

Advances and Difficulties in Serbia's Reindustrialization

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Abstract The starting point of this paper is that for the completion of (post) socialist transition process is needed the realization of the strategy of reindustrialization of the Republic of Serbia according to the European concept of endogenous, auto-propulsive, self-sustainable and inclusive development. Development based on knowledge that is the essence of this concept, in Republic of Serbia in the last three decades, was promoted several times as strong development orientation. Implementation has not started for several reasons, from which in the forefront the cultural-political tendency is easy to define and much easier leaving the determination. The processed material is divided into two parts. In the first part, the emphasis is on causes of deindustrialization in the Republic of Serbia. The second part deals with three generic development alternatives and policies of their realization with emphasis on phenomena that encourage or block the generating and implementation of technological and business innovation in the structure of industry in the Republic of Serbia. The performed analysis shows that networking and clusterization of enterprises and agricultural farms, apropos the development of poles of generic growth are the key mechanisms by which with process of integration of research, high education and production in the local, sub-regional, regional and national frames, should start this process from a standstill.

Keywords Reindustrialization strategy • Generic growth poles • Endogenous growth • Knowledge based development

JEL Classification Codes L51 • O14 • O38

1 Introduction

The subject of this paper is the analysis of the role of the public regulations in implementing the project of reindustrialization in Republic of Serbia in line with the European concept of the endogenous, auto-propulsive, self-sustainable and inclusive development, characterised in three paradigms—*sustainable*

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development—creative society—innovative economy. In line with this concept, basic sources of development are generated by technological and business innovations resulting in the development of new, and the improvement of the performances of all existing actors, activities and procedures within the production-organizational, business and institutional system.

The main motivation for the investigation lies in the fact that process of industrialization in communist era was state monitored and not profit oriented. Hence it is of great importance to focus on current state in Serbia's agribusiness and to compare with the previous states from communist times.

On the global level, there are numerous ideas and public policies for the realisation of the strategy of (national) reindustrialization based on the concept of the generation and implementation of technological and business innovations. Without tackling their further analysis here, there is no doubt that only these strategies harmonised with the needs and possibilities of the ruling and the coming social-economic environment have been successfully realised (within which the parts of the production-organizational, business and institutional system are active). All attempts of imitating or consistent use of a universal theoretical model have literally failed. Explicit dealing with the theoretical and practical aspects of reindustrialization in Republic of Serbia is not instantaneous in the first plan. This is especially odd in consideration of the fact that the commitment of key political and professional actors for higher role of new technology within the social-economical development has been present for more than three decades. Nevertheless, economic analyses are inexorable and they show that Republic of Serbia undergoes, without exaggeration, in phase of stagflatory depression, indicating that they are (now) at permanent basis faced with a kind of development crisis—which could be designated as *paradox of institutional and technological changes without (real) changes*. Faced with this paradox, we will try to explain the origin and (too long) retention of factors that block the reindustrialization, as well as ways to overcome them. Since something can be explored and understood only in the context of regular behaviour, in the paper we will use, on the one hand, the ideas and concepts which have their stronghold in one of the general theory of dynamics of complex systems, and on the other hand, the results of our search for answers to the question: *What are the consequences of three basic generic developmental alternatives: (1) completing the process of fordistic industrialization, (2) radical modernization of large production systems, and, (3) development of a creative society and innovative economy based on sub regional and local initiatives and broad as well as interactive cooperation, on conception and realization of the strategy of reindustrialization of Republic of Serbia?* In an effort to elaborate these issues and propose appropriate solutions, the processed material in this paper is structured in two parts.

The first part exposes the synthetic results of researches of the current characteristics of national production-organizational, business and institutional system in the context of their historical development and implications for the structuring of the concept of strategy of reindustrialization according to the European concept of endogenous, auto-propulsive, self-sustainable and inclusive development. A key conclusion is that, due to collapse of old export industries and the disappearance of

reproduction unities by disintegration of (former) Socialist Federal Republic of Yugoslavia, no matter what will be produced, on condition that the productions and activities related to the appropriate enterprises can survive in open competition.

