

Štefan Kassay

Enterprise and Entrepreneurship Internal Processes (Vol. 4)

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The fourth volume of a significant pentalogy Enterprise and Entrepreneurship from one of the most prominent Slovak theoreticians of management, academician Štefan Kassay, is called Internal Processes. In the fourth part, the Slovak management theoretician focuses on topical issues of internal business processes such as development trends in production systems from a global perspective.

The work is divided into several parts. They deal with various issues such as the design of an innovative company, projects implemented in industrial practice, design of a globally drafted company.

The first chapter deals with social reflections of new requirements. The author thinks about alternations of social and economic environments. The basic forces of transformation are seen in the context of different types of innovation technologies, in the intensive expansion of results, in the social influence of the development of this new type of productivity. The author also considers changes of existential environment and influence of communication. Innovative excursions are also part of it. In the first excursion, paradoxes of the surplus society are presented. He states that "a new era of global investment based on new rules of direct regulation, transparency and accountability is approaching." (p. 65). In the section about the new economy and the impacts of transformation on company economy, Kassay deals with decisive elements of complex change of the entrepreneurial environment, such as confidence, intellectual capital, technology, customers, speed, production extent. For the alterations of the entrepreneurial environment, the author considers decentralization and administration, company restructuring, mass customization, national entrepreneurs, foreign capital resources, productivity and unemployment and so on.

In the model of the new economy, it represents a pentagonal model. This consists of components of knowledge economy, which is known to be the fourth factor of three traditional factors of production (labour, land, and capital), real economy, leisure economy and charitable economy.

The next chapter is devoted to creating management systems. The academician is committed to picking up the phenomenon of evolution in this issue. Similarly to the body, some of its components account for PPM control and procedures. Analogously, for example, the fact that all living bodies can learn as a whole through all their parts and the machine design

is rigid and it cannot be learned as a whole, it can only be programmed in advance. The Norbert Wiener scheme, presented in comparison with the Leonardo da Vinci scheme, represents information and integration of knowledge oriented on innovation processes. The scheme is taken from the interesting book *Cybernetics: Or Control and Communication in the Animal and the Machine*. Similar questions were taken, for example, at a recent IEEE Computer Science and Informatics conference (2017) held at the Armenian Academy of Sciences. The principle of choice is important in the sense of society as a living organism such as in the case of evolution. Analogously to the evolutionary process, Kassaya and Zeleny recognize 7 development phases: the emphasis of the final product, the transfer process, the change of process architecture, the extended process, the education and experience, assumption and development.

Next is the chapter devoted to the quality phenomenon that Kassay describes as the pillar of the company to compete on global markets. The author presents this phenomenon as an irreplaceable indicator of successful global companies. As he himself states “the implementation of the quality management principles requires defining and implementing the process procedures leading to the achievement of the quality goals to determine the responsibility”. Kassay, according to Linczényi, Hubert, Kotler and Bitnter, distinguishes several aspects of quality. He presents views of the theoreticians: Juran, Garvin, Ishikawa, Taguchi, Shingo, Kondo, Feigenbaum, and Crosby. Feigenbaum's implementation of science has a philosophical impact too. The chapter also introduces a number of principles of quality management focused on customer, leadership, continuous improvement, managing relationships, social responsibility, comprehensiveness, team collaboration, etc.

The following chapter discusses innovations and their impact on company performance efficiency. In the analysis of the concept of innovation, the author relies on important theoreticians such as Drucker, Schumpeter and Kotler. Kassay recognizes both external and internal sources of innovation. He describes the processes of improvement from different perspectives. The process of innovation is conceived as displayable in the pyramid, which consists of operational processes, product and service innovations, strategy innovations and management innovations. He describes the indication and change demonstration. Innovation force field is understood as complex arousing and suppressing changes, which are components of new technologies, scientific knowledge, preference of local interests, social changes, etc. He seeks to share components of innovation processes such as developing invention, creating innovation and diffusing innovation. Within the scientific approach, the life cycle of innovation is also mentioned. He recognizes the following stages: preparation of innovation, penetration, diffusion, sanitation and retreat. He also intends to

