

CAPACITY OF COMPANIES TO ABSORB SUGGESTIONS FROM GOVERNMENT: THE CASE OF INVENTION FROM RESEARCH ORGANIZATIONS IN EUROPE, E.G. IN SLOVENIA¹

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Abstract: Europe lacks competitiveness due to lack of innovation. Reasons include a defensive businesses' response to governments' and EU's suggestions, even to the theoretically correct ones. Governments and EU lack innovation and holism in their own actions, although EU requires innovation and systems thinking in its documents. We suggest a dialectical system of viewpoints to make the approach requisitely holistic in order to make people in businesses more responsive. (1) The feeling of interdependence, i.e. mutual need for each other, is a precondition, which requires the practice of systems approach. (2) The government, including public and para-state organizations, acting as a big buyer in the modern buyers market, might be one way toward a solution, although not a simple one: it requires (3) the government people to change themselves innovatively in order to act as role models, e.g. by managerial, organizational and methodical innovations rather than by technological ones. (4) A further suggested solution's component is application of innovation management, which avoids imposing of novelty by involvement of novelty users in its making, and (5) considers the theory of novelty diffusion, completed up with (6) heart storming methodology to persuade and attract. In Slovenia, in 2005-6 government attempts to introduce economic reforms; its representatives are aggressive rather than working hand in hand with businesses (except the big ones, which make only 0,3 percent of all business subjects) and people who may lose benefits of so far such as students, trade union members, and retired ones.

Key words: absorption capacity, dialectical system, diffusion of novelties, government, heart storming, requisite holism, systems thinking

0 THE PROBLEM AND OUR VIEWPOINT FOR DEALING WITH IT

The European Union (EU) has been seeing for quite some time its trouble with competitiveness, because it has had trouble with its innovating as a process and innovation as its outcome (Miege, Mathieux, eds., 1987 and 1989; EU, 1995). Newer research shows a poor improvement (EU, 2000). Recent research provides no basis for satisfaction either (... , Lisbon, 2004; Sporcilo, 2006). The transfer of the topic of innovation into the Directorate General has not helped enough (so far), obviously. The problem does not lie in theoretical models only, what ever level of scientific quality they attain. It lies neither in their inclusion in the macro economic institutions / measures only, but to an equal extent in the responses of people to them. In its documents (Handbook, 2004; EU, 2004), the EU admits serious differences in cultures of e.g. universities, on the one hand, and companies, on the other hand. EU requires universities to work in partnership with businesses. EU requires universities (only!) to rethink their strategic orientation and to include working with businesses in it (Handbook, 2004, p. 38-39). Other researchers see that the problem may lie equally with a large majority of enterprises: among them about 93 percent are micro (under ten employees), about 6 (six)

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percent are small and medium sized, and 0.3 (three tenths) percent employ more than 250, totaling 48 % (Rebernik et al, 2004). Thus, a big majority (99.7%, employing 52%) of enterprises may lack absorption capacity for suggestions, including invention and innovations, from research organizations and governments due to their size. The problem concerns the old and even more the new EU member countries, e.g. Slovenia.

1 THESIS: GOVERNMENTS PRESCRIBE BUSINESS BEHAVIOR WITH A POOR CONSIDERATION OF THE CULTURE OF THE LATTER AND THEM-SELVES

Let us see government reforms as inventions supposed to become innovations! Effective and successful management of innovation processes, including pioneering R&D activities, is undoubtedly one of the greatest development challenges facing e.g. Slovenia today (Likar, 2001; Likar, 2002; _elan et al, 2002). The EU is well aware of the above problems. Through various programs, including its new member states as countries in transition, too, EU is striving to improve its existing situation. But EU is not happy with results. Government of Slovenia is trying to do more then earlier with a new reform program (Vlada, 2005 a, b, c). Discussion reveals mixed feelings of people, trade unions, and businesses (many texts in general press show it). Government does not seem to apply innovation management and/or systemic thinking.