The second part deals with three generic development alternatives and policies of their realization with emphasis on phenomena that encourage or block the generating and implementation of technological and business innovations in the process of realization of the strategy of reindustrialization in the Republic of Serbia. Emphasis is on more precise determination of their implications for public regulation of two projects of creating conditions for the sustainability of the reindustrialization project. The first is networking and clusterization, the second is the development of poles of generic growth as centres of social-institutional experiments that lead together to the changing of perceptions of work, production and development and direct the population to commitment, creation, quality and cooperation in the function of achieving excellence in education, exploration and production.

2 Dynamics and Characteristics of Production-Organizational, Business, and Institutional System and Their Implications to the Structuring of Strategy of Reindustrialization

2.1 Development Dynamics of Production-Organizational and Business System from 1947 to 1989

The industrialization of Republic of Serbia in the period from 1947 to 1989, when the production-organization system was finished, with which the country came into the phase of capitalism restoration and (post) socialist transition, was developed according to the mode of industrial districts. The author's research (Adzic 2013, pp. 311–312) shows that, by the end of 1980, 24 industrial districts were formed, where there were four industrial medium-sized centres (with more than 10,000 employees) and 138 small industrial centres (under 10,000 employees). Establishing industrial districts, besides logically encircled structure of production capacities, was followed by development of appropriated logistical capacities (roads, railways, river and canal transportation, ports, warehouses, large commercial enterprises and foreign trade enterprises) and educational capacities (mostly, secondary vocational education for professions in accordance with the features of production structure of a concrete industrial district).

The basic characteristic of the industrialization within the observed period is that the regional production-organizational and business system was developed within the frameworks of mass energy, material and work intensive production based on the imitation of foreign technologies (above all, by importing equipment and buying licenses) and predominant role of political elite within their structural

development. The consequences of such approach that can be felt up to date include: (1) poorly accumulated experiences *from the best industrial practice*, mostly because of tolerating high irrationality in using the resources, (2) well rooted habit (especially within business structures) regarding high protection and non-competitive efficiency, and, (3) value system and social relations blocking in cite generation and implementation of technological and business innovation. The goods market was not transmitting the signal indicating the production and business system actors: *What and under which conditions should be produced to be competitive?* The basic signals were coming from the offer side, and then mostly the already present things, without searching for some new ones, were offered. Therefore, the key actors of the production-organizational and business system behaved as the typical groups of special interest (distribution oriented coalitions). And where such groups rule, there are no technological and business innovations, but all the efforts are concentrated to maintain the position (Matejić 2002, pp. 705–709; Adžić and Popović 2005, pp. 179–184).

2.2 *Transition, Deindustrialization and Socio-economical Crisis*

The Republic of Serbia, after the restoration of capitalism, and transfer to the development of market social-economic system are covered by a specific form of long-term (social-economic) crisis. To designate this type of (long-term) social-economic crisis, the notion of *transitionism* is used in the national economic literature (Đurićin 2008, p. 22). Without dealing with the explanations in detail here, transitionism is a complex and multidimensional phenomenon which, besides economic, also covers geopolitical, historical, anthropological and cultural aspects. The economic aspects are marked by the problems resulting from the failure to complete four characteristic processes of the (post) socialist transition: (1) privatisation, (2) macroeconomic stabilisation, (3) institutional reforms and (4) reindustrialization. It appears as the post-transitional stagflation, characterised by the disharmony between the real and financial sector (dominated by the banking system oriented to credit retail, and current business activities, primarily within the sector of non-exchangeable), impotent (in developmental sense—the author’s note) real sector, vulnerable macroeconomic stability, lack of institution development, and high regulatory risk, synthetically designated, as stated in the introduction, as the paradox of institutional and technical changes without (real) changes.

