

# Globalisation and knowledge economy

## *Globalizace a znalostní ekonomika*

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**Abstract:** The article stresses the importance of information in the contemporary globalised world. Quantitative technological changes, which influence substantially the world economy, have always been very significant in the history. There are characterized the changes of the production factors as labour, capital, land, information on the world level. Information and knowledge are the most important parts of capital at the present time, since they are the main source of wealth. Information is by its substance very specific as an absolutely non-tangible commodity, which acquires a tangible form only through its bearers (media containing information), eventually it materializes in the performance of people who dispose of the information (in their knowledge).

**Key words:** information, knowledge, globalisation, labour, capital, land

**Abstrakt:** Příspěvek podtrhuje význam informací v současném globalizovaném světě. Kvantitativní technologické změny, jež významně ovlivňují světovou ekonomiku, měly vždy v historii mimořádný význam. Charakterizovány jsou zejména změny produkčních faktorů, tedy práce, kapitálu, půdy a informací na celosvětové úrovni. Informace a znalosti jsou hlavním kapitálem dneška, neboť jsou zdrojem bohatství. Informace jsou velmi specifické svou podstatou jako absolutně nehmotné zboží, které nabývá fyzické podoby pouze pomocí svých nosičů (medií přechovávajících informace), popř. se zhmotňuje ve výkonech lidí, kteří informacemi disponují (v jejich znalostech).

**Klíčová slova:** informace, znalosti, globalizace, práce, kapitál, půda

Globalisation represents a phenomenon entering almost all the spheres of human activities, so that it cannot be described through the prism of a single scientific branch, even if so widely extended as for example economics. There exist many aspects, which are obvious and can be followed with regard to many seemingly not connected scientific branches from the almost opposite poles of the social science spectrum (economic and political, social and cultural).

There is also offered connection with the wide scale of technical sciences, since just the development of technologies supports and even directly conditions the origin of the later acceleration of the globalisation processes. In thinking on globalisation, there is obvious an endeavour for as wide understanding of the problematics as possible, however, different individualistic approaches and attempts on a transcendental searching are, in its philosophical depth, loosing the contact with the real world. On the other

side, there occur interesting contacts on the border of the individual scientific branches, erasing of the borders between the individual scientific disciplines or, in some cases, there are emerging even new sciences and scientific branches.

Another appropriate example of the discipline modification in connection with the globalisation trends is the global marketing, which approaches the world market as a single, even if highly differentiated, trade space. Nevertheless, the necessary generalisation, in this approach, connected with the necessity of unification namely of communication (but also of other marketing tools), presupposes the issue in unification and universalisation of the consumers needs, value scales and cultural paradigms.

In the static approach, globalisation can be regarded as the system of individual elements and the interrelations among them limited namely by its size. If the amount of the mutually interconnected relationships

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overreaches a certain level, there occur unpredictable reactions to the originated impulses. Globalised economy disposes of the adaptation mechanism, which gives it the ability to react, on a large scale, to the coming changes with a sufficient speed (Jeníček 2003).

As an example, it is possible to use the long-lasting consequences of some political changes, when the reaction to a local impulse (a support of another country regime in the media) gats its own, perhaps even too exaggerated, scope on the international level, in the consequence of which there are further influenced individuals (decrease of the production enterprises demand, the necessity of restructuring.). It is impossible to estimate beforehand, how each impulse will be demonstrated on the world level, neither how its impact will change on the way to the local economy.

From the viewpoint of the relationship development, this process could perhaps be characterised as a further stage of the international economic integration, when the scheme of the system built on the individual states or their integrations economic units ceases to be valid and the world economy becomes a single interconnected unit. To globalisation, there were in a way connected all the historical breaches supporting development of international trade and the growth of interconnecting or even dependence of the individual territories, the origin of international economy as a single economic unit. Namely during the last 20 years, in the period which originated in the structural crises of the 70s, there occurs the still higher economic and financial integration, probably having been started by these shocks. Structural crises, which by their impact overreached a single region, were one of the first integration impulses in the modern economy (Kofmann 1996).

## STRUCTURAL-TECHNOLOGICAL CHANGES

The system of the world economy was originally rather strictly hierarchically structured, consisting of economic units and their mutual relationships. The individual units are undergoing their own development in time and their importance is changing. Of key importance is the structure and number of their relationships, which undergo a quicker and more dynamic continual development. In certain periods, there also occur deeper, time-limited changes, which change the character of the system as a whole. The Kondratiev theory from the 20s of the last century (even if the original idea is still older) characterises the world social system development as a periodical

process divided into waves, each of them lasting approximately 50 years. Each wave has four basic phases – conjuncture, recession, depression and recovering. Each of these development periods is also rather closely connected to a certain structural change of the technologies, which influenced the whole system crosswise all its parts.

