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DEVELOPMENT OF INDUSTRIAL DISTRICTS FROM ASPECTS OF QUALITY OF LIFE

Abstract: Industrial districts (ID) compromise goals of regional development and business. These goals dominantly were related to business goals of enterprises in a region, with including partly social goals. In ere of globalization it is not enough. In industrial zones community needs much more, especially according new milenium goals, quality of life, innovativeness, and so on. It is challenge for egisting and for development of new industrial district. In the paper is analyzed second approach from aspect of quality of life (QoL) request of regional stakeholders. Emphasize is on impact of QoL needs industrial district's aspects, as economic development human potentials, regional sustainability, business excellence, environmental protection, innovativeness and technological development, scientific development. Affter analysis of these impacts on designing of ID, in second part of the paper is presented model of ID development from aspect of QoL needs..

Key Words: Industrial district (ID), quality of life (QoL), development, model

1. INTRODUCTION

Industrial districts (ID) are regionally defined production and social systems, characterized by a large number of small and medium firms as well big firms that are involved at various phases in the production of different products families. Each firm is dominantly highly specialized in a few phases of the production process, and integrated through appropriate complex network in ID and worldwide [1].

The story of ID started from work of Marshall [2] and affer that in area of flexible specialization by Piore and Sabel [3]. Porter (1998) defined competitiveness forces and solution of complex network of interorganizational relationships [4]. In literature of ID many autors emphasized main critical success factors of ID as: (1) phisical and cultural proximity of many small and medium sized firms, (2) division of labor among firms, (3) presence within the area of complementary competencies and skills, (4) high degree of specialization of both firms and workforces, (5) deep relationship among firms with at the some time competitiveness, (6) presence of a dense network of social relationship based on dominantly face-to-face contacts, (7) easy and

information in the area [5]. In a new era the role of knowledge becomes more competitive advantage and now ID has to include much more sciences and innovative potentials in region and in environment to: (1) learn and adapt in rapid changing the environment, (2) fostering an interconnectivity, (3) manage a heterogeneity of different subsystems in ID, as well as (4) optimise a level of control. It needs much more involving ICT and using ICT resources for scrining, analysis, monitoring and control activities in ID.

One part of these activities is related to development of ID accoreling the needs and request of regional stakeholders related to QoL. Practically, these requests are partly included in design phase through business local, and regional representatives request, but it is not enough from aspects of QoL.

It is motive for the paper. Authors analyse in the paper model of impact of QoL on ID design, and vice versa, ID design and establishment on QoL performances.

For it used methods of requirements engineering and modeling of complex adaptive systems. Results of modeling are integrative model ID/QoL and submodels of ID and QoL with key relations for integration.

The paper is structured follows. After introduced analysis of *ID* from aspects of needs. The third chapter is concerned on *QoL* needs for regional firms. In fourth chapter is presented basic elements of applied methods and results of modeling.

2. ANALYSIS OF ID FROM ASPECTS OF FULFILLING THE STAKEHOLDERS NEEDS

For analysis of *ID* from aspects of fulfilling the stakeholders needs in the paper is used method of Requirements Engineering (*RE*). In some research papers requirements are viewed as base for development any system in whole Life Cycle [6]. So *Joung* defined 21 types of requirements. For *ID*'s stakeholders we recognize following types of requirements:

- business requirements,
- user requirements,
- business rules,
- functional requirements,
- performance requirements,
- kvalification knowledge and skills requirements,
- product/service requirements,
- proces requirements,
- logistic support requirements,
- environmental requirements,
- system, subsystem, and component requirements [7].

A choosing the requirements for project of *ID* is necessary to:

1. review related historical information,
2. review related organizational and regional politics,
3. identity stakeholders of *ID* project,
4. develop a strategy to involve customers, users and regional and state authorities throughout the development effort,
5. write (and iterate) a project vision and scope document,
6. develop a requirements plan,
7. provide for peer reviews and inspection of all requirements-related work products,
8. initiate a project glossary and a project acronyms list,
9. decide on the life-cycle approach to be used on the project (including *SWOT* analysis),
10. begin tailoring the corporate (or regional) requirements process,

11. establish a mechanism to evolve the real requirements from the stated requirements,
12. provide requirements-related training sessions for project participants, including all stakeholders,
13. rewrite the high-level system requirements as in initial steps,
14. initiate development of the real requirements on the stated requirements,
15. initiatedocumenting the rationale for each requirements,
16. establish a mechanism for incorporating changes in requirements and control of new requirements,
17. perform V & V planing (verification and validation),
18. select the practices, methods, and techniques that will be used to gather requirements,
19. make the requirements repository,
20. select and aquire the automated requirements tool,
21. lead the initial real requirements into selected requirements tool,
22. performs requirements gathering,
23. develop the tracebility strategy to be used,
24. identity the requirements that will be met in the first release (prioritize real requirements),
25. establish an approach for a proof of concept, prototype, or other approximation of work product or *ID* as whole,
26. incorporate requirements best practices and garner management support for effective requirements engineering, and
27. complete requirements gathering for the first release.

