

## Developmental and Technological Restructuring for the Implementation of Competitive Business Models

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### Abstract

*Restructuring is a method of revolutionary change that signifies the transfer from an existing to a new structure enabling a higher degree of effectiveness and efficiency when it comes to managing business transactions, thus guaranteeing a better rate of survival and development of the company. Restructuring may be implemented in various connected business areas or functions, depending on the goals, the type of company and the types of its programmes; one of the branches of restructuring is also developmental and technological restructuring. Considering the technological progress and digital transformation of business, a sufficient degree of global competitiveness of the product portfolio will only be possible through methods of revolutionary change, which is, however, a significantly more complex and expensive task than the implementation of gradual change. In companies in crisis, their past business models cannot succeed, which means they need to be changed in a profound manner. However, contrary to the expectations, survey data shows that in these companies, management is mostly (or only) dealing with financial restructuring, which cannot guarantee the further existence and development of such a company without first implementing new or drastically changed existing business models.*

**Keywords:** Restructuring, Change, Digital Transformation, Crisis, Business Model

### INTRODUCTION

If we presuppose that changes in global or local environments occur increasingly often and faster, while also being less predictable, what are the rules or recipes that managers should follow in order to prevent a latent or acute crisis from developing in the company, while also allowing the company to not only continue existing, but also to develop (faster)? Due to the specific nature of each individual case (company), there is no such thing as a generally applicable recipe. This is why, considering the modern turn of events in companies, the business practice constantly develops new approaches guaranteeing companies to succeed and thrive in such a turbulent, complex, and chaotic global environment; all of these approaches, however, are based on the necessity and the constant nature of the so-called three-stage approach:

- monitoring the events and changes in the environment,
- transferring current and future characteristics of the environment into the company,
- implementing changes in the functioning of the company on the basis of said transfer.

Changes in the modern and global business environment taking place in all fields are extremely dynamic, tumultuous and unpredictable, meaning that the company must permanently adapt to them by preparing and implementing both active and reactive, both evolutionary and revolutionary, changes to the company.

Technological development as a cause allows for globalisation and accelerates it on the one hand, while it is also a consequence of globalisation on the other. Technological development refers both to the development of technology itself as a set of scientific methods and the applied knowledge that, by means of a combination of production actors, enable the production of products from raw materials in an organised, economically rational and socially eligible manner, as well as to the development of technology management, which includes processes ranging from the development of technology, its introduction and use in the fields of the economy or management, the management of innovation processes on the basis of research and development, the introduction of new technologies and prototypes, production processes and other activities in the organization (Bavec 2001, 50).

Technological development continuously brings new technologies, which shorten product life cycles and tighten international competitiveness, since they require companies to deliver better, more innovative, cheaper and faster products. Such development is not only very expensive and consequently risky, but also so very demanding and it can no longer be provided with funds from only one source (company). Modern society has evolved from industrial to digitalized, and it is the digitalized society that bears far more risks. Globalisation results in a faster and simpler flow of products, services, technologies, capital and information, which is why the degree of interdependence and the level of risk are being set increasingly higher, while people and institutions are becoming more vulnerable when it comes to significant unpleasant and dangerous events. Modern features of technological development introduce us to the fact that the technological complexity of the production process is also linked to the size of (stand-alone or connected) enterprises, which serve as a ground for forming sufficient HR and technological development centres. These, however, are formed using more and more international resources.

From the global economy and business point of view, technological development has accelerated the internationalisation of companies and activities by entering the global networks, especially in the following fields:

- information-communication technologies,
- international logistics,
- shift of production towards service technology.

There are four main forces which influence digital business: 1. convergence and technology, 2. customer empowerment, 3. digitalization and innovation dynamics and 4. market complexity (Wirtz 2019, 72). In the context of technological development, the process of the internationalization of business and companies, as well as globalization in general, has been greatly influenced (with reciprocal influence) by advances in information-communication technology, which has produced the most important innovations in the last 40 years (the Internet, laptops, mobile phones, e-mail, etc.), and at the same time provides important support for the organizations' business operations, decision-making and building of

competitive advantages. E-business defines all the business processes that take place via electronic networks using information-communication technology (e-store, e-marketing, e-commerce) and are designed as global by default (e-highway). As such, it provides means for the direct entry of (manly small) companies into global markets or international distribution channels. In some segments, especially in the service sector, it contributes significantly to changing the conventional business modes (e.g. retail trade, tourism, etc.), competitiveness factors (transaction costs, response time, price, etc.), banking and other financial transactions, the exchange of external trade documents, information distribution and analytical comparability. Global e-commerce enables transactions between global buyers and retailers in B2B, B2C, C2C, B2G and other directions. Digital trade (e-commerce) increased by almost 50% in 2016 compared to 2012. In B2B commerce, the value of digital commerce is 6 times that of consumer marketing (B2C) (World Trade Organization 2018, 21).