The first wave was closely connected namely to the steam engine utilisation, with the technological and material changes of the textile industry (automatic weaving looms, processing of cotton) and the production of iron. The second wave was connected to the new metallurgy technologies, the development of transport infrastructure and the boom of railways. The third one was tied to the discoveries in the frame of chemical and car industry, with further development of transport and therefore also the improvement of infrastructure and, last but not least, also with the development of energy industry, which was also a new branch at the time. The fourth wave was then connected, in the field of technology, with the new synthetic materials, the discoveries in petro-chemistry but namely with the development of electrotechnics and electronics and the related branches, as cybernetics etc.

According to some authors, the world is now on the threshold of another such development wave, which will be obviously in the sign of the information and knowledge society.

Period	Technological changes	Geographical centre
1	Steam, textile industry, iron	Great Britain, France, Belgium
2	Steel, railroads	USA, Great Britain, Germany
3	Chemistry, energy, cars	Germany, USA, Switzerland, Netherlands
4	Petrochemistry, synthetics, electronics	Japan, Sweden
5	Informatics, micro-electronics, telecommunications	USA, Japan, South West Asia

With the world economy development waves, there are also connected the economic centres, which set the direction of the economy development in the given period and which were the main bearers of the ongoing changes:

With the last above mentioned development wave, there changes the world economic system from the original oriented hierarchic structure to another, qualitatively different type of a certain multidimensional interconnected complex. Horizontal ties of the originally not interconnected elements are in some cases overgrowing the original hierarchical chains by

their importance and economic weight and are becoming the decisive characteristic of the present world economy. A typical example of such interconnections are the trans-national companies, which exceed even a middle-sized states by their outputs.

Of course, the development did not proceed with the same dynamics in all areas of the world. Defining of the global North and South issues from the fact that in most economies, the transformation towards the more modern structures of the economy (AIS → IAS → SIA) proceeded historically sooner in the Northern territories, where worse climatic conditions pushed even since the ancient agricultural society the local economy towards a higher innovation potential.

The accelerating development has, namely during the last 50 years, further exposed these differences, the efficiency drops in the Southern, traditionally agricultural and later on industry-oriented territories entered the play, followed by the employment problems and social pressure. These tendencies can be followed also on the world level, even if the geographical division of “South” and “North” is already a rather symbolic one. Generally, it can be stated that the present economic centres (in a simplified way, Europe, North America and East Asia) represent the “global North”, the territories with a high average level of value added, they are capital exporters and the bearers and formers of a higher number of the globalisation processes. Theoretically, these territories should prevalently profit from globalisation, since their economies as well as labour are oriented and relatively well prepared to adapt at the multiple changes of which they are in many cases the initiators.

At this point, it is useful to note that, on the theoretical border of these centres, there is also found a large group of the “emerging markets”, which are at least of the theoretical chance to take an honourable place in the (for the aim of this analysis) so divided world.

On the other hand, the “global South” could be defined as the former colonies, namely most of Africa. Some of the regions or states are of course of a special position in this aspect (China, India, Russia) because their potential is enormous; for example in the case of China, there cannot be neglected either its growth potential or the fact that in the past it belonged to the world economic and cultural centres.

In the individual segments of the world economy, there can be followed changes the main trend of which is going on for several decades already and which are further accelerated and supported namely by the technological development and social changes during the last period.

## **FIRM**

One of the most important segments of economy has always been and obviously will be also for some time in future the firm. Firm as a complex of relationships among the subjects of a lower level, as a process transforming inputs, as well as an element of the market system looking from the upper level. Firms started to origin already in the primary periods of the economy development from the reason of the growing specialisation of economic activities and the endeavour of its higher efficiency.

As the transaction costs, there were in this sense perceived all obstacles which the strictly market organisation sets before the subjects functioning in it. They are the time disproportions connected with seeking the business partner, bad decisions costs, which necessarily occur in the process of selecting the co-operating subject, the system is generally non-efficient because of the costs connected with firms leaving the market and entering it, all firms are weakened by the competition fight. It is obvious that the theory reacted to the contradiction between the real world and the distant model of the perfect competition theory, because no firms will have to originate, if all the prerequisites of perfect competition were fulfilled and applied at the level lower than firms. All the subjects, who later on form a firm, would have perfect information, their communication would proceed without any obstacles and thus nothing would push them into merging into firms and thus giving up a part of their freedoms. However, these prerequisites of the neo-classical theory of firm cannot be well enough realised in this real world. The main obstacles to it are namely (Minc 1993):

- non-rational behaviour issuing namely from the impossibility to get the perfect, timely and precise information, and also from the different motivation base the market subjects
- opportunity behaviour, which hinders the maximum efficiency of the market as a whole since the acting subjects are following primarily their partial interests.