2.2.1 *Lessons from Poland and Other Ex-communistic Countries*

Wojtyna and Hausner (1993) notice that privatization offers the best solution to the efficiency problems of state-owned enterprises. However, many observers believe

that some form of industrial policy is unavoidable during the transition period in order to stimulate restructuring before privatization has been completed. They analysed the compatibility and complementarity between privatization and industrial policy in the context of the systemic transformation in Poland. Other ex-communist European countries are observed in Rachwał (2011). The author analyses changes in industry in Poland with respect to changes in other European Union member states. The research problems include: the changing role of industry in the Polish economy in the era of economic transformation, European integration based on globalization and its share of the employment structure and gross value added, changes in the branch structure of Polish industry as well as exports as an expression of restructuring processes, influence of foreign capital on the functioning of industrial enterprises and its role in the re-structuring of the industry.

The most visible result of the transitionism is devastated industry. Many old, especially (which used to be) export industries have disappeared, and none new one has been created. After the first wave of global financial and economic crisis, the process of deindustrialization from 1990 to 2008 in Republic of Serbia has been survived by only each fourth industrial system and from 4 out of 5 employees at large industrial enterprises have lost their job (Jakopin and Bajec 2009, pp. 87–88). The volume of production and employment in national industry in 2013 was only about 40 % of the pre-transition maximum in 1986/1987. Therefore, the national industry practically reduced to three branches—the energy industry, food industry, and industry for production of building materials, on which a basis for the inclusion of Republic of Serbia in the process of European integration cannot be built. There are various views of the basic causes of the occurrence of the transitionism in Republic of Serbia (Đuričin 2008, pp. 22–30; Madžar 2008, pp. 255–265). There is the predominant position that its causes should be sought in the geopolitical cataclysm caused by the disintegration of the SFR Yugoslavia and the incapability of Serbia to, in this context, be included in the process of integration with European Union (Đuričin 2008, p. 22). Not denying the impact and importance of this factor, in the opinion of the authors, the main cause of transition stagflation is the fact that neither the restoration of capitalism (1990/1991) nor the transit to democratic political system (at the end of 2000) fixed the key socio-economic barriers that immobilize the production entrepreneurs and block the generation, implementation and economic valorisation of technological and business innovation. From this point (reindustrialization according to European concept of endogenous and sustainable development), the key is to restructure the national economy, after the restoring of capitalism, in the first stage of transition (from 1990 to the end of 2000), took place in the frame of—"shadow" economy and "brotherly" privatization. After the political changes in late 2000, their key protagonists legalized their own business and property—which resulted in the closure of markets for other participants in market competition. That is why the overflow of effects of global financial and economic crisis, among other things, showed that amnestied protagonists of the "shadow" economy, "brotherly" privatization and culture of small economic freedoms are unable to fulfil the mission of business class—moving the horizons of personal progress, move it for the society, too. The main effects are the low level of

institutional capacity and investment myopia. The result is a very slow and uneven infrastructure increase and efficiency of real economy and weakening of human capital performances.

2.3 Basic Characterisation of Production-Organizational, Business and Institutional System

In this part we will proceed to the key determinants of regional production-organizational, business and institutional system that are important for the strategy of national reindustrialization, whether they act as motivating, or as limiting factors on the implementation according to European concept of endogenous and sustainable development.

First, industrial districts and sub regional clusters and their relationships within the reproduction unit (former) SFR of Yugoslavia has gone in the period of stagflation transition and deindustrialization. The newly formed production-organisational patterns in the national industry have been structured from what has remained and from the relatively thin layer of new micro, small, and medium enterprises, and they may be formally treated as certain micro-cluster variants (Jovetić and Stanišić 2006, pp. 134–136; Kastratović and Marinković 2008, pp. 228–232). Nevertheless, relevant analytical and expert elaboration does not support this statement, which results in the low level of social-economic coordination and poor support to individual and group development projects, above all in sense of creating conditions for the privatisation development of the real sector and the improvement of authentic (regional) production entrepreneurship and innovation system in line with the European concept of the endogenous and sustainable development, creative society and innovative economy.

Second, the spirit of entrepreneurship is missing both at the group and individual level, as well as the whole social-economic system. The majority of the demonstrated entrepreneurship initiatives have ended in the sphere of non-exchangeable goods (retail, real estate, construction) and very few within the real sector and export industry. This is especially distinctive within the domain of high tech industries where there are only few successful entrepreneurial attempts (Adžić 2008, pp. 207–210; Matejić 2008, pp. 38–40). It is crucial that the overall state of the entrepreneurial spirit in Republic of Serbia is characterized by very little interest in the export business.

