of the problem of determining the value of Internet product, it is necessary to remember the issue of its life cycle. One should remember that duration of life cycle on the whole and its separate cycles depend on the commodity item and on market space within which it is realized. Raw materials are peculiar for longer life cycle, while final products are peculiar for short life-cycle. At last, high-tech products have a whole life span due to quick moral ageing.

Life cycle of information data as a commodity could vary due to various levels of actuality of their content in a wide range: from ages to several second. On the whole, the main difference between life cycle of Internet products and classic product is their duration that in the first case depends on the importance of information on the Internet. At the same time, there is a growing problem of contamination of Internet space with undesired commercial and non-commercial information that create too much load on channels of telecommunication connection. Such situation leads to aggravation of contradiction of information excess between the large volume of undesired, even virus, content and lack of necessary and useful information.

It is easy to conclude that information, which at present is a specific type of resources, production factor, and public improvement, is a special type of product that possesses relatively expressed commodity characteristics. Obviously, domestic and foreign information markets are multi-level and dynamic environments. This could mean only the following: intense use of leading technologies will allow them to differentiate by means of genesis of new needs of society (2).

2.2 The Nature of Mutual Functioning of Demand and Offer in the Market of Internet Goods

The fact that Internet economy became an actively developing sector of any self-sufficient country's national economy is not surprising—nor that the services provided within it acquire mass character.

In view of such circumstances, it is expedient to pay attention to one of the elementary types of economic interaction that take place on the Internet—namely, exchange of products and services from the point of view of the mechanism of demand and offer, price and competition, which form it.

As was mentioned, scenarios of economic relations that emerge on the Internet sometimes do not conform to traditional economic laws. This is really true: usual models of demand and offer that are fit for analysis and description of market mechanism of pricing in the market of standard economic benefits can be unacceptable for studying the market process that take place during exchange of information commodity items.

The classic economic theory is based on the principle of decreasing feedback of production means that manifests in the conditions of resource limitation. As a rule,

it is not necessary to explain the sense of this statement to people with average level of economic knowledge. However, there could be differences regarding its universality in even in serious scientific circles. For example, representatives of neo-classic school refuse the applicability of this principle to conditions of modern development of economy. It is necessary to note that Marshall (1923), who set the foundation of the existing economic system, presented three possible states of production with three corresponding situations—situations of constant, growing, and decreasing feedback of production means.

In the situation of growing feedback, it is possible to see practical coincidence of the offer curve with the demand curve.

If the resources are unlimited, being valuable information, the balance point of demand and offer will strive for zero value of price. Such state of economic circumstances brings society to communist state that supposes that the main technological dominant is human with all his intellectual and spiritual capabilities.

As was mentioned above, in the process of improvement in the global scale the Internet network overcame a specific critical point, which allows stating that further interest will lie in the situation of emergence of demand for the first copy of Internet product, the price for which has reached its maximum. At that, with growth of the number of copies of this product, the consumers' wish to pay for it will reduce.

Here comes the contradiction: increase of the network volume leads to increase of usefulness and, this, value of the Internet product, but the price of a single copy reduces. In reality, not everything is as it has seemed at the beginning: total usefulness and value of the Internet product strives to growth, and relative, or marginal, one—reduced during distribution of a large number of its copies. Still, in the period of domination of monopolistic ownership for information data, such dependence takes somewhat different forms. Actually, there is aggravation of the main contradiction of Internet economy's relations between non-commodity content and commodity form of information product.

This process is vividly expressed in the action of the pricing mechanism. According to Sakaiya (1991), price for any product, which technical qualities are unique, will exceed its cost. The researcher notes that there could be no clear connection between prices and basic expenditures for spent materials: manufacturers are able to fix prices at the level that exceeds the cost of the issued products by two-three times, which allows calling their elements the formed knowledge of cost.

But how is it necessary to act within pricing when there's a clear lack of any connection to expenses? T. Sakaiya has a reply for that, as well. According to him, in this case the issue of price formation should be assigned to consumer's idea of "just" creation of price tags. It is necessary to realizes that apart from expenses, there is a specter of other factors that form the buyers' understanding that a certain price is "correct". Of course, an important components of this equation if the price for alternative goods. Apart from all else, social ideas of common sense win. Advertising events and consumers' reviews at various information and communication platforms, expressed by the objects responsible for formation of public opinion, are also important. Sometimes, according to T. Sakaiya, the role of

elements of changes is important—as cost, formed by knowledge, is a temporary phenomenon. Thus, T. Sakaiya prefers coming to the following conclusion: from one case to another, price for a specific product might be much higher than the volume of means spent for its production. The difference exists as a result of consumer's ideas' activities.