calculate barriers in the innovation process. He also presents various models of innovation processes such as Gann cycles, Kondratieff cycles, cycles analyzed by Schumpeter. Other models include Schmookler, Rothwell, Kline's model, Beije's model, Kleinknecht's model, Simon's model and Mathews's model. Furthermore, he introduces entrepreneurial and managerial innovations, product innovations, process innovations, system innovations. The conceptions aimed at company growth are analysed. A detailed author's scientific analysis is aimed at the concept of strengthening competitive confrontation with focus on illustrating challenges in the Triple Bottom Line concept, people, planet, and profit components. The concept is based on structural similarity with Wenn's diagrams. Great attention is paid to the concept of sustainable restructuring.

In the next section, he deals with creating value innovations and distinguishes many principles of creation of values. Creating innovations in that context is like a conical spiral. The topic is also the systematic creation of new markets. The author describes two strategies, the strategy of the red ocean and the strategy of the blue ocean. I agree with him that "creativity and new ideas enable a new added value to be created for the customer, creating the "blue ocean" which also secures substantially greater benefits for the company". Blue ocean strategy is further developed with the first principle of reconstructing the market boundaries. The final part of the chapter is devoted to the implementation of management innovations as the last component of the innovation process. The chapter innovatively adds the OECD's appendix and excursion, as well as the way businesses should be in the future. The author also draws attention to thinking of higher orders, focusing on various models of world innovation centers. It also compares the economy level of individual countries.

The last chapter of the first part deals with the inevitable changes that companies are awaiting. Academician Kassay is thinking about global trends at this point to 2030, with which the world class company will most likely meet in the next decade. It is admirable that the author strives to link evolutionary principles to the theme of innovation in the time horizon of incoming trends.

The management theoretician starts the second part of the publication with the topic of designing a world class company. The introduction is devoted to the presentation of large corporations such as Wal-Mart, Sinopec Limited, Carefour, IBM, etc. The author also offers a brief medallion of great business personalities such as Bill Gates, Steve Jobs, Rupert Murdoch and others. Kassay analyzes the results that are significant for the basis of designing the world class company. Under this theme, the chapter offers schemes for the designing of an entrepreneurial environment, project relationships, innovation, management, as well as a guideline for forming a creative business environment. The reader will

certainly appreciate the introduction of a business strategy as a balancing strategy for creative projects, with the company having a lot of flexibility. These contexts are associated with TQM, or the well-known Japanese technique just-in-time (JIT) method. The monograph describes in detail the planning and control of production in the enterprise in this chapter. It also discusses the issue in terms of personnel planning. Within the theme, he seeks a dichotomous expression of the relationship among strategic programmes and projects, which he also distributes the field of IT involvement. Valuable are detailed analyzes of project preparation from the point of view of management, which provide detailed guidance on the preparation of the project on scientific bases.

In the second chapter of the second part, an important theoretician of management addresses the requirements of designing. He discusses a topic from a systems engineering perspective, where he applies the theses from the model of a broadly structured society, counting on many factors and indicators. Interesting are futuristic-oriented words of prof. Kassay: “A company of the future will not be large and will not manufacture big volumes” (p. 400).

The third chapter of the second part deals with network enterprises. The author draws attention to the relationship between manufacturing processes and logistics. The chapter describes in detail the mutual relations among businesses and transport. It also deals with the downturn of an enterprise in the midst of major economic crises. It analyzes the problem of teamwork in the area of market and enterprise networks. Kassay is committed to linking emerging production planning strategies with strategic corporate governance in the future.

The fourth chapter is devoted to the management planning methodology. The author reflects in essence two concepts of designing methods in a company, three-dimensional and two-dimensional, while analyzing their combination. Many components of the methods in question are endeavoured. The chapter is accompanied by an interesting excursion, while the author deals with the issue with the interesting Japanese kaizen improvement strategy.