Hence: is government persuasive enough; are there in businesses enough people able to absorb e.g. inventions from universities and suggestions from governments? They are not so, according to our empirical research covering 17 years, the pattern consisting of graduate students of MBA and innovation management at EPF that analyze various firms. Problems arise in the implementation processes of the invention-innovation chain, too (Kro_lin, 2004). All chain must be mastered and accomplished in order for an idea/invention to succeed as an innovation. This process is long, demands persistence in fighting the obstacles, and is poorly supported both by the traditional culture and the given institutions. Government needs a more holistic innovation policy; here, in e.g. the present situation in Slovenia, there is much scope for improvement (Bu_ar, 2003; Gider, 2004; Mulej, 2003; Mulej, 2003a; Mulej, 2003b; Mulej, 2003c; Mulej, 2006, forthcoming).

Another problem, which economists and governments tend to disregard, is the following: if power holders impose novelties or anything else, the problem is not only in novelties and fear of the people about the unknown rather than familiar attributes and situations; equally important is their natural opposition to any imposing, unless the imposing party / power holder enjoys a big trust. Thus, a power holder trying to introduce e.g. institutional reforms in a society or economy, faces the following dilemma: (1) People prefer the established way to novelties, unless they perceive and believe that the crisis is crucial and their leaders are fully trustworthy (which is very unusual); (2) People oppose imposed novelties, even innovations that have already worked well somewhere else («But they differ, we are specific.«). The way out has been known from literature on innovation management for eight decades (Mogensen, 1980): people do not oppose, but support novelties, if they (co)author them. In other words: people prefer the feeling of being considered as influential and creative partners/authors. This tends to be strange to power lovers in power holding positions: hence they cannot succeed.

Thus, much remains to be done in government, research institutions and in businesses, especially small and medium sized ones (SMEs) in the EU, especially in its new member states such as Slovenia. What do we suggest? Let us first take a look at the roots of the problem. Otherwise we risk offering a fictitious rather than requisitely holistic solution.

2 LACK OF TRANSFER AND ABSORPTION CAPACITY IN EUROPE

We will not elaborate the theory of the two-generation cycles (see: Mulej, 1994; Mulej, 2004) here, although it can help us to explain the current situation. Rather, we will point out the coincidence of two major processes, which the current European and Slovene reforms tackle when trying to make a knowledge/innovation based economy and society:

- Universities in Europe are proud of being very old institutions, having their roots in the middle Ages. This fact means: university culture was created, when businesses did not really depend on universities or scientific research, nor did universities depend on businesses, but rather on government (Fazarinc, in Kobal, 2003). The Humboldt reform changed universities a lot, especially toward working on professions and specialization of their students; but it did not do enough to overcome their tradition of separation from business. Innovation has remained rather strange to most higher education, although a lot of invention has been taking place there. Hence, few professionals and their co-workers in businesses receive enough absorption capacity in school.
- The most entrepreneurial Europeans started leaving Europe, for the USA especially, in the 18th century. On this basis, in 1860s (one two-generation cycle after the USA's legal independence from the UK) the Civil War changed the orientation of the USA. Instead of agriculture and slavery as the dominant economic and social activities, democracy, entrepreneurship, manufacturing industries and urbanization prevailed. Many people from around the world were offered a chance to work and make money in the USA, while in Europe, e.g. in Austria-Hungary (including Slovenia of today), there were hard times. One speaks of the Vienna financial crisis of 1874 (Encyclopedia, 1964, p. on Slovenia). Slovenia, e.g. lost 20 (twenty) percent of its total population in the four decades before the First World War. Of course, the most entrepreneurial, not the idle, persons left (ibidem). This percentage is higher than the percentage of population in the legal role of entrepreneurs today (see: Mulej, 2005; Rebernik, 2004). Germany or UK lost only about 3 (three) percent (Bo_kovi_, 2006).
- Governments have mostly ordered people. Democracy from ancient Athens times cannot work today: there are many more people around and entitled to participate, but busy with other jobs (Geyer, 2005). Governments' management style hardly meets demands of the innovation management theory. Invention rather than innovation theory / practice only is covered in most of literature called innovation theory: creation rather than implementation of novelty is tackled (see e.g. Gu, Chroust, eds, 2005; Jensen, 2003; Rogers, 1995; etc.).