A stakeholders requirements are related to:

- economic development,
- human resources,
- sustainability of region (S),
- business excellence,
- environmental and technological development,
- scientific and education development,
- infrastructure development,
- ICT development, and
- quality of life (QoL).

All types of requirements have to be translated into project of *ID*. In this paper is analyzed the last requirement which is „ambrella“ for previos none requirements.

3. A DESIGN OF ID USING INTEGRATED QUALITY APPROACH

One of fundamental principle of a quality approach is orientation to stakeholders or interested parties, including leadership/management, employees, suppliers.

In integrated quality approach are also included other requirement related to environmental protection, resilience or business continuity, competitiveness or business excellence [8], sustainability, effective development and change management, safety and security, etc [9;10;11;12;13;14;15].

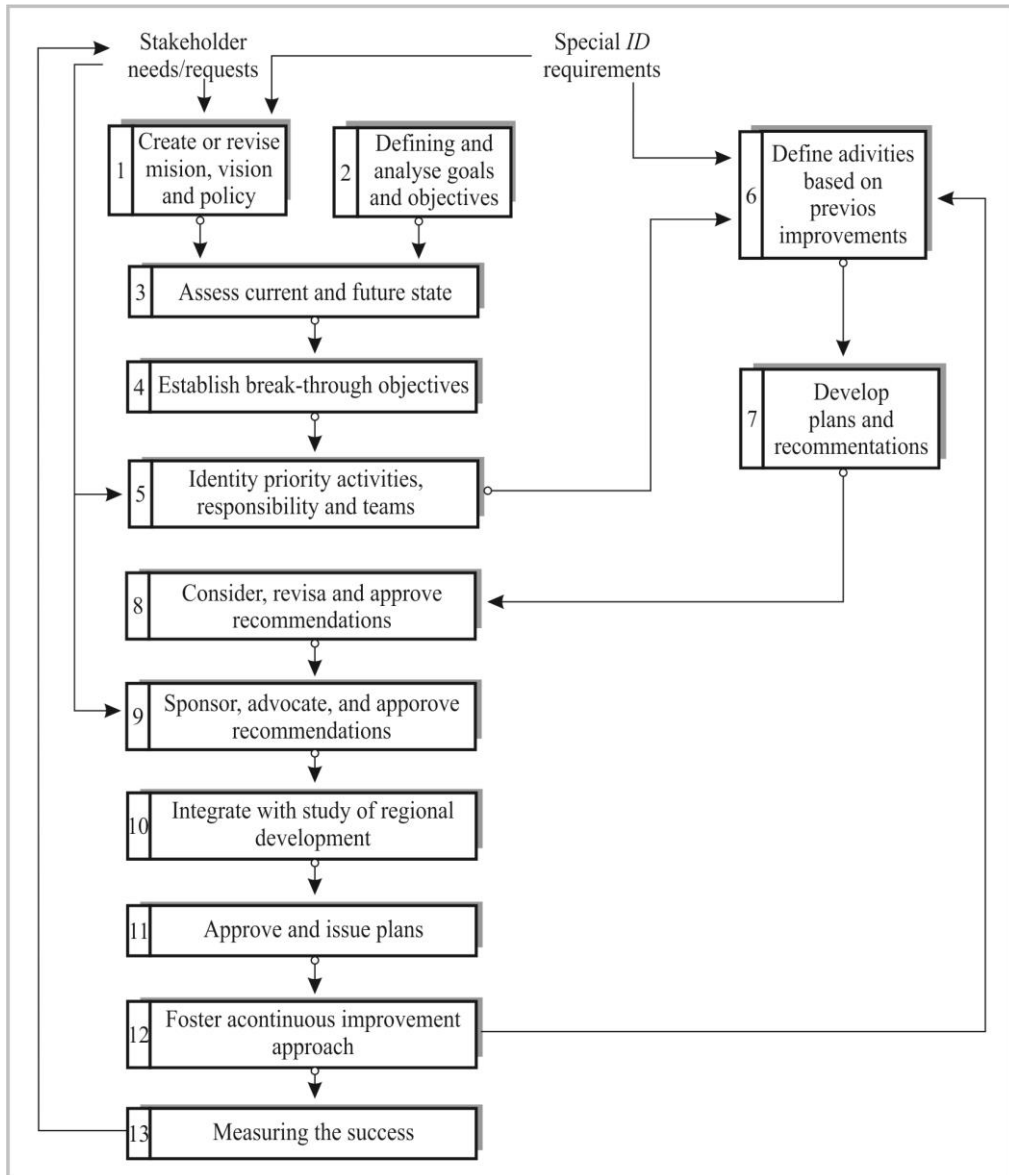


Figure 1. Deciding flow using integrated quality approach

In figure 1 presented are steps and components of an integrated quality approach. In this approach is started from stakeholders needs/requests based on present or future needs/ requirements and level of success during works of *ID*. In proposed 13 phases is defined quality aspects and improvement process of quality in *ID*. It beginning with creation of mission, vision and policy and ending with measuring of success for closing quality loop.

At the top of the figure are presented a special *ID* requirements. They are presented in next chapter.

4. QUALITY OF LIFE AS ENABLER AND OUTCOME OF INDUSTRIAL DISTRICTS

A quality of life (*QoL*) is based an fulfilling human needs and subjective well-being through integrating oportunities [16]. In their research human needs are selected into:

- subsistence,
- reproduction,
- security,
- affection,