All new discoveries and technologies exploit the power of digitisation and information technology in general in combination with knowledge management. New methods of value building derive from digital transformation as a fundamental change in the overall business environment, which has occurred due to the introduction of new technologies and business models. Digital break and the transformation of the business sphere that underlies the changes to business models on the levels of systems, structures, activities and processes (Verhoef & Bijmolt 2019) constitute one of the world's megatrends (Schaeffer & Sovie 2019, 13, 21).

Logistics as the process of planning, implementing and monitoring the effective flow of goods, services and information is a specific area of technological development that has provided for the implementation of both technical and physical aspects of the development of globalisation and, consequently, changes in business models. Logistics consists of delivering the right product, in the right way, quantity and quality, to the right place and in time. Thanks to the ability to detect the location of almost everything ("death of distance"), the world has become a "smaller geographical area" in various aspects, which is also a consequence of the speed at which events occur and the speed of their effects (Liesch et al. 2008, 204). Logistics is part of the global supply chain, which is a network of organizations involved in upstream and downstream links in various processes and activities that produce value in the form of products and services in the hands of the end consumer (Mangan et al. 2012, 9).

Turning production into a service industry changes the directions of the exchange of products and services, investments, information, knowledge and capital, leading to less mass production and more differentiated and specialized offerings. In 2019, software and solutions (40%), electronics (30%), mechanical parts (20%) and digital components (10%) still represented the largest source of value of the product. However, in the future, by far the largest source of value will be digital components (70%) followed by software solutions (20%) and mechanical parts and electronics (5% each). Users no longer aspire to own a product but to have access to it, leading to the use of the product as a service (Schaeffer & Sovie 2019, 15, 104), and such user preferences require major changes in operating models, product innovation processes, platforms and culture or a complete product re-architecture. No industry is immune to the penetration of digital technology (e.g. cloud, artificial intelligence, 5G network, robotics, etc.) since DT directly affects and changes more than 75% of industries, replacing mass supply with personal experience, proven examples and context-specific services (Schaeffer & Sovie 2019, 26).

Considering the above-mentioned contemporary developments of all types and on all the levels of the environment, as well as in the companies themselves, it can be stated that companies, based on the old principles of independent operation and by dealing only with their own self-sufficiency, will not be able

to secure the necessary global competitiveness and thus further existence and development. It is necessary to adapt to a rapidly changing environment and to find new ways to ensure the efficiency and success of operations by improving and consolidating existing business models or developing completely new models with the characteristics of modern management and the current global environment.

## **EVOLUTION OR THE REVOLUTIONARY INTRODUCTION OF NEW AND CHANGING EXISTING BUSINESS MODELS**

The business model defines the way in which an organisation with a unique combination of programmes (products, services, knowledge, capital, information, technologies for targeted participants), sales conditions, distribution channels and market communication, and a unique combination of assets in a competitive environment creates value in their business processes (benefit) for customers, thus achieving its own fundamental goal and indirect goals of the participants in the organisation.

Numerous business models that can represent the basic framework of adopting decisions in individual past situations are no longer useful or are only useful to a lesser extent due to numerous limitations and unreal presuppositions on which these models are based; in current business circumstances, past (archaic) management models, approaches, styles and competencies (skills, knowledge and capabilities) do not suffice, meaning that new and often completely innovative models have to be developed, which often takes place through the use of dynamic strategic thinking.

Due to the impact of globalisation and accelerated technological development, with an emphasis on information communication technology, companies must start thinking about new business models, which is a challenge for strategic management. The new business model is based on (Wildemann 2017, 8): 1. customers' needs and innovations (specialised solutions, highest quality, flexible/modular offer), 2. distinction from the competition (close relationship with clients, partners, the best solution on the market or the best price-service relation), 3. key assets/core competencies (technological know-how, long-term knowledge of their customers, system and process know-how), 4. value-creating architecture (concentration on core capacities, intelligent networking – smart organisation).

The introduction of new business models and changing existing ones to ensure the competitiveness of the supply on the global market may take place by means of evolutionary or revolutionary change (Dubrovski 2018, 130). In terms of quantity, the former are more common, while the latter are more common in terms of size and complexity (Burke 2002, 67). Methods of evolutionary change consist of all those related measures that, on a day-to-day basis, lead to change within the mission and vision of the company, the long-term goals and the core strategies, thereby ensuring a consistent and gradually increasing level of performance and operating efficiency. This may apply to regular strategic operation or achieving specific objectives based on a project approach. Methods of revolutionary change, however, include restructuring (emphasis on the comprehensive change of structures) and reengineering (emphasis on comprehensive changes in processes).