## **TRANS-NATIONAL CORPORATIONS**

The integration goes on the vertical (connecting of the logically subsequent distribution chains) as well as on the horizontal (origin of big companies on the same level of input-output relationships) level, and in some cases it overreaches both the borders of national states and of the continents. In the 80s, there is for the first time mentioned the transformation of

international firms, which had simply functioned in several states by the form of affiliations or branches, into trans-national firms. A trans-national company (TNC) behaves as a single subject in all the economic territories it acts in and allocates resources for their maximally efficient utilisation without regard to practically anything else (meaning any geographical, cultural or other barriers). In such measure, the firm manages to internalise most of the originally external, and thus not manageable, processes and to be more efficient. A very basic attribute of the change of firms as economic subjects is also their still less obvious ownership. Corporations of such size can hardly be owned by individuals any more and the distance of the personified owners from the problematic of the firm management is so great that there occurs the dissolving of their influence by transferring the decisive power into the firm structures.

However, the origin of the TNCs is not the only application of the presently ongoing changes in the market subjects field. With the growing influence of information technologies in enterprising, there will probably occur a certain bi-polarisation in the sphere of firms, where on one side there will be just the global firms the influence of which reaches long and wide, and on the other side, there will be a certain form of small, highly specialised firms functioning with minimum costs in the environment of the global information net. The fact that these small firms will have almost no outside physical phenomena (offices, stocking places etc.) will give them the advantage of an enormous flexibility in reacting to the needs of their customers and to the market development, it will lower the costs of their origin as well as of their eventual liquidation.

Neither will the present functioning management structures stay without change face to face with the technological innovations. There can be supposed flattening of the pyramidal management structures, lowering number of the management stages and a high level of the working processes management automation.

## MARKET

During the last years, there also occur substantial changes in the development of markets, and that both from the qualitative as well as quantitative viewpoint. In the structural outlook at the market as a multiple of subjects with mutual interrelationships, we can see, besides the above mentioned change of these elements, also a substantial change of relationships. With the scope and volume of the big TNCs production, it is

impossible to define well enough, either territorially or from the product viewpoint, the sphere of their functioning, so that there occurs a mutual influencing on all levels of the hierarchy.

The measure of the competitive potential of these contacts changes rapidly with this level. While on the top level it still regards a fierce fight, the lower components really creating market values are facing the daily reality in the form of many types of co-operation with the originally competitive subject, where in one business case it really regards competing firms, but in several other cases it regards different types of mutual sub-sales and, not in the least, also a direct co-operation.

One of the decisive changes of the present market is the so-called "turbulence", which could be described as a state when the amount and velocity of changes in the system changes it from the dynamic into a chaotic structure. The trends cannot be even approximately prolonged and there is no mention of any more precise forecasts. The "turbulent time" is one of the very often-mentioned terms at present, which is incorporating just the mentioned phenomenon. Up to now, the velocity of the development and of the market changes is not by far slowing down and namely in the sphere of information technologies, the further acceleration is very obvious.

## PRODUCTS

In the same way in which almost everything is changing in the present world of market relationships, also the produced and sold product is changing. Of course the trend is to unify the products as much as possible in the costly key properties and afterwards to adapt them maximally in the cosmetic adaptations, which cost relatively less. This trend is aided by some non-economic trends, for example the global culture trends etc., which enable the unification of purchasing and consumption habits.

Another obvious trend is the fact that the tangible product is of a much shorter life-span, since it becomes, owing to the massive development of technologies, much sooner morally obsolete in almost all branches. This property is already taken into consideration in the product; commodities are already projected with the life span limited to the necessary minimum. Consumers (without regard whether individuals or firms) then have no chance to sustain with the sufficing product, even if their demands for it is functioning have not changed.

The worldwide trend is the increasing share of services in the total generated product, what brings

about certain interesting aspects. Services, what in many cases regards services connected with information, therefore services not demanding the physical presence of the user, are relatively easily distributed and also their accessibility using modern telecommunications makes their use very comfortable. On the other hand, services cannot be stored, the product cannot be produced “on stock”, the demand for them asks for an immediate reaction. And vice versa, there is an increasing demand put on the “producer” of a service in the area of a flexible reaction to the demand and the changes in the customer’s preferences. Globalisation is also followed by the changes of production factors.