Third, strategic coordinating mechanisms are very underdeveloped even besides numerous attempts of the reforms of market infrastructure and infrastructure for public regulation of economy and economic development (Adžić 2006b, pp. 65–66). This is reflected in the following: (1) very short time horizon of decision making (short term authority), (2) very high subjective discount rate (tactics prevails over strategy), (3) market incentives do not stimulate collaboration, co-operation, confidence, dedication, and cautiousness, and, (4) the public

intervention is not encouraging the bottom-up cooperation and collaboration, because the use of its mechanisms is based on unconditional cooperation with dominant political feature.

Fourth, STIEOT (Science—Technology—Information—Education—Organization—Telecommunication) infrastructure (system) is in decent situation and it of more quality than in many regions of similar development level. However, the structure of the STIEOT infrastructure is non-effective in production sense (Adžić 2006b, pp. 199–204). All performed STIEOT infrastructure reconstructions (privatisation, rationalisation, applying European standards in education and science, modernisation, association and programming) the task of which was to change the relation to economic innovation evaluation and its contribution to the social-economic development, have failed. The key issue is that the internal relations among the participants of the STIEOT infrastructure are very poor, thus, there is no capacity to exert higher technological pressure to the real economy by actual offer of relevant human resources and new technology.

3 Three Generic Development Alternatives and Their Implications to Strategy of Reindustrialization on Republic of Serbia

3.1 General Implications of Generic Development Strategies on Reindustrialization

In case of Republic of Serbia, three possible competitive alternatives for the realisation of the strategy of reindustrialization may be identified. Those are: (1) the finalisation of the process of fordistic industrialization, (2) radical modernization of large production systems, and (3) development of creative society and innovative economy based on the sub regional and local initiative, and wide collaboration and interactive co-operation.

The first alternative is deeply built into the existing regional production-organizational, business and institutional system, and it is, in implicit form, built in the current national and regional economical and development policy (Study 2010, 2011). Its realisation is based on the policy of low wages and low prices of basic (national and regional) inputs (aimed at achieving some kind of internal and external competitiveness), and acquiring capital and technologies from external sources, above all by legal entities' borrowing abroad. Since its implementation does not require any major regional effort (in sense of higher renunciation of consumption in favour of higher investment), this alternative is in line with the existing key parameters of political or business culture and economic interests—built in the existing production-organizational and business systems. Major restrictions for its further implementation include two factors.

The first and long-term one is the existing human resources capital, and the new one created by relatively developed university education system—which has already been surplus within the existing production system. The surplus of the university educated (currently, over 80,000 persons with the university degree are unemployed) and creative persons is directed to two options—foreign immigration or finding the position within a framework of an interest (political) group (popular national slogan is *that political parties are key employment institution*), of course, at the expense of obsolete knowledge, and professional and productive entrepreneurial dormancy.

The other, not less significant, problem includes the reflexes of the internal, and external (global) economic crisis reflected in the target segments of global labour market—for the time being, with unforeseeable development, economic and social consequences. In any case, it may be expected that the third option will appear, through which the university educated and creative persons will endeavour to focus their frustrations to the active participation directed to the abandonment of the first alternative, and transfer to the implementation of the second and/or third alternative.

The second alternative is achieved when major regional production systems enter the transnational business systems aimed at ensuring the competitive approach to the global market, and fast technological and business modernisation. This alternative ensures to activate what has remained from the inherited resources (on short-term basis) and available human resources (on mid-term basis), as well as that the major (regional) production systems (on mid-term basis) become focal points of the development, and modernisation of micro, small, and medium enterprises.