We think that such reasoning is doubtful as the proofs given within them are based primarily on psychological, not economic, aspects of formation of prices for information products. No one tries to deny the possibility of Internet product's price's being higher that its cost. The true reason of this phenomenon lies in the limited regime of consumption of information products, artificially supported by the most influential IT corporations, and the process of unequal exchange that is based on private monopolistic property for information data.

One of the main peculiarities of the procedure of market pricing in Internet economy is that real pricing takes place not in the production sphere but in the sphere of realization of final products in the market of incomplete competition. Change of the pricing characteristics of Internet product usually faces the artificially created monopolistic limitation and legal acts related to the issues of protection of copyright and intellectual property. Such state of affairs give the owners of information products the chance to receive monopolistic excess profit as a result of realization of Internet products that they control with licensing.

Let us add that pricing for various types of information goods comes from analysis of profitability of the offered information data and market situation. The final result of the process of pricing depends on such factors as expenses for development of product's information content, level of quality of offered data, and expected demand. Apart from that, price for information in entrepreneurship could be calculated on the basis of the following: volume of unextracted profit—due to shortage of commercial data; volume of possible loss from rivals' applying commercial information; volume of profit that company may have in case of possession and further use of commercial data.

It's high time to present the authors' idea of formation of cost and price for information data. It is considered that price should be a reflection of value of a certain copy of information product. Thus, cost and price of the "source" are kept at a high level, which is explained by rarity of intellectual labor expenses used for its manufacture. Cost and price of the second and following copies will decrease proportionally: there's clear logic in that. The larger is the differentiation of unique and demanded information in a specific sphere, the lower is its cost and price that strive to cost and price of the source or time traffic of the Internet use. Thus, the main contradiction of Internet economy is liquidated: with multiplication of Internet product, it gets rid of its commodity form and approaches its non-commodity content. Despite all this, realization of the procedures of establishment of prices in information economy is still far from its ideal.

We have a right to expect that first demand for a new Internet product will exceed its offer. Due to such circumstances, selling the first item of the Internet product for maximal price seems plausible. Later, when the market enters the stage of relative saturation, the price for the Internet product will approach the balance

level. However, in real life, price for such products is the average between its high level and the balance level. Obviously, it is a pricing characteristics of the license-protected copy of the Internet product that includes, apart from expenses for copying, money assessment of the copyright and objects of intellectual property of the author.

In practice, manufacturer's monopolization of the issued product, which allows putting a high price, is predetermined by active use of laws on protection of copyrights and objects of intellectual property in this sphere. But even under these conditions, the total profit of the manufacturer would be a share of the possible profit—for the price for a licensed copy of Internet product is lower than its possible maximal price that could seem acceptable even for the richest buyer. Thus, consumer profits are also present in the system.

There could be a situation when pricing in the market of Internet products is different from our expectations—this non-standard situation is created by active involvement of manufacturers of counterfeit products on the Internet. In this case, the initial point is the price consisting of the cost of the material carrier and expenses aimed at distribution of the Internet products' copies. Any price that goes beyond the limits of this level is an obvious profit for so called "pirates".

The viewed circumstances suppose existence of two balance points that symbolize the balance in the market of licensed products and the market of counterfeit products. Not every consumer can but a license product. Obviously, each category of the population has a certain level of expression of buyer's capacity. In view of the above, the demand curve changes. It transforms, turning into a broken line, or divides into several lines, each of which is related to a certain theory of payment capacity. The result is that licensed products suffer from decrease of demand for them—which leads to decrease of the volume of their manufacturer's profit, as at some point its significant share starts to go in the hands of counterfeit's manufacturers. At that, strangely enough, "pirate" activities have a positive side—for the price set in this market is closer to the notion of "justice".

Besides, consumer also receives additional advantages from purchase of unlicensed products: he can have a part of production excess of owners of the licensed copies of information product. Probably, in the near future the leading manufacturers of Internet products will face the problem of effective solution to the problem of holding the positions of their economic domination. Also it may happen that we will witness the decline of current giants of the IT sector—which will be preceded by quick reduction of their capitalization and probable bankruptcy.