Thus, in recent decades Europe has had a rather good education, the USA has had most Nobel Prize Winners, and Japan has had most innovations, not only inventions (Mali, Bu_ar, 2003-04; _enko, 1999). This fact causes the need for the »National Innovation Systems«, benchmarking of the RTD institutes etc. (see e.g.: Borsi, Papanek, eds., 2004). Europe is lagging behind in application much more than in science (Adamson, 2003; Amram, 2003; Beer et al, 2004; Bick, 2004; Birley, 2002; Brandyberry, 2003; .. Building .., 2004; .. Competition .., 2004; Dimitratos et al, 2004; Hospers, 2004; .. Inviting.., 2004; Lal, 2002; Marren, 2003; Reynolds, 2003; Rolfo, Calabrese, 2003; Rosi, 2004; Roth, 2003; Sharkie, 2003; Thurik, 2002/03 – all quoted in Mulej, forthcoming).

What could be done, if one uses systems thinking and hence strives toward the requisite holism of suggestions? What do we mean by systems thinking and requisite holism?

3 SYSTEMS THINKING AND REQUISITE HOLISM

We will only brief these notions here; recently, we published about them several times (Mulej et al, 2004a; Mulej et al., 2003; Mulej et al, 2004b; Mulej et al, 2005 a, b; Mulej, Poto_an, 2004; Poto_an, Mulej, Kajzer, 2005; Treven, Mulej, 2005; Mulej, _enko, 2004; Mulej, 2006).

The systemic approach is supposed to enable people to think along the lines of the left column in Fig. 1. The point lies in prevention of oversights and resulting mistakes, including World Wars and World Economic Crises, the climate change problem, etc., but also a number of mistakes with less broad consequences, such as bankruptcy, car crashes, etc., by holism.

No	Systems / Systemic / Holistic Thinking	Un-systemic / Traditional Thinking
1	Interdependences, Relations, Openness, Interconnectedness, Dialectical System	Independence, Dependence, Closeness, A single viewpoint/system
2	Complexity (& Complicatedness)	Simplicity, or Complicatedness alone
3	Attractors	No influential force/s, but isolation
4	Emergence	No process of making new attributes
5	Synergy, System, Synthesis	No new attributes resulting from relations
6	Whole, Holism, Big Picture, Holon	Parts and partial attributes only
7	Networking, Interaction, Interplay	No mutual influences

Figure 1: The Seven Interdependent Basic Sets of Terms of Systems / Systemic / Holistic vs. Un-systemic Thinking (as a dialectical system)

A (total) holism was the (very justified!) requirement of the first author of General Systems Theory (GST) – Ludwig von Bertalanffy (1979; on page VII he explicitly says that by GST he attacks the current over-specialization; later on he says that he wants holism to be a worldview, not one of many scientific disciplines). Humans do not have the capacity to be totally holistic: to cover every attribute, not only every essential one. The Mulej/Kajzer (1998) law of requisite holism describes this natural fact. On the other extreme, people hardly can do a good job, if they limit themselves to a single viewpoint, e.g. inside a single profession and specialization, and do not co-operate with people who see the same processes differently. The right way is the middle way, the one of requisite holism. But people, who decide on selection, must take responsibility for choosing a dialectical (i.e. interdependence-based) system of (all essential!) viewpoints of one kind rather than of another kind (For details see: Mulej, et al, 2000; Poto_an, Mulej, 2005; Mulej, Poto_an, Kajzer, 2005; Mulej, 2006).