On the other hand, their occurrence in higher volume would have an integrating effect to currently very separate and closed sectors of production, education, research, public administration, etc. In this way, (new) development structures are created, prompter transfer of new technology is ensured and (partial) externalisation of development risks. Indeed, from the aspect of the strategy of reindustrialization efficiency increase, the implementation of this alternative is (even besides certain risks) desirable, above all, as the transition mechanism from the existing situation to the third alternative. Two basic restrictive factors have effect here. The first is that the basic condition for its implementation is to ensure investment and ownership attractive, stable, and guaranteed business conditions. The second, not less important factor is the fact that this alternative has been accepted (as the predominant reindustrialization option) by more or less similar countries. Within this context, the existing economic interests (which prefer maintenance to radical change of the existing situation), the prevailing political and ideological orientation to the fordistic concept of the (re)industrialization, cultural parameters (which strongly oppose the new production values, such as quality, accuracy, co-operation, productive interaction, and the like), and general macroeconomic and social instability and uncertainty do not have a stimulating effect to its implementation. The results are in line with this.

To achieve the third (scientifically desirable) alternative, the following is necessary: (1) consistent understanding of the issue of contemporary development, (2) new, active and responsible role of regional executive government, and local authorities in public regulations of economy and economic development, (3) developed STIEOT infrastructure oriented to the needs of real economy, (4) harmonised activity of market, strategic-cooperative and hierarchical mechanisms of economic life regulation, (5) neutralisation of the activity of the distribution oriented coalitions, (6) wider risk acceptance, (7) creating conditions for the balance between individual and common interests, and, (8) higher motivation of employees and other population for life-long learning, especially at the position of work. Finally, its implementation is conditioned by social and political innovations in sense of constituting democratic, but, above all, responsible society, to environment and next generations, non-parasitic institution system, freedom of choice of any kind while observing basic ethic and spiritual values. In this context, development (in sense development of strategy the reindustrialization—the author's note) in this alternative is based on the regional, sub regional and local specifics, supported by STIEOT infrastructure, initiated by entrepreneurial and strategic cooperative initiative, and, formed by the competition and co-operation excluding the protection of monopolistic interests of any kind. Basic inputs within this alternative development include quality human resources, and innovative social and especially political institutions. The best route leading to it is through the second alternative.

From the technical point of view, the key goal of national reindustrialization is the implementation of the concept of the global commercialization based on the dynamic creation and development: (1) economic self-sustainable industrial enterprises and agricultural farms by exogenous standards of the global economy, (2) appropriate market infrastructures and specialized circles of commercial and financial capital oriented toward exports as the main source of profit, (3) appropriate non-productive infrastructures, and, (4) infrastructure for public regulation of business and development—which will, through public and private educational, developmental-research, production, traffic and financial activities provide relatively stable and stimulating conditions for the smooth functioning of the process of its expanded reproduction.

In compliance with this thesis, the analysis of the relationship between economy, and other activity strategies of national reindustrialization are treated as a complex set of inter-dependence between economic, technological and social phenomena (Fig. 1). From the methodological aspect, the (national) strategy of reindustrialization makes a socially organised and institutionally arranged process of cooperative co-ordination of decision making at a macro-level, on one hand, and at mezzo and micro-levels, on the other hand, in order to provide internationally competitive level of quality and process of final products of processing, and trade in industries through the development and implementation of business and technological innovations, and, new forms of social and economic organisation and division of labour.

In this context, the public regulation has two key tasks. The first is to create conditions for increasing the business efficiency of enterprises and agricultural farms, and the other, to create the socio-economic frame for improving