The basic difference between the revolutionary change methods and the evolutionary attainment of change is that the revolutionary methods are used less often and that they are comprehensive and aimed at achieving broader goals. Furthermore, revolutionary methods are conducted with greater intensity and in a shorter time period, and are also much riskier and require certain sacrifices. These sacrifices may relate to material assets (the sale of fixed assets and investments or “family silverware”, withdrawal

from equity and business associations, the sale of objects affecting the social standard, the reduction of funds for non-business purposes, the sale of real estate and leaseback, etc.) and intangible assets (employee dismissal, the replacement and departure of experts, the sale of patents or trademarks, the loss of information resources, disruption of business networks or of the connections established with customers, etc.). Because of these sacrifices, revolutionary change methods are not perceived as pleasant, but rather as a cause of fear, uncertainty, distress and stress.

The relationship between the revolutionary and evolutionary methods can reflect in the dilemma of whether the undertaking should implement gradual changes planned in the context of the objectives set or whether the company should follow flexibility in such a way as to respond to unintentional changes by changing internal structures. Often, the solution will be a combination of methods, where planning serves as the basic premise of development, on top of which flexible strategies must then be implemented (Wildemann 2004, 21). As a rule, evolutionary change is achieved over a longer period of time compared to revolutionary change, if measured by comparing the situation at the beginning and end of a period in which the employees (and external environment) do not perceive the changes as drastic, dramatic or unpleasant and the sacrifices are not noticeable or are not present at all due to the planned operation. Both types of changes affect the following three levels: individual, group and organisational. Regardless of the type of method used for achieving change, the aim of both (evolutionary and revolutionary) is the same – achieving a renewal that leads to a higher stage of development.

Business models can therefore be introduced and modified through either evolutionary or revolutionary methods, which require different approaches. As a rule, revolutionary methods of changing of the business model will be required when the company faces a significant backlog compared to the competition, when the company is facing an acute crisis or is threatened by a crisis arising in the near future, when the company did not keep up with technological and general changes or when the company has set an aggressive development policy. Revolutionary methods of changing business models will require sacrifice and are, on the whole, more expensive and significantly riskier, but in the cases described, there is simply no alternative.

## **DEVELOPMENTAL AND TECHNOLOGICAL RESTRUCTURING FOR NEW BUSINESS MODELS**

A company's development must therefore be based on constant change, which always entails the collapse of the existing internal and external balances and the establishment of new ones with the aim of improving performance and efficiency. If a company does not change, it cannot evolve.

The method of revolutionary change signifying the transfer from an existing to a new structure that enables a higher degree of success and efficiency when it comes to managing the business transactions of the company, thus guaranteeing a better rate of survival and development, is called restructuring. Restructuring can be implemented in various connected areas, depending on the goals, the type of company, and the type of its programmes; one of the branches of restructuring is also developmental and technological restructuring.

Developmental restructuring is the process of creating a new structure of activities and programmes (products and services) with a higher degree of developmental or even innovation components, which leads to achieving a better commercial offer and business processes and consequentially provokes the

increased overall competitiveness of the company. Meanwhile, technological restructuring is the process of using scientific and professional methods, as well as general and specific knowledges and skills, which will make it possible to move forward with the production of the planned programmes.

Development is directly linked to both technology (technological development) and product design (the development of products and services); however, there is also an inseparable link with the area of business and marketing or, in our example, restructuring in the field of programmes and marketing. Within a company, the field of development is inextricably linked with the marketing function and also represents an inherent part of it. In the development department (sector, office, division), it is marketing that reveals the need to amend the products and is translated into new solutions that must be carefully and deliberately studied in order to later transform them into quantity parameters in the technological department, with the latter being the basis for the preparation of production and the production process itself.

This means that the changes in the company have been initiated by market developments or, broadly speaking, by the events in the entire company environment. With restructuring in the field of programmes and marketing, the company chooses a new combination of programmes and markets that usually allow the company to achieve a more favourable position. Any amendments in the field of programmes and marketing, however, must be accompanied by simultaneous and sufficient changes in the fields of development, technology and manufacturing in the company. The cooperation between R&D and the marketing department must be extremely close. Programme restructurings that do not reach other areas are extremely rare. When we talk about a higher degree of innovation, we are obviously not only thinking about technological innovations, even though any changes in the technological field are probably the strongest engine of growth since they enable the development of new trademarks, create new markets and reshape smaller companies to become market leaders (Sood & Tellis 2005).