In the case under consideration here, this means the same approach as in all other cases: authors must and may decide, with their full responsibility, what will be included into their dialectical system of viewpoints, and what will be left out (but will not stop existing and making its influence!). For a total holism the authors would have to cover all professions, which are said to be about 100.000 (one hundred thousand). Thus, the way out of this problem is a team's or a person's double capacity:

- (1) To be a specialist in a single profession, in order to know enough from a selected viewpoint;
- (2) To be capable of systems thinking as a methodology of creative interdisciplinary co-operation, rather than as a methodology of a sophisticated description of findings inside a single selected viewpoint.

What viewpoints may be found essential in the transfer and absorption of suggestions from government and from research organizations and supposed to be applied in businesses and other »real-world« organizations? And how are these viewpoints inter-related?

4 BUSINESS ABSORB GOVERNMENT SUGGESTIONS AND KNOWLEDGE FROM RESEARCH ORGANIZATIONS SOMETIMES ONLY

Many Western researchers of these problems assume that the market pressure alone makes businesses willing and able to absorb whatever new government suggestion and/or knowledge shows up. Businesses only need to feel that their application of this knowledge will increase

their competitiveness and be entrepreneurial, because this is rational behavior (Damijan, 2005). Therefore, they claim, it is the role of government (1) to remove obstacles for competition and (2) to invest in education and training in capabilities, which are needed for people to cope with the ever more demanding markets of products and services (Bevan et al, 2004; Dakhili, de Clerq, 2004; Editorial, 2003; Kloosterman, 2003 – all quoted in Mulej, forthcoming). This may be true, if businesspersons are entrepreneurial rather than routine lovers and if the general population prefers: (1) competitiveness to solidarity, and (2) permanent change, including innovation, to a peaceful life. Such culture can be found in innovative societies much more than in the other 80 (eighty) percent of the world population of today (e.g. Dyck, Mulej, 1998; current discussion in press about reform in Slovenia). Only about ten percent of the smaller businesses, which make 99,7 % of all enterprises and 52 % of all jobs, have ambition to grow (Rebernik et al, 2004). But government presupposes such an ambition by its homo oeconomicus supposition (E.g.: Vlada, 2005 a, b, c).

Yes, removing obstacles to competition works, if people know, want, and can do their business under competition. How badly the removing of obstacles fails otherwise, has been shown by Gorbachow's perestroika in Russia. Similarly bad was the experience of the early capitalism of the 18th and 19th centuries. Then the two World Wars and large economic crises – throughout the 20th century – provided the lesson that creditworthiness pays better than one-sided unreliability of and to partners (Ackoff and Bevin, 2003; Etzioni, 2004; Greer, 2000; Knez-Riedl, 2003; Knez-Riedl, Mulej, 2004; Rozman and Kova_, eds., 2004; etc. – all quoted in Mulej, forthcoming). The conclusion: modern values and knowledge, including know-how, are interdependent and make a dialectical system of essential preconditions for the institutions to work properly (see: Abramowitz, 1986 and 1991, in Bu_ar, 2001; E_imovi_, Mulej, Mayur, 2002). If human capacities and ambitious entrepreneurial values are above-average in an organization, then it is able to combine even the traditional sources and assets in new, unique, even innovative ways and offer its customers an above-average benefit. This may last for a long period of time, even if other sources of such an organization are not unique. The human capacities are unique and competitors can hardly copy them. Even if they buy them, it takes time for the buying companies to be able to really use them, because adaptation to new circumstance is necessary (Colins, 2001; Collins, Porras, 1997; Mulej et al., 2002; Ozinga, 1997; Poto_an, 2003; Sharkie, 2003 – all quoted in Mulej, forthcoming).