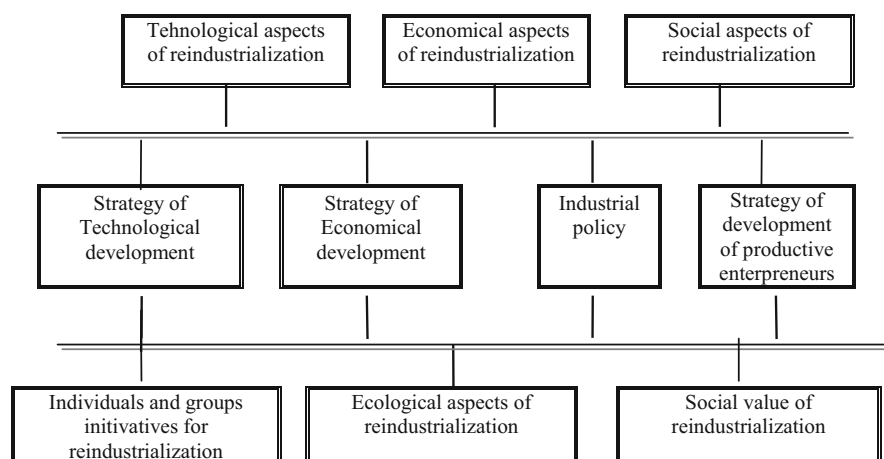


Fig. 1 Strategy of reindustrialization of the Republic of Serbia

performances of human capital and in cite generating and, especially, implementation and economic valorisation of innovations. The first is based on a project of networking and clusterization of both enterprises and agricultural farms, and the other on the development of poles of generic growth based on the development of strong and internationally competent research and educational institutions.

3.2 Networking and Clusterization Strategies as Determinants of the Strategy of Reindustrialization

In accordance with the basic thesis that no matter which product will be produced in Republic of Serbia, under the condition of self-reproduction in terms of open market economy, the basic condition for reindustrialization is that the structure of industry enterprises and agricultural farms has: (1) macro, mezzo and micro organizational structure and management system capable of efficient production and distribution of quality industrial products in sharp and unequal international competition, (2) adequate physical resources and personnel, (3) healthy financial structure, and (4) flexibility, which allows fast and efficient response to changes in natural, internal and external socio-economic environment. Provision of the above-mentioned performances is the product of the total social-economic efforts to integrate each industrial enterprise and agricultural farm into a complex, and hierarchically arranged net-system with four levels (Adžić 2006a, pp. 118–121).

The first level should include industrial enterprises and agricultural farms gathered in export macro-clusters organised according to the main production lines in the way that they provide economically and technologically efficient business

activities in circumstances of global competition, and other rigidities imposed by protectionist oriented commercial policy of the developed market economies.

The second level should include industrial enterprises and agricultural farms gathered in mezzo-reproduction units the core of which is located within the Republic of Serbia that would be provided the optimum regional or national division of labour and supply with physical inputs (in particular of sources of energy, basic reproduction, and raw materials, intermediary products, machinery, and equipment), and services (business services, services of transport, storing, and cross border transfer) under most favourable economic and technical conditions. In a wider sense, these mezzo-reproduction units should also include large trade companies, both on the side of supply with entrance inputs, and even more on the side of marketing, storing, transport, cross border transfer and placement on target segment of the global market.

The third level should include industrial enterprises and agricultural farms in institutionally arranged frameworks of national social-economical environment. Its basic task is the supply with human and financial capital, public goods, and, services of public administration in the way that would act as a stimulus on their behaviour in the sense of satisfying wider social-economic objectives—based on the criteria of enhancing product competitiveness, processes, economic entities, business and macro-reproduction units.

The fourth level should include industrial enterprises and agricultural farms in macro-reproduction units—in each (selected) segment of the global market. Its task is to provide each industrial enterprise and agricultural farm with economy of scale, and enhancing of development of such forms of production that can reach the level of efficiency, and competitiveness in terms of prices, and quality in the conditions of severe, and unequal international competition based on the available production factors, and those that will develop in future.

3.3 Development of Poles of Generic Growth as a Determinant of Strategy of Reindustrialization

In the exposed context, the implementation of poles of generic growth is, according to the authors, the second key active means of public regulation for the realization of the strategy of reindustrialization. Their main function is to connect researches and educations with the project of reindustrialization in accordance with the need to create conditions for wider application of the third development alternative. The poles of generic growth are set up to: (1) improve the research which has got a direct impact to education, especially in the function of improving the productive entrepreneurship, and application of modern technologies and organisational innovations in production, (2) increase the efficiency and effectiveness of obtaining, and, applying research results, (3) ensure necessary business and scientific support in contemporary knowledge and technology exchange, (4) ensure competence for

international co-operation in research, application of its results and advancement during work, and, (5) orient the entrepreneurship to the export industries. These five basic objectives define their mission, which could be most specifically determined as *excellence in research, education and production*. In this context, the poles of generic growth are needed, which will operate for a long time, in difficult manner, and perhaps, hopelessly in spreading the idea of the excellence of all around us, primarily; in research, education, development of new activities and enterprises within the export industries, and the improvement of the performances of the existing enterprises and agricultural farms by introducing new technology and organisational innovations.