The academician focuses on methods of improving the quality and economic prosperity of enterprise in the fifth chapter. He describes the development of TQM system from ad-hoc tactics through Six Sigma to FIT Sigma, while he presents several excellence models such as the Deming model of Japanese provenance, the Baldrige model from the USA awarding the MBNQA prize, the European Common Assessment Framework model, the mixed TQMEX model, the Oakland's and Porter's SQF model and some other models. He reflects the importance of measuring quality in management systems. He deals with his own measurement system, the documentation of the measurements, the reliability of the data

and the reality to be displayed in the context. In this framework, he also provides an analysis of the certification of quality acquisition in connection with the existence of valid ISO standards.

The sixth chapter, which discusses routine quality processes, analyzes classical methods today. It analyzes some interesting methods of Japanese origin, kaizen, kanban, as well as the Just-in-Time strategy. The scientific potential of the book's author is reflected in the less-known concept of the Jidoka system. The conclusion of the chapter is devoted to the early detection of Poka Yoke errors. Kassay goes very closely with the process of negative surprises, the discovery of errors, the search for the causes of errors and the relationship among errors and other important entities, as well as the received consecutions as a result of identifying the causes of errors.

In the seventh chapter, the great author of pentalogy presents several themes. In particular, he incorporates the methodology of radical changes in the process of companies. He describes the classification of reengineering expressions by the famous author Zelený, who recognizes fundamental changes, radical changes, dramatic changes, process, proposal and system complex approach. The problem of changes according to Zeleny, as Kassay writes, is divided into three groups: ten forces of the company management, seven forces of reengineering and many combinations (p. 485). In this context, the paradigm of global management is important. The author deals with the basic aspects of the problem, including business reengineering. In this theme he uses Jacobson's theory. It is positively possible to evaluate the direct functional introduction of changes and their consequence on reengineering in the spreadsheet. The author offers a portfolio of many methodologies by many authors. The chapter describes the process of reengineering, analyzes the process of product creation in companies. The author analyzes very closely the individual stages of project preparation. He deals with the stages of the project creator as well as with the enterprise perspective. This issue is also discussed from a security point of view in the field of information technology, describing the work of the innovation team and process team.

The reflection of the company's internal processes would not be complete without an analysis of the not always popular but necessary lean process. Kassay analyzes the various lean process relationships with lean production, grasping the theme in truly broad contexts. He even deals with the philosophy of lean production and describes the individual steps of slimming, including the Heijunka method. The chapter further describes administration, logistics and development from the perspective of slimming processes. However, this chapter is not exhausted, as the author continues with a discussion of complementary methods for developing concepts. He analyzes the use of the German BOA method, the MTM

method, the MOST method and the milky - run method. More attention is paid to the SMED (single minute exchange of die) method. It is noteworthy that academician Kassay also uses the phenomenon of deterministic chaos, namely the theory of fractals. Applications of discoveries made by Benoit Mandelbrot in the field of management in the fractal company are a great innovation of Štefan Kassay. Employee optimization and rationalization is also addressed with TPM (total productive maintenance) method. The issue is realized in the context of usability and rationalization. The amount of knowledge is linked to expert systems based on scientific management and Kassay strives to grasp invariance and algorithms in terms of keeping up with the technical revolution and process compliance in a company with technical developments within a sustainable and prosperous society. In this sense, the author links the technical and economic issues with the field of human thinking, psychology and philosophy. Apparently inspired by Husserl's phenomenological reduction to the TRIZ concept, he also includes a phenomenon of world's existence. As it is known, Husserl seeks to emulate this so-called natural attitude as a phenomenological method. In addition to the above mentioned method, Kassay also deals with DIVA, WOIS and CREAX methods. The last sub-themes are associated with the ZIPF company model in this chapter. Methods of building a proprietary company system are detailed and illustrated in the tables.

The eighth chapter deals with manufacturing technology design. The author classifies the manufacturing process, analyzes in detail the pre-production phase, production phase and post-production phase. As an economist, a journalist, but originally engineer presents in details and classifies various types of production equipment and machinery. From the point of view of engineering, management and economics, various manufacturing systems are evaluated. Flexible manufacturing systems are also included in his analyzes, while the automation context is not obviated. He also takes into account many criteria of manufacturing processes and as assembly workplaces, technological workplaces, and also focuses on automation. The structure of manufacturing systems is largely dealt with in engineering.