In the early stages of the making of modern society one still sees the prevailing of a routine-based business (needing no research or science). An innovation-based business means e.g. that: (1) businesses consider research organizations as their own (part-time) researchers and developers, i.e. research and development partners; (2) businesses depend enough on innovation to feel their need for co-operation with research organizations; (3) businesses influence universities and require them to develop innovative capabilities of their students rather than routine ones or inventive ones only; (4) business add specific on-job training of their own later on, including profession, creativity and (interdisciplinary!) co-operation capacity; (5) both research organizations and businesses clearly see the difference between markets of inventions, potential innovations, and innovations, respectively; (6) both of them balance their technological and organizational development; (7) both of them work toward development of ambitious values 'at home' and in the general population; (8) both of them consider innovation as the basis of socio-economic development and good life; (9) both of them work toward development of an entrepreneurial spirit in the general population and entrepreneurial capacity with requisitely many individuals; (10) both of them work on diffusion of inventions - suggestions, potential innovations, and innovations; (11) both of them work on their own perception of their differences as complementarities rather than obstacles to their co-operation (Adamson, 2003; Beck, 2003; Bick, 2004; Bird, 2002; Bellido,

Bejar, Machin, 2003; Boisot, 1999; Brockhoff, 1995; Bucar, Glass, Hisrich, 2003; Cox, Muller, Moss, 2002/03; Davidson, Honig, 2003; Dyck, Mulej, 1998; E_imovi_, Mulej, Mayur, 2002; Ferk, H., 2003; Germ Gali_, 2003; Kavanagh, 2003; Klinar, 1999; Leder, 2004; Marki_, 2004; Martins, Terblanche, 2003; Mulej, N., Mulej, M., 1999; Pezdir, 2003; Pivka, Mulej, 2004; Preston, 2002/03; Rebernik, 2003; Rebernik et al, 2004; Rebernik et al., 2002; Rebernik, Mulej, Rus, eds., 2002 and 2003; Rogers, 1995; Rozman, ed., 2002; Schwarz, 2003; Steinman, 2004; Turk, D., 2003; Ur_i_ et al, 2000; Wong-MingLi, Millette, 2001 – all quoted in Mulej, forthcoming). Thus, invention as a new promising idea can become an innovation as a new benefit (for difference see: EU, 2000, p. 4).

In the early stages of the making of modern society one still sees a routine-based society, including the new EU member countries of today. But the modern competition requires an innovation-based society. This means that (1) there are more students of engineering and natural sciences than today, but they also learn about entrepreneurship and innovation and their need for interdisciplinary creative co-operation with social-sciences professionals (on their shared path toward requisite holism); (2) managers and politicians believe their society and themselves need innovation and entrepreneurship for survival, and support them; (3) life-long learning and training is a normal practice; (4) there is a clear link between science and daily practice; (5) there is education in entrepreneurship and innovation; (6) research organizations also are entrepreneurial, including having units for working on diffusion of their achievements in the business world; (7) managerial and organizational style is less based on subordination and more on a co-operative activation for innovation and entrepreneurship; (8) there are not the technological innovations only, but innovation means every novelty that is found beneficial and used by customers; (9) there is a lot of work on trustworthiness; (10) ethics of interdependence prevails over ethics of dependence and ethics of independence (Ackoff, 2001; Ackoff and Rovin, 2003; EU, 1995; EU, 2000; EU 2004; and several references quoted above).

Further on, in the early stages of the making of modern society one still sees self-sufficient organizations, including in the new EU member countries of today. A culture open to suggestions for cooperation from individuals, researchers, the educational system, and others offers more chances of development. On the one hand it represents a source of new ideas and solutions, while on the other hand the organizations can thus influence further activities within schools/faculties and improve possibilities for future cooperation. But most frequently they lack knowledge and skills to create the innovation from their inventions, which is particularly evident in e.g. Slovenia's high-technology sectors (Dolin_ek, 2002). The causes include an inappropriate, too one-sided, education system lacking systemic thinking.

Creating an innovative culture in organizations and societies can be aided by transforming the marketing departments of businesses from selling only to also providing information on and to research organizations, and thus serving as the bridge between businesses as customers and partners of research organizations and these organizations. (Afuah, 1998, and several above references – in Mulej, forthcoming).

Further more, the new EU member countries of today (except Malta), have since their break from Stalinism in the Soviet Bloc or Tito's combination of economic development with exaggerated solidarity in Yugoslavia, expected too much from the introduction of private ownership as the main means of progress. But private owners, in this early phase of development, are neither necessarily entrepreneurial (in the Schumpeterian sense) nor stakeholders-oriented, i.e. requisitely holistic rather than too one-sided in defining their interests (Hrast et al., eds., 2006; Rebernik, 2003; _enko, Mulej, Marn, 2004; and several above references – quoted in Mulej, forthcoming). Innovation in their ways of working may make them more entrepreneurial, holistic and innovative (IBM, 2006).

5 GOVERNMENT MUST INNOVATE ITSELF FIRST

Thus, the most crucial of all novelties to be suggested, resulting from our research is the following:

- In accord with its role as the general coordinator and manager of the most general issues of a society, the government defines the framework conditions, including the ones related to the transfer and absorption capacity concerning novelties aimed to become innovations.
- Government can act in this role by commanding, subsidizing, enabling, allowing, but also by buying; the latter role may be the best choice in this case.
- Therefore, government can and should define in its procurement rules concerning supply to all government offices, medical, educational and other public organizations, that only the most innovative organizations are admitted as suppliers. The governmental suppliers must use the ISO 9000 rule and demand innovation from their own suppliers, which demand the same from their suppliers, throughout all the value chain and society.
- Government must become a role model of innovation to be persuasive to businesses. It can do so, once it admits that its organization of work processes and its management style can and must be innovated. Methods are known, so are cases of good practices.
- Government can and must apply diffusion of innovations / novelties (Rogers, 2003) and combine it with heart storming (Jensen, 2003) to make its suggestions accepted.

(See: Mulej, forthcoming; Mulej, 2006b; Mulej, _enko, 2003c; Mulej, Knez-Riedl, Poto_an, _enko, 2003a, and 2003b, for details).

These suggestions may start to work in a rather short term. According to experience of both the EU and Slovenia, the lack of innovative and entrepreneurial spirit cannot be altered with simple and short-term activities alone. The lack of knowledge is probably not the most critical problem. It is much more difficult to change the values, culture, ethics, and norms, which are the basis of thinking (Zver et al., 2005; _enko, 1999; _ivko, 2005).

6 SOME CONCLUDING REMARKS

It is a lack of holism, if only universities are required to change in order for businesses to receive, accept, and use much more of the suggestions from government and research institutions in solving their own practical problems. This requirement might be sufficient, if the vast majority of enterprises were not SMEs and lack the human, organizational, and material resources for the researchers' attempts to transfer knowledge to enjoy successful absorption in SMEs. Most of them lack insight and trust in universities and government.

It is important to understand interdependence and the holistic approach in two ways at least. Firstly, it tackles the government, »academic« and the »real worlds«. Each of them works on another viewpoint of life, which makes them different and hence need each other. But they lack knowledge about each other. Secondly, shared projects are their best way to ethics of interdependence and thus to interdisciplinary creative co-operation between them, including absorption capacity of all three of them for mutual influences concerning innovation. This is the best way for Europe, including Slovenia, to become requisitely holistic and innovative.

The government acting as a big buyer in the modern buyer's market might be a crucial part of the way toward a solution, although not a simple one. It requires a lot of change in the culture of the government bodies and public organizations. But the alternative is even more complex – the lack of holism and the lack of an innovative change causing Europe to keep being and becoming even more an old lady rather than the most dynamic and innovation-based economy of the world. Governments must learn on innovation management in order to make their economic reforms acceptable and work.

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