## LABOUR

Labour, or better transformation of the working power, issues primarily from the demands put on the firms and their products. An ideal worker of today is therefore cheap, accommodating, mobile, learning and knowledgeable. It issues already from this list of qualities, than it is not everybody who fulfils the criteria of present time. The problem originates with seeking job opportunities for the otherwise disposed individuals, who can find job with a still greater difficulty. From the viewpoint of the demands on the knowledge of workers, there is obvious the tendency to a high specialisation since there is an enormous amount of information regarding every sphere of activity and it is therefore very difficult to manage even just one specific part of the problematic. However, on the other hand, specialisation creates problems with the demand of a complex view on the given problem solution and increases the demands on the additional acquiring of knowledge, since the more narrow is the field we aim at, the more profound is the impact of the external conditions change.

The life-long education becomes an non-disputable part of education policies of all developed countries and it is understood also as the necessity to support in people since childhood the understanding, that no acquired knowledge is definite, that it becomes obsolete with the change of conditions and that the continuing education process is a completely natural part of the personality development.

## LAND

Land is the least mobile and adaptable production factor. Land can be considered as the multiple of natural resources in general, since there can be

followed in them a relatively specific characteristics. Natural resources are strongly geographically tied to the place of their existence and to the state, which controls the given territory; they supply a certain competitive advantage. Natural resources and therefore also land are not to be well manipulated, they can be traded only partially and in a limited way. Equipment with natural resources is still also a relatively highly followed indicator of the strategic importance, which limits to a certain extent the power of the given economy.

One of the characteristic features of natural resources is their quantitative limitation and, in most cases, their technologically impossible substitution. The key natural resources are at present fossil fuels, namely oil and gas, the stocks of which are still decreasing. Notwithstanding the discoveries of new and better mining methods, which in the short-term horizon give the illusion of the almost unlimited world stocks, it is obvious in the long-term, that they still will once become exhausted.

## CAPITAL

One of the limiting features of the present world economy is namely the time and spatial transformation of capital (as the most important production factor of the present). Owing to the interconnecting of the operations in the individual financial centres, the time-demanding of even the enormous capital transfers is decreasing and capital becomes almost absolutely mobile in time, what gives its owners the possibility to react to the world market changes without any significant delay. Besides the development of technologies, the capital mobility was enabled also by financial derivatives, which are financed afterwards and thus accelerate financial trade in general. From the spatial or territorial viewpoint, capital moves to the place where there is a higher efficiency of the other, less mobile (or practically immovable) production factors utilisation, that is, in the present understanding, namely labour. Most production thus moves to the regions with cheap labour, namely to Asia, which thus becomes the recipient of capital and supplier of labour and other production factors.

At present, the original territorial division of capital fails and it is not possible any more to speak of the relevance of capital, and thus neither of the big firms belonging to the “mother” states, since the capital according to which the relevance was originally allocated is extremely mobile and in many cases it is territorially totally outside the area of the state of the original owners. Even if some firms have directly in

their name the nationality (British Airways, Český Telecom), their connection to any national economy is rather symbolic.

## KNOWLEDGE

It can be said at present, that there is added one more to the traditional production factors, which is just information. It is a relatively new phenomenon, which will surely cause changes in economic theories in future. Information is by its substance very specific as an absolutely non-tangible commodity, which acquires a tangible form only through its bearers (media containing information), eventually it materialises in the performance of people who dispose of the information (in their knowledge).

From the general information theory, it issues that it is in terminology important to differ among data, information and knowledge. Data are certain description of the environment, a mere collection of facts. Information regards such data, which lower the level of the recipient indeterminateness. They are therefore evaluated subjectively; some data can represent information for somebody and not for somebody else. Knowledge is the highest form of information, it originates by the derivation of the before received information, it is the result of active psychical activity.

## CONCLUSION

The importance of information in the present world is still growing and some authors (e.g. Druckner 1993)

regard information and knowledge as the only relevant capital of the present time, since namely they have become the main producer of wealth.

The level of information and the possibility of the mutual influencing of subjects is so high at present that it is not very complicated to get the world economy into a relatively non-stable state, and that e.g. by the periodically repeated speculation operations, which in total can in the end seriously endanger the stability of world financial markets etc. It is obvious namely during the last ten years (e.g. financial crises the centre of which was in the East-South Asia in the mid-90s), that the management or at least the control of the world economy as a whole could add to the lowering of the risk of crises. Regarding the problematic of institutions and institutionalisation on the world level, it is already obvious at present that the negative development in many areas (namely regarding environment, but also other global problems) does not bring about the perspectives of improving the present state or even of reversing the development in the positive direction.

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