2.3 Emergence of Losses and Receipt of Results from Activities of Internet Economy Participants

Over many years, scholars have strived to explain the sense of production and exchange relations, using such categories as production factors—in particular, labor, land, and capital. Once, the great economists Sombart (1930) and Schumpeter

(1939) decided to supplement this range by another position—so called "entrepreneurial capabilities". Still, the dominated position is held by analytical approach to studying the state of economy, within which a special attention is paid to various combinations of labor and capital in the form of labor theory of cost, and the value of knowledge and organizational innovations in management is diminished. However, the conditions under which working hours are reduced and functions of laborers' productions are partially liquidated lead to understanding the fact that knowledge and certain aspects of their practical use can substitute labor as a source of value added. In this respect, labor and capital are among the central economic categories in industrial society, and information and knowledge became the main notions of post-industrial society. Bell (1973) said that when knowledge—in its structural form—becomes involved into practical processing of resources, it is possible to consider that it is knowledge, not labor, is a source of cost.

At present, there could exist other multi-factor models that emphasize the process of increase of the value of technological and information components of production cycles. Some of the still living economists think that scientific and technical progress, which supposes appearance of new types of information technologies, gives the countries with developed economy of industrial type ca. 35% of economic growth—the rest accounts for labor and capital.

Speaking of information resources, it is necessary to note the fact of their quick evolution. Thus, Gilder (1979) was deeply interested in elements constituting the processes of their development—he considered himself to be a representative of the radical technocratic direction of economy and thought that each dozen years the society would face the total reduction of prices for information and communication technologies. Such course of thoughts led the author to the following conclusions: prices for information and technological resources strive to zero.

Indeed, the cost of production of a commodity item of a certain type becomes so low for the subject that sells it that buyers can feel the cost of consumption striving to zero too. Eventually, all of this could be seen in the "Galder curve": price strives to zero, but it can never reach it, for there is a specific minimum price of purchase of a certain information product.

It is clear that manufacturers try not to lose a chance to sell a product for a maximum price. Of course, it is a vivid proof of our statement on the domination of monopolistic discrimination in the market of Internet products.

At present, neo-classic or marginal methodology allows building the graph of marginal cists of information product. At an especially high level, these costs are set during the initial issue of a commodity item. On the whole, the costs related to the product of information character are actually intellectual and labor expenses of creative persons that are expressed in the above products which would be further placed on various types of information carriers or on the Internet.

The costs relate to network benefits differ from the costs peculiar to traditional products. Thus, the main share of costs that account for manufacture of an information product "works" directly at the stage of creation of its very first copy. This means that the gap of disproportion lies between costs of manufacture of the first copy and its following copies. At that, we will deny the chances of reduction of the

level of marginal costs as a result of functioning of the saving effect on production scales. The classic theory of economy is based on the law of diminishing returns that substantiates the nature of emergence and existence of many phenomena of economic world. As a matter of fact, information products are not subject to this law. Or, at least, they are peculiar for growing returns in the mid-term and long-term. Thus, sectorial spaces, within the perimeter of which the information products are manufactured, face huge possibilities for participation in the procedures of exploitation of the scale effect.

It is easy to guess that the issue of growing returns was interesting for scholars in the past as well. For example, a well-known representative of neo-classic A. Marshall studied this problem in the spheres where the effect of saving on the production scale could be observed: railway, natural gas production, etc. However, uniqueness of information benefits consists in the fact that profitability grows due to a special structure of costs that account for production of them. Here, the effect of saving on production scales is peculiar for two things:

- unlike the case with the traditional products, in which the work of the production scale effect is gradual and linear, in case of information networks their value grows according to the exponential very quickly;
- then—if the effect of saving on production scales in scenarios with common products is the achievement of self-sufficient organization that could reach it, under the conditions related to Internet products, growth of usefulness is achieved by usual, but multiple, users of the network space. Their multiple character allows the possessing that which we have in this regard.

Recognizing the probability of expenses due to appearance of more perfect variants in the long-term, it is possible to conclude: sooner or later we will witness vivid reduction of prices for goods the process of which requires serious intellectual costs, leading to substantiated reduction of costs as such in the process of prices formation. All of this will lead to decline of the role of offer, formed by marginal costs, and, correspondingly, to actualization of the role of demand.