For example, if a company develops a completely new product that is attractive for the market and has been developed by marketing experts, such a product can initiate restructuring in the field of programmes and marketing since the markets that have been known thus far (i.e. customer segments) will need to be amended in order for the product to be included in the existing product portfolio of the company in a significant proportion. In this case, restructuring in the field of programmes and marketing will need to be implemented first, before the developmental and technological restructuring, if the product proves to be interesting for the market in the future.

Just as we plan the development of new products, the development of the technology used to create these products will also need to be planned. In this context, we talk about technology management as an efficient way of handling technologies. In the most successful companies, a half of their income is achieved through new products, while the lower third of least successful companies only achieve between 10% and 15% of their income through new products (Wildemann 2004a, 15). Changes in the field of technology are anything but simple since they are related to both high investments and the equivalent risk, which can endanger the existence of a company in the event of failure. On average, the degree of unsuccessful technological renovation projects amounts to between 40% and 70% (Burnes 2004, 3).

The acquisition of new, more innovative technology is only possible through 1) developing own technology within the company (which requires a lot of time and various assets, and can provide technological innovation and independence for the owner, but is simultaneously extremely risky if the

invested efforts and assets don't culminate in the desired results), 2) taking over a company that is already in possession of the target technology (in such a manner, the company will be able to obtain suitable technology relatively quickly; this strategy, however, can also be extremely risky since purchasing a company can come with a whole array of unknown traps), 3) strategic alliances (on a contractual, interest-related or equity basis, which brings about risk-sharing and a concentration of assets), 4) technological outsourcing (the technology is developed by external specialists and R&D centres), 5) the purchase of a license (which enables the immediate acquisition of the technology, which is, however, limited by the contractual provisions and is the result of other people's knowledge), or 6) purchasing already-made components, which are then combined and put together to form the final product (this is a risky short-term method since it is unlikely that the costs will enable the company to maintain its competitive position).

The accelerated technological development is increasingly leading to:

- an increase in interdependence,
- an increase in the volume of R&D assets,
- a reduction of the product and technology lifecycle.

These features of technological development introduce us to the fact that the technological complexity of the production process is linked to the size of the (stand-alone or connected) enterprises, which serve as a ground for forming sufficient HR and technological development centres. These, however, are formed using increasingly international (global) resources.

The purpose of creating such a developmental and technological structure of programmes (products and services) that contains more added (developmental or innovation) value, i.e. the basic purpose of developmental and technological restructuring, is the implementation of detailed restructuring processes for related and interconnected fields of development, technology and manufacturing, which are as follows:

- the orientation of all activities towards the customer (which is important for decisions related to investment policies),
- the reduction of internal (waiting and flow periods) and external (market introduction) periods for all processes,
- simultaneous engineering,
- the restriction and elimination of activities that do not contribute to the value of the product/service,
- the integration of areas and processes,
- relative cost reduction,
- an increase in quality, productivity and flexibility using modern manufacturing and technological methods.

The first objective underlines the correct (marketing) orientation of all investments in the company, the second objective is related to the importance of the time component, the third objective emphasises the need for an optimal influence on developmental, manufacturing and distribution costs, the fourth objective focusses on key factors creating value or success, the fifth objective underlines the coordination and correlation of the entire functionality, the sixth objective focusses on managing costs

related to income, and the seventh objective underlines the use of modern manufacturing and technological processes in order to achieve a higher degree of operational efficiency.

When it comes to developmental and technological restructuring, we need to guarantee the following components in order to reach our goal (transition to a higher value segment with an increase in the innovative component):

- sufficient R&D investments,
- increase in the efficiency of these R&D investments (R&D productivity).

In the second example, we are talking about finding or, rather, defining the correct relationship between investments and the costs needed to develop new and update existing programmes, procedures and technologies with a direct or indirect influence on the marketing- and income-related position of the company. Although the aforementioned direction guaranteeing the existence and development of the company in the field of development and technology is undisputed, real-life situations often culminate in opposite activities since the company needs these resources in order to resolve other existential issues, thus transforming the R&D area into a "mass-of-manoeuvre" (Schmitt 2009, 147), i.e. a residual issue that will be dealt with if there are any resources remaining in the end, instead of a strategic factor guaranteeing competitiveness and future success. The reason for such an "automatic" underestimating of the R&D area can mostly be found in the fact that initial investments don't bring the immediate benefits and short-term effects that are sorely needed when faced with an actual or impending crisis.