The ninth chapter of the second part deals with company design in terms of digital technologies. These technologies make it possible to construct virtual models. Kassay rightly portrayed the fact that virtual models are not a bifurcation of reality but a simulation. In addition to simulated virtual environments, he deals with virtual company design issues. Simulation processes have one main, didactic goal in particular. The author points out the possibilities of virtual modeling: reality and development environment. Overall, he seeks to analyze simulated business planning and its sessions from many angles. He also discusses various ways and tech-

nologies of simulation. The chapter is completed with two interesting excursions. The manuscript of the famous scientist is evident, in particular, by many technical details within the chapter and excursions. The author thus shows a number of real examples of linking the results of practitioners and theoreticians, the results of which are not studies that bring in particular personal prestige, but above all real tangible results applicable in the production process.

The last chapter of this section is devoted to the work environment. It describes the importance of ergonomics within the work environment. The author considers the context of health and the working environment. He analyzes the psychosocial factors of the working environment, the phenomenon of light at work, the colours in the working environment, but also the issue of radiation, microclimatic conditions or noise and vibrations in the workplace. He also deals with psycho-hygiene and the relationships of people, machines and working tools. Unlike Marx in *Alienation of Labour*, however, the optimization of this relationship can not be seen in the general possession of the means of production but in the maximum improvement in working conditions. The author tries to draw optimal conditions in terms of sitting, leaning, walking downstairs, work at the table, with a computer. Attention is also paid to physical work, where he seeks to focus on psychosomatic links of movement. He also favours vision for psychological work. He talks about various aspects of working with computers, trying to introduce optimal configurations for long-term work with computers. He lists the symptom of total burnout, looks for its causes, possibilities of prophylaxis as well as return to normal. Kassay realizes that man is the three-dimensional dimension of soul, spirit and body, and so his application to the working environment is thought to be broad-spectrum. He focuses on both the mental and health aspects of work and represents the optimal models for working conditions. Finally, three appendixes complement the chapter: quality enhancement, design and re-design of a production system and digital company design. In the last appendix, the author presents robotics in a modern enterprise.

The third part is devoted to case studies as well as to the experience of large-scale production systems. The author introduces the great Japanese company Toyota, as well as the well-known company Baťa. Let's recall that Baťa's high school of work had many important personalities, known chemist, environmentalist and politician Anton Blažej and politician Jozef Lenárt. He also presents the Czech company Škoda.

The first case study speaks of the process of change in I. D. C. holding. The author is competent to express himself and to analyze the system of functioning of the company. He also speaks about the company's products. The second case study is Johns Manville Slovakia. In the third case

study, he speaks of well-known Slovak chemical company Chemosvit. The fourth case study is represented by Nematik Slovakia s. r. o. The fifth case study is a probe into Linet. The sixth case study represents the Slovak company Virtual Reality Media, which simulates flights of helicopters and aircraft. The 7th case study seeks to impress the reader with the individuality of Borcad s. r. o., which strives to produce modern ergonomic seats and chairs. The eighth study deals with IPA Slovakia, where the tools of a well-known expert Professor Košturiak are being applied.

The fourth volume of pentalogy by academician Štefan Kassay is dedicated to the business process. It is not an ordinary piece of work that summarizes the already familiar aspects of business processes. The author combines the principles of business processes with the idea of evolving. The merging of the evolutionary principle with the principles of business processes make this part unusual that is its innovativeness. The content did not happen in time, it did not waste time, but it is current in today's time horizon. Štefan Kassay has evaluated and analyzed stepping up changes in a given volume really successfully. The fourth volume is an original but empirically justified organically integrated component of pentalogy. It is not only a theoretical discourse but also brings valuable examples, case studies and excursions. The author has once again shown his high-qualities of an elite researcher who, moreover, is not only a theoretician, but also combines academic knowledge with a praxeological level.

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