Stewart (1997) found a lot of differences between contents of cost of knowledge-intensive products and structure of cost of material that received material form. A large share of costs is directly related to the preliminary stage of production—i.e., cost of creation of the first copy of information product and its following copies are connected by disproportionate dependency. So, the lower is the level of product's materiality and the higher is the level of its proximity to real knowledge, the larger is current period's costs' distance from marginal costs. In reality, costs of creation and distribution of electronic copies of a certain documents on the Internet could be compared to an electric spark—though, the cost part in these processes accounts not for the product's recipient but for its manufacturer. Let us remember that manufacturers of industrial products strive to accumulate costs at the initial stage of production with the increase of the volume of their information content. Costs aimed at conduct of R&D and scientific measures during production of various technical items manifest their growth of direct production expenses.

With appearance of the second copy of the information product, marginal costs that take place within its production start reducing to the level of the licensed copy creators, and then—to the level of the counterfeit's copy creators. Of course, there is certain connection here: in the first case, the totality of expenses includes payments to owners of intellectual property. When we speak of counterfeit, we mean bringing down expenses to the cost of cheap information carriers and small costs of distribution of copies on the Internet. At that, the level of initial costs is very low, for creation and further distribution of large volumes of copies require only one information carrier that could be bought by the subject of illegal activities from the legal creator or from a representative of the "illegal world". It is quire probable that the quality of the copy won't be worse that the quality of the original.

Here comes another conclusion: any price, the value of which at least slightly exceeds the volume of marginal costs, poses profit for manufacturers of information counterfeit. The creator of original product will seek the profit in the prices that is higher than the average costs. Despite this, price should be based on just foundations, or, in other words, fully reflect the cost of information product. Otherwise, the circumstances at which the largest IT suppliers are good with growth of prices for products, substantiated by the necessity for protection of copyright, are a driver of aggravation of the primary and secondary contradictions of the network economy. An effective solution in this case could be limitation of realization of licensed copies of information product by either establishing strict time limits or setting certain requirements to quantitative content of distribution of copies, which will allow encouraging intellectual and creative efforts of people that create them. Later, the price for information products will strive to the indicators reflecting the cost of their barriers. Another variant of events: products will be distributed on a free basis, which plays an important role in fighting the phenomenon of intellectual "piracy".

Mutual estrangement of commodity items that are manifestations of average labor costs is replaced by the phenomenon of distribution of costs. The larger is the circle of persons interested in consumption of information resources for the purpose of desobjectivation, the larger is the total volume of unit costs used for their production.

Thus, the price after the end of the relevant period should transfer from the level of the price for a licensed copy to the level of material carrier copy or Internet traffic, and then "bring itself to zero"—i.e., stop at a zero level. The resulting profit of licensed products' owners will become a good bonus base for their developers and manufacturers.

Again, one of the main contradictions of the network economy, strangely enough, is manifested in institutional traps. For example, one of these is popularization via the Internet of software, effective functioning of which requires corresponding compatibility with other programs. At that, initial distribution of information products via the global information and communication network could be absolutely free—however, in the future periods the consumers will have to pay for the consumers IT products—and pay a lot. In case of strict observation of the rule of "just" pricing in the "new" economy, such trap could be easily avoided—except for the relevant period.

Based on the above, it is expedient to pass to conclusions on this part of the work.

Conduct of various events for studying the processes of development of Internet economy at micro-level supposes their organizers' realizing the fact of presence of significant differences between Internet service and Internet product. Thus, the former, being a usual commodity, is limited by time and space limits. Internet product does not always have to have a commodity content. Its consumer cost consists in its being applied as a means for creation of other commodities of material and non-material world.

Value and cost are the main characteristics that present Internet product as an item of the system of monetary exchange that continues existing in our days due to presence of a wide sector of material production and using in Internet economy the intellectual labor—very rare and useful resource. At that, traditional theories of economy—labor theory of cost and theory of marginal usefulness in their original form—are not always good variants for substantiating the sense of product exchange processes in Internet economy. Moreover, other theories of cost (energy, information) are not good either.

Product of information content acquires commodity form when the issue of its realization directly depends on the quality of artificial limitation of access to the data constituting the integrity of such, with various tools of online protection (PIN, licenses, etc.). All of this provokes just growth of contradiction between non-commodity content and commodity form of Internet product, based on appearance of the transformed form of cost of all copies following the first copy of information product.

Thus, relations of Internet economy is a system of quickly developing interactions, which is something larger than a phenomenon that goes beyond the power of the main economic laws: cost, marginal usefulness, demand and offer, and diminishing feedback of production factors.

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