## **EMPIRICAL EVIDENCE OF CHANGING THE BUSINESS MODEL FROM COMPANIES IN ACUTE CRISIS**

The findings from the theoretical discussions here, prior empirical studies in this field (Dubrovski 2010; Dubrovski 2016), and the author's own many years of strategic management and restructuring consultancy practice have shown that companies facing an acute crisis in Slovenia that attempted to solve that crisis through an insolvency procedure of compulsory arrangement (in-court restructuring, debtor in possession proceedings):

- pay surprisingly little attention to changing their ineffective business models (that led to the acute crisis) and introducing new strategies, structures, processes and systems, even though in this case, this is the most important area of renewal, which will ensure further existence and development;
- in most cases attempt to solve the acute crisis through various forms of financial restructuring, meaning that they are actually dealing with the consequences rather than the causes of the crisis, which brought on the need for financial disburdening;
- are mainly only implementing short-term and superficial measures, even though the extent of the crisis is very deep and encroaching upon several areas.

Among the prepared measures, the ones most emphasised are the legal aspect (which is expected with regard of the type of sample) and the financial perspective, as part of the broader economic perspective. Meanwhile, unexpectedly little attention is paid to other aspects, especially the traditional – as a break with previous practice and the start of a new business life cycle of the organization, the formation of new foundations to build up the core capabilities of the organization and competitiveness factors, and



the introduction of a new managerial ideology and approaches – which in this case were studied with radical change or the introduction of new business models in mind.

The reversal of a crisis in a company also requires a whole series of new sectoral structures (programme marketing, HR, organisational, financial, production, developmental, technological, etc.), which are primarily aimed at halting negative trends. Therefore, the setting up of new structures (and processes) at this stage is rapid, less extensive and incomplete, as short-term effects are observed. Only in the second phase, when it comes to setting the foundations for development with profitable operations, are full and comprehensive restructuring projects with medium- and long-term effects implemented. Therefore, the role of restructuring in the period of the first phase of addressing the crisis (stopping negative trends) is less emphasised, and later on, it is a priority. Hence, the restructuring method is practically necessary after the stopping of negative trends, otherwise, the company will continue to do the same things that have led to the crisis. Development and technological restructuring can be extremely complex for the company in a crisis, as there is usually a need to provide substantial funds, which the company primarily devotes to short-term financial restructuring. However, without a change in business models which, among other things, are required due to the effects of globalisation and technological progress (digital break or digital transformation), the crisis in a company that is supposed to ensure at least medium-term existence will not be eliminated, also taking into consideration that the implementation of a new business model can require from 4 to 11 years (Johnson 2018, 152).

Management often get trapped in their cognitive preconceptions that tint their view of the world when it comes to assessing interventions and the causes of a crisis. A well prepared and executed compulsory arrangement is often a necessary, yet insufficient condition for achieving a drastic change and ensuring the re-development of a company. An insolvency procedure is a process, not a solution (Miller 2008, 202), which gives a company time and access to new ways of financing for recovery and renewal, when new business models must be created based on dynamic strategic thinking and knowledge management and order to achieve the desired level of global competitiveness.

## **CONCLUSION**

In that paper, we are summarising the discussion of modern business situations, among which the effects of globalisation and technological progress are such that they often require a revolutionary change of the company in the frame of which the company will ensure global competitiveness and continued existence and development by introducing new business models or changing the existing ones. Restructuring as a method of revolutionary changes may be implemented in various connected business areas or functions, depending on the goals, the type of company and its programme types; another of the branches of restructuring is developmental and technological restructuring.

Developmental restructuring is the process of creating a new structure of activities and programmes (products and services) with a higher degree of developmental or even innovation components, which leads to achieving a better commercial offer and business processes and consequentially stimulates the increased overall competitiveness of the company. Meanwhile, technological restructuring that follows after the programme and marketing restructuring is the process of using scientific and professional methods, as well as general and specific knowledges and skills, which will make it possible to move forward with the production of the planned programmes. Oftentimes, it will be possible to implement new, globally competitive business models, which will include digital transformation with knowledge management processes, only on the basis of this development and technological restructuring.

The introduction of new business models or changing the existing ones is a particularly difficult task for companies in crisis, as the majority of assets are earmarked for short-term financial restructuring, which cannot guarantee further existence and development without change in other areas of the company, whereas surprisingly less attention and envisaged activities are devoted to development and technological fields, which may even be at fault for a company falling into crisis. A result of such neglect is a very low level of crisis management success in companies that does not exceed 20% of cases.

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