

Chapter 20

Preconditions for Requisite Holism of Information Bases for the Invention–Innovation Process Management²

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ABSTRACT

Innovation belongs to main open issues of the modern business. Information for the invention-innovation process is an even more open issue, because informed guessing about the future needs of future potential customers is a best case scenario. This is especially true in SMEs with their limited human resources, but the market provides no allowances for them anyway. SMEs are 99% of all organizations in EU or Slovenia. They provide +50% of jobs and +70% of new jobs. But they can hardly survive with no or poor innovation capacity, including a requisitely holistic consideration of the entire invention-innovation-diffusion process. The information system must be adapted to this fact in order to support business quality in line with the demands of the modern rather global than local market. But the usual enterprise information systems cover better the daily routine and past performance than future and innovation issues.

BACKGROUND: THE SELECTED PROBLEM AND VIEWPOINT

The Economist (2007) states that it is time for humankind to stop considering innovation process

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as an art and to start viewing it as a science. This trend requires a requisitely holistic information system, unlike art. Our experience has confirmed both statements long ago (e.g. Avsec, 1986; Likar, 1998; Mulej et al, 1987; Mulej et al, 1994; Mulej et al, editors of PODIM conferences since 1978; Mulej et al., 1979; Uršič, 1993). An M.A. and

doctoral program in innovation management has existed at the University of Maribor, Faculty of Economics and Business since 1987, including also the innovation topics as a course in the only MBA program we know of. Here we will not report about this experience, but on findings resulting from it: a dialectical system of viewpoints of the invention-innovation-diffusion process (IIDP), and information support to it, which we have not detected in literature.

We will, of course, apply the Mulej/Kajzer's (1998) law of requisite holism, depicted in Table 1 (Potočan, Mulej, editors, 2007d, and earlier; Mulej, 2007a). A total holism cannot be attained as expected with holism as worldview and existing related methods (Bertalanffy, 1979). This model can well support the innovation-related part of an enterprise information system, especially in its organizational dimension. We do not talk about information as a technological topic, but its organizational and social preconditions, with direct application of technology in order for the organization, such as an SME to attain innovation-based competitiveness. The process is complex, but a requisitely holistic information system can help the innovative part of business to be better integrated in the overall business process.

THE INVENTION-INNOVATION-DIFFUSION PROCESS (IIDP)

Innovation starts with idea that is able, after research, to become innovation in development and marketing/application processes, and then

yield benefit to authors, too, not only to users, in a diffusion process.

To create ideas we need to manage the environment for idea creation (Pečjak, 2001). The people - employees who are the most creative have some common characteristics. The creative process has certain features and managers need to know them and respect them.

The process of creating ideas is performed by individual thinkers and supported by their creative cooperation in interdisciplinary teamwork. There are people who were born, raised, developed, educated, and/or trained into more creative person. There are several characteristics of creative spirit (Pečjak, 2001): non-conformism, originality, flexibility, ingenuity, fluidity of thought, elasticity (verbal, associative, ideal, expressive), perseverance, connection between creativity and humor. Some of them may make the co-operation process difficult, before team members learn to listen to each other due to their mutual differences and hence develop their ethic of interdependence (Mulej et al, 2000; Mulej, Kajzer, 1998; Potočan, Mulej, 2007).

Thus, in organizations one needs to encourage, guide and manage creative processes and perform creative activities as guided group activities. The IIDP should be recognized as a complicated and complex process. To overcome one-sidedness and the resulting mistakes we suggest the application of the Dialectical System Theory (DST) as developed by Mulej (1974, and later, including 2008). Thousands of cases have proven its value.

Dialectical system (Table 1, middle part) should be the basis for interdisciplinary co-operation of many different specialists working together on

Table 1. The selected level of holism of consideration of the selected topic between the fictitious, requisite, and total holism

←-----→		
Fictitious holism (inside a single viewpoint)	Requisite holism (a dialectical system, DS, i.e. synergetic network, of essential interdependent viewpoints)	Total = real holism (a system, i.e. synergetic network, of totally all viewpoints)

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