From the presented objective structure, the basic principles of the institutional public regulations structure may be determined by four factors.

First, the development of poles of generic growth must be based on the (regional) Programme. The basic objective of the Programme is to, on the non-addressed basis, stimulate the sub regional and local initiatives, and ensure support for all candidates for the set up of the poles of generic growth—by integrating the existing ones, research, educational and production potentials checked by operation and results, which may be ensured from the region or through interregional trans-border co-operation for quite clear, accurate, and specifically based needs of actual producers.

Second, in order for the Programme for development of the poles of generic growth to be successful in promotion and support, the idea on excellence as the basic motto of their existence must be applied, and no interests and intentions must result in decreasing the standard for their measurement. Therefore, the authorities, bodies and individuals having impact to the determining of the excellence level in the process of the evaluation of the generic growth poles must not have the conflict of interest. The objectivity and competence of each evaluation and decision of the Programme are the one of the key conditions for the success of the public regulation.

Third, the innovation of the project content and mechanisms of the Programme must not be made only in the direction of institutional adjustment to the total social-economic context, but without any decreasing of the standards for excellence determination.

Fourth, since the Programme itself is the institutional innovation, introduced in the systems that already include high inertia, and delay in achieving the results, the Programme has got sense only if it is consistently implemented on the long-term basis, i.e. once the decisions are made, they must be implemented in a patient, consistent, and long-term manner.

In line with the conditions of the resources in the Republic of Serbia, the basic constitutive elements the poles of generic growth include are: (1) industrial enterprises, (2) public universities, i.e. faculties, (3) research institutions in public or mixed ownership, and (4) executive government (regional, local). Their role in this context is as follows.

First, the industrial enterprises introduce: (1) demand for research results, (2) demand for university educated personnel, and advancement of their employees,

(3) a part of the assets for the purpose of financing external researches, and, (4) human, and other resources for the support, and co-operation in research, and their implementation to their business, production, and development needs.

Second, public universities i.e. faculties introduce: (1) part of the work time of scientific-research potential satisfying rigorous international standards, (2) part of physical resources (facility, equipment) which may be applied for actual researches, (3) part of IT support in research and education, and (4) part of their offer for post-graduate education, and advancement at work.

Third, research institutions introduce: (1) scientific-research potential satisfying rigorous international standards, (2) part of all physical resources (facility, equipment), (3) available IT support in research, and; (4) specialised administrative and technical support.

Fourth, executive government introduces: (1) administrative resources necessary for the support, and co-operation in research, and their implementation into products, and technologies, (2) part of the funds for the finance of researches and advancements, and only exceptional subsidising of the costs of the evaluation of the research results into technology and products, and (3) the system of accurate and transparent operating quality evaluation within the segments of research, education, and economic evaluation of the research results using various forms of public support.

4 Conclusion

Starting from the findings that the successful completion of (post) socialist transition and of process of preparation for European integration, it is necessary to realize the strategy of reindustrialization based on changes in the structure of production-organizational, business and institutional system with respect to national, regional, sub regional and local specificities. From the point of view of this necessity, clusterization and poles of generic growth are very promising mechanisms to start this process from a standstill, through the integration of research, university education and production within local, sub-regional, regional and national frameworks. To realise this, it is necessary that the public support and backing are concentrated on the aid which has already been the coordinated efforts of the research sector, university education, and production to achieve the excellence which promptly and directly results in technological improvement, competitiveness and production development within the real sector in the Republic of Serbia. The predominant significance is, to a low extent, of material i.e. economic nature, and to a high extent, of cultural nature (confidence, accuracy, giving high significance to the future), and they are determined mostly by the institutional system (in the function of restricting the power of distribution oriented coalitions, and neutralisation of corruption mechanisms within public regulations), and the situation of the knowledge of the national population.

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