- understanding,
- participation,
- leisure,
- spirituality,
- creativity/emotional expression,
- identity, and

- freedom.

In industrial districts (*ID*) is recognised following opportunities:

- regional/state global development,
- sustainability improvement,
- clear environment,
- competitiveness improvement,
- infrastructure development,
- agglomeration of resources,
- knowledge and innovativene development,
- resilience improvement,
- effective integration in global economy,
- better integration industry with other sectors, etc,

In figure 2 is presented proposed model of integrating *ID* and *QoL* (*ID/QoL*). In first step *ID* authority analyze and select oportunities related to *ID*, based on previos list of oportunities. In second step has been analyzed human needs and generated matrix oportunities/human needs, with explanation relationships among them. It is impact for design and establishment of *ID* (step 3). After realization business and other processes in *ID* in 4.step is possible to measure subjective well-being (*SWB*) and calculate or ass-ess impact of *SWB* on society (step 5). During functioning the *ID* in society and *ID* is expected to happend changes and is necessary to predict and/or assess/simulate its (step 6). It is input for creating new policy of *ID* with respeding oportunities of *QoL* [17;18;19].

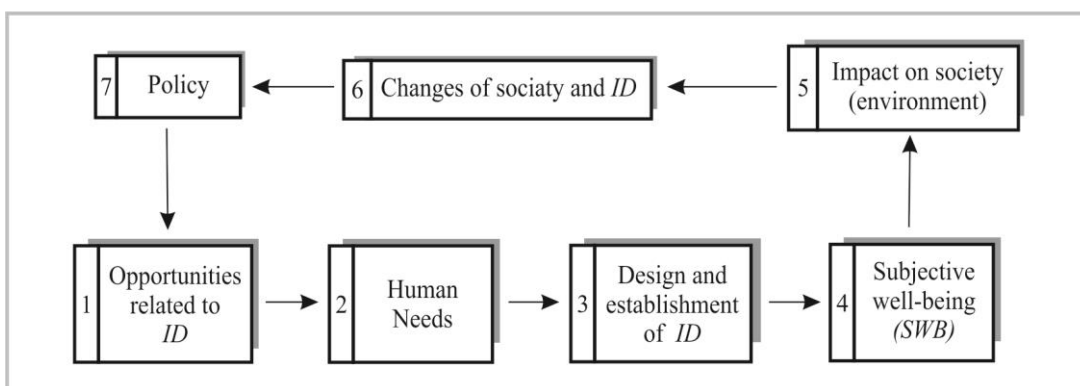


Figure 2. Integrated model of *ID/QoL*

5. CONCLUSION

Industrial districts are form of agglomeration of resources on regional basis

and have been related to *QoL* oportunities. In this paper are presented some relations among them i approach for integration *ID* and *QoL* into *ID/QoL*. It is significant for existing *ID*'s,

as well for future ID in phase of development.
In future reserch will be created simulation

model for development of ID for Central
Serbia, based on QoL oportunities.

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