Organizational innovation in health care - as a process

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ABSTRACT

Slovenia, like most countries of the modern world, spends too much on its public health care and supplies too little public health care services for the government, economists, politicians, and citizens to be happy. The many reforms of the public health care, e.g. in Slovenia, seem to be inefficient, one after the other, in solving this problem. Reforms have been conceived with a too poor consideration of the law of the requisite holism in decision preparation, decisions making and decision implementation. The article tackles procedure of implementation of reforms as inventions are supposed to become innovations in the public health care organization and management, rather than reforms’ content. Combination of the absorption capacity, innovation promotion and diffusion is suggested for the requisite holism of implementation.

Key words: dialectical system, diffusion of novelties, government, innovation, the public health care, requisite holism, systems thinking

REVIEW

INTRODUCTION – THE SELECTED PROBLEM AND A VIEWPOINT OF DEALING WITH IT

Research in process (1,2) following an earlier one (3) lets us find efficiency of the public health care organizations (HCO) in Slovenia relatively poor: the same services could be provided with one third of the current funds, if Singapore’s efficiency was attained (4). In order to succeed, the new reforming models, which are officially presented, whatever their professional quality, might better be considered inventions/suggestions supposed to become innovations, i.e. novelties accepted as beneficial by their customers. Their implementation should receive more attention. We will brief what and how could be done, if one used (the dialectical) systems thinking in order to attain the requisite holism of suggestions and actions. The selected problem seems to have its concrete roots in one-sidedness of the decision makers as unavoidably narrow specialists, who lack capacity of interdisciplinary co-operation, e.g. among medical doctors and other crucial professions in public HCOs.

REQUISITE HOLISM AND THE DIALECTICAL SYSTEM THEORY

In general, one may say, that systemic thinking practices holistic thinking, decision making, and action; it is millennia old while systems theory formally surfaced in 1940s, after the 2nd World War. For millennia, successes have always had their roots in (informal) holistic thinking, and failures in one-sided thinking, be it world wars, research, business, health care, education, attempts to innovate, or any other humankind’s practice. Bertalanffy lived through both world wars and the economic depression between them; as a biological scientist and philosopher in Vienna he must have noticed that the trouble of humankind has the common denominator in one-sidedness resulting from over-specialization (Bertalanffy explicitly says that he attacks the over-specialization) (5). His teaching that the General Systems Theory should become a generally accepted world-view of holism and methodology supporting it, rather than one of many narrow scientific disciplines, did not win its battle over the narrow specialization. The latter is unavoidable with the enormous amount of knowledge of today – individually, but not in teams, about which Bertalanffy did not write. As a way out of the trouble we suggested the dialectical (i.e. interdependence-based) systems thinking and requisite holism here, because we have published papers about them recently several times; the point is in a synergy of interdependent different viewpoints (Table 1) (6-12).

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<thead>
<tr>
<th>Systems / Systemic / Holistic Thinking</th>
<th>Un-systemic / Traditional Thinking</th>
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<tbody>
<tr>
<td>Interdependences, Relations,</td>
<td>Independence, Dependence,</td>
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<td>Openness, Interconnectedness,</td>
<td>Separation, A single viewpoint/</td>
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<tr>
<td>Dialectical System</td>
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<tr>
<td>Complexity (&amp; Complicated-ness)</td>
<td>Simplicity, or Complicated-ness</td>
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<td>Attractors</td>
<td>No influential force/s, but</td>
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<td>isolation</td>
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<td>Emergence</td>
<td>No process of making new</td>
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<td>Synergy, System, Synthesis</td>
<td>No new attributes resulting</td>
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<td>from relations</td>
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<td>Whole, Holism, Big Picture,</td>
<td>Parts and partial attributes only</td>
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<td>Holon</td>
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<td>Networking, Interaction,</td>
<td>No mutual influences</td>
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<td>Interplay</td>
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Interdependence of medical doctors, nurses, economists, managers, human resources experts, psychologists, sociologists, social workers, technical maintenance and other engineers, lawyers, cleaners, ambulance drivers, patients, potential patients, pharmaceutical and other industries, etc. in HCO offers practical cases where dialectical systems thinking and requisite holism here, because we have published papers about them recently several times; the point is in a synergy of interdependent different viewpoints. The selected problem seems to have its concrete roots in one-sidedness of the decision makers as unavoidably narrow specialists, who lack capacity of interdisciplinary co-operation, e.g. among medical doctors and other crucial professions in public HCOs.
which make all of us more holistic in a creative co-operation process. This attitude/value creates a new culture instead of the one causing wars over millennia: it innovates culture, and enables innovation, to which the modern generation is condemned, because the most innovative organizations and nations control the world.

The (dialectical) systems approach is obviously supposed to enable people to think along the lines of the left column in Figure 1. The point is in prevention of oversights and resulting mistakes, including poor organization and quality of public HCO’s services (13, 14).

The law of requisite holism (12) reinforces the ‘dialectical system’; see the first line in Table 1, left column. It describes the natural fact, that humans cannot be totally holistic, which has been a (very justified!) requirement of Bertalanffy. People can hardly do a good job, if they use a single viewpoint, e.g. one medical specialization with no co-operation with people from other professions, who see the same processes differently. The right way, normally, is the middle way between a single and all existing viewpoints/professions, but people must take responsibility for choosing their dialectical system as synergetic network of viewpoints (6-12) (Table 2).

Table 2 shows, e.g., managers in HCOs must and may decide, with full responsibility, what will be considered, and what will not (but will not stop influencing!). The way out of one-sided decisions is a double capacity of humans: specialization in one profession, to know enough from a selected viewpoint; and capability of (dialectical) systems thinking as a methodology of creative interdisciplinary co-operation, rather than a sophisticated description of findings inside a single selected viewpoint.

A new suggestion must be prepared and implemented with requisite holism of thinking, decision making, and action to work well. Requisitely many experts, and their openness, are needed in teams for this purpose.

For the organizational innovation of the public HCOs in e.g. Slovenia to happen, hospitals etc. need absorption capacity for the new ideas/knowledge/suggestions (15,16). This capacity includes their acceptance of inventions that have not been practiced yet and may help public HCOs work better.

A TENTATIVE DIALECTICAL SYSTEM ON ORGANIZATIONAL INNOVATIONS IN PUBLIC HCOs

Innovation of culture in government and public HCOs

Technological innovations support new quality of life, after the innovation of socially prevailing culture – democracy – has created room for everybody to be free to think, speak, and take risk as entrepreneur, after 1870s (17). Inventions/suggestions from research organizations such as universities and institutes belong to the under-used sources of innovations. Organizational/management innovations, too, are poorly used in the public HCOs to replace the established/obsolete habits (3,4,13,14).

Many Western researchers of innovation problems presuppose that the market pressure alone makes businesses, including the public HCOs, willing and able to absorb whatever inventions/suggestions surface, if they feel their application of this knowledge will increase their efficiency and effectiveness. Therefore, they claim, the Government should remove obstacles for competition and invest in education and training in capabilities, which people need to cope with the demanding markets of products/services (15-19). This may hold, if businesspersons, including HCOs managers, are entrepreneurial rather than routine-lovers, and if the general population prefers competition to solidarity, and permanent changing to peaceful life. Such behaviour exists in the innovative soci-

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<th>Table 2. The selected level of holism of consideration of the selected topic between the fictitious, requisite, and total holism</th>
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<td>Fiction holism (inside a single viewpoint)</td>
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eties much more than in the other eighty percent of the world population (20,21).

Freening competition from obstacles works, if people can, know how, and want to compete in market; the public HCOs in Slovenia do not. Therefore: modern values, knowledge, including know-how, make a dialectical system of preconditions for the inventions/suggestions in legislation etc. to be realized there, not resources alone (3,4,13,14,22,23).

In public HCOs, the organizational culture must be innovated, not the technology only. This helps interdependence of different and hence complementary specialists become visible: ethics of interdependence may result and support cooperation. We see the problem less in application of the health-care related inventions/suggestions, but more in the managerial and organizational ones (3,4,13,14). The Government can promote its suggestions better, if it defines in its procurement rules for all government offices, HCOs, educational and other public organizations, that only the most innovative organizations may supply them, including public HCOs. To succeed, the Government must also be a role model of innovation. Innovations related to the management style and organizational process and methods can take place in its offices, too, like everywhere else (15,16). So they can in public HCOs.

**Process of transforming inventions/suggestions to innovations**

Slovenian public HCOs are no longer free of competition: there are more and more private HCOs; the entire European Union is becoming one single market for health care services. Public HCOs may no longer care only about the technological/medical attributes of their services, but conceive them more holistically (3,4,13,14).

To meet customers’ criteria of requisite quality, products must be excellent on a requisitely holistic basis. Thinking about (requisite!) holism must include technology, production, business planning and doing, marketing including selling, human resources, property rights, and several more aspects, as a (dialectical) system, for consideration of everything essential and nothing else nor less (6-12, 15, 23-25). Provision of health care services should hence not be a medical topic only, but a very interdisciplinary endeavour, which links at least business, technologies, human resources, organization, management, nature aspects into one whole, leaving no essential blanks – if it should produce an innovation/success.

This makes creative co-operation and requisite holism in the public HCO services organization and management of all processes/phases essential. Holism may be based on using the (dialectical) systems theory explicitly or informally (1-12, 21,24,25) at least. Informal systems thinking takes place when the concepts in Table 1, left column, and in Table 2, middle column, are used in investigation, thinking, decision making, and action, by networking, based on inter-disciplinary cooperation, openness, hierarchy of complexity, etc., but no formal systems theory language shows up. Holism inside a single discipline helps, too, but is rarely sufficient for unpleasant surprises to be avoided. (Informal) Systems thinking must be stressed because today, worldwide, there is a lack of education in systems thinking/theory, including medical studies; there are many unavoidable narrow specializations; and hence there is a lack of requisite holism. Even more: holism is frequently considered fictitiously, limits of consideration being reduced a lot and reviving the obsolete reductionism under the name of systemic thinking (Table 1, right column; Table 2, left column): poor quality of work outcomes.

**Systemic quality (as seen by customers/users) and its roots**

Customers decide what quality is good. What they find good enough, is called excellent/perfect; it depends on five interdependent pillars of total quality; each of them must be excellent. They are: products, processes, leadership, i.e. cooperative rather than commanding management,
and commitment, linked in a synergy by organization (26).

A product is perfect if meeting the criteria of "systemic quality" made of the system of interdependent and interactive components: price, technical and commercial quality, range, uniqueness and sustainability as they are both defined and accepted by customers (23, 25). No criterion may be missing; they are interdependent! This is where new management model must fit in (1-4,13,14). Quality can only be improved by innovation, of course.

Preconditions of making innovations from inventions/suggestions

Health care can attain systemic quality by all kinds of innovation, but innovation of culture, hence of management style and organization, comes first (15-17). Innovation is both a complicated and complex outcome and process, which depends in a concerted (= systemic) way on the dialectical system of the (interdependent!) preconditions (Table 3) (8).

Innovation requires all crucial professions, e.g. in public HCOs, to share the effort of inventing and innovating and its yield, after a success with customers. Therefore invention/suggestion, innovating and innovation must be integrated in the entire business process as well as in the support from the (inter)national economic system and policy of public HCO organization and management model (3,4,13,14). These processes must be continuous.

Practice of continuous innovation

The framework model of practice always includes vision, mission, policy, strategies, and tactics, before operation and monitoring that feeds information back to previous phases for corrections to be undertaken (8, 27-30). Implementation of a strategy is at least as complex as its making: it confronts the established old habits and tries to break them (31), the public HCOs included.

In the case of innovation (rather than routine) these phases have specific contents. We presented them in a logical sequential order, but in reality the process is not linear at all, but dialectical, i.e. full of interdependencies and interactions (8,23,25). This applies to the public HCOs, too.

The vision may be summarised as "survival on the basis of competitiveness by requisitely holistic creative work and cooperation for innovation aimed at a systemic quality in accord with (new) requirements of customers, which are patients and citizens trying to prevent their illness in time in our HCO". Mission (e.g.): “delight customers with an excellent systemic quality and attract them as permanent customers of our HCO”. Policy (e.g.): “implement innovative business as a source of continuous systemic quality in all parts of all processes and all units of our HCO”. Strategy towards implementation of this policy may employ continuous self-assessment of one’s own quality in terms of the European Excellence Award or Baldrige Award, or (as a first phase) attainment and re-attainment of the International Standards Organization’s rule ISO 9000 certificate or something similar, applying to the HCO. Tactics for implementation of this innovations-innovations strategy include e.g. an “organized critique, followed by teams and task forces that work on solving the selected problems” (on a free-will basis and on the public HCO’s time, one hour a week) with awards for inventions (symbolic in value, but with no delay) and for innovations. Innovation reward is foreseen for all of the innovative team, all members of their own organizational units, every organizational member including managers, while a half of the value created by innovation enters the HCO business funds (8).

Once inventions and potential innovations result from the above-summarised process, the

<table>
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<th>Table 3. Dialectical system of preconditions for innovation to show up</th>
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<td>Innovation = (invention X entrepreneurship X holism X management X co-workers X innovation-friendly culture X customers X suppliers X competitors X external (socio-economic) conditions X natural environment X random factors).</td>
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diffusion process comes in, to change ideas and products into innovation applied by many (32).

**The diffusion viewpoint of making an innovation/success**

For a new public HCO organization and management model to become innovation/success, its promoters and representatives act as change agents and must do their best to make their invention/suggestion/potential innovation (that is new to potential customers) accepted by its potential users. They need excellent capacity in communication, persuasion, listening, gaining opinion leaders and their informal aides as facilitators of the persuasion process, etc (Table 4). In this respect, the Slovenian public health care is quite traditional: it has its roots in times with no market pressure (which can be found in many other European countries, too).

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**Table 4. Matrix of essential attributes of diffusion process from the viewpoint of change agents (a case)** (Germ Galić, 2003; Leder, 2004; with permission)

<table>
<thead>
<tr>
<th>Phases of users' decision making about a novelty</th>
<th>Novelties to be offered</th>
<th>Attributes of Novelties</th>
<th>Communication channels</th>
<th>Nature of the social system of customers</th>
<th>Decision type</th>
<th>Consequences of novelty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Awareness</td>
<td>Customers - innovators</td>
<td>Relative advantage</td>
<td>Public</td>
<td>Optional</td>
<td>Indirect</td>
<td>No impact by change agents needed</td>
</tr>
<tr>
<td>2. Persuasion</td>
<td>Early customers</td>
<td>Compatibility</td>
<td>Interpersonal</td>
<td>Group</td>
<td>Direct</td>
<td>Little impact by change agents needed</td>
</tr>
<tr>
<td>3. Decision</td>
<td>Early majority</td>
<td>Testability</td>
<td></td>
<td>Authority</td>
<td>Anticipated</td>
<td>Medium impact by change agents needed</td>
</tr>
<tr>
<td>4. Application</td>
<td>Late majority</td>
<td>Visibility</td>
<td></td>
<td>Desired</td>
<td>Unanticipated</td>
<td>Bigger impact by change agents needed</td>
</tr>
<tr>
<td>5. Reconfirmation</td>
<td>Laggards</td>
<td></td>
<td></td>
<td>Undesired</td>
<td></td>
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</table>

In a competitive market, which is entering the public health care in many areas all around Europe etc., a supplier can hardly let customers wait for a new product or other invention; demand must often, but not always, be created. One can read in public press that pharmaceutical factories work very hard in lobbying to create new demand for drugs. We will not tackle this issue, but keep to the case of organizational innovation. Demand is created by persuasion and diffusion making both the authors and the potential customer know each other better. The author/supplier cannot succeed, if she cares for her product more than for her potential customers. Hence, the diffusion process addresses the dialectical system made of: the novelty to be offered; the communication process between the supplier/s and the potential customer/s; time for potential customer to decide for the novelty (or against it), and a big enough number of them to do so for the supplier to succeed economically; and the group of potential customers as a social system (32).

Every HCO as a potential customer may be another story, including conditions of work of the public HCO. The framework summarised here may need very particular elaboration of the model for every HCO to become known well enough, mastered and even attracted on a long-term basis. Why?
Change agents, with support from opinion makers and their unprofessional aides, may make HCO - potential customers aware of the novelty and even persuade them, or not. The social structure, norms and roles of the change agents and opinion makers in HCO as social system may support the novelty, or not. Whether or not the novelty will become an innovation, is up to the HCO - its potential customers. They may find it suitable, or not. Authors/suppliers may do a more or less informed guessing about them, and try to influence them. Therefore change agents are needed. The individual properties and socio-economic statuses of HCOs - customers may make them interested in the novelty a lot or hardly, and do so quite early, later on, or never.

A similar impact over the potential customers may be ascribed to communication channels: to some mass-media may be sufficient, others may need interpersonal communication with their peers and friends who have already acquired the novelty because they trust them more than the advertisers; more cosmopolite or more local channels may do a better job.

The potential customers/adopters of an offered novelty may be very different (from customers-innovators to laggards). Hence they: are differently easy or hard to persuade; take a differently long time to make their decisions; need different approach methods of change agents, opinion makers and their aides; find different attributes of the product (human-centred technology design, in this case) offered acceptable, promising, inviting, persuasive, etc.

Suppliers are interested in selling their organizational/management model to many HCOs, and to do so with the least possible effort and cost. Hence, they are very interested in creation of a critical mass of customers adopting their supplies. Afterwards, the new market develops a lot on its own, and the change agents may and can concentrate on other potential customers. Concrete figures about percentage are very diverse.

Too often the potential customers who are less open, rich and innovative risk-takers are left aside. This means that change agents do not change the habits of the potential customers who may need their novelty most of all, because of lagging behind the development of others anyway (laggards may have good reasons to do so, from their own viewpoint systems). This situation is very frequent (e.g. cases in 20), covering 80% of humankind, and is called the innovation-need paradox (32).

That's why networks matter so much, be it between individuals or between organizations (in which the diffusion process is even more complex and complicated, because more persons and relations are involved). It depends on the type of the novelty offered, whether or nor a centralised or a decentralised diffusion method works better.

Even more: organizational attributes, which are helpful in the phase of creation of awareness, interest, positive decision etc. concerning a potential innovation, may be harmful in the later phase of its practical implementation, and vice versa (32). E.g. it may be easy to persuade a manager, but the consequences may be bad, if he or she is found imposing rather than trustworthy as an opinion leader by his or her co-workers. Besides, an opinion leader must not be too different from his community neither too equal to them. Etc.

Consequences are the final essence of the story, and they are normally a synergy of desired and undesired, direct and indirect, foreseen and unforeseen outcomes. – The more (requisitely) holistically these and similar issues are worked out in the feasibility study, business plan and marketing plan, the bigger may be the chances for the consequences to have less undesired, indirect, and unforeseen consequences. Systemic thinking helps a lot again. This applies to the public health care and innovation, both in terms of research about organizational models’ contents, in their promotion to make an invention/suggestion an innovation inside the public HCOs, and in their market, i.e. among potential patients.
THE CASE OF ORGANIZATIONAL INNOVATIONS IN PUBLIC HCOs IN SLOVENIA

In our experience differences, related to new organizational and managerial models are very big between four major groups of the public HCOs: the Clinical Centres in Ljubljana and in Maribor, because they are closely linked with the Faculties of Medicine of the respective universities; the smaller hospitals in other towns around Slovenia, which are less complex and can offer less medical services with their material and human resources; the private HCOs with concessions to use public money based on a contract with the Office of the Social Health Care Insurance; the private HCO with no concession.

These spans of differences mean that the public HCO organization and management model must be detailed per segments, and so must be the novelty diffusion projects.

SOME CONCLUSIONS

The new public HCO organization and management model can attract more attention, if the Government innovates more and acts as a big buyer in the modern buyers market, which is no simple precondition. It requires a critical innovation of culture of the government bodies and other public organizations, including HCOs. But the alternative is even more complex: the lack of requisite holism and of an innovative change causing countries and their HCOs fall behind the most dynamic and innovation-based countries of the world.

The invention-innovation process, including any novelty, is long, complex and complicated. It runs from freeing, making/enhancing and activating capabilities of all available resources all the way to the final acceptance of the novelty by the customers and resulting benefit for them and the authors and owners of the novelty. Developing, making, and diffusion of any product or service are three big parts of the same whole, very interdependent and requiring (informal) requisitely holistic thinking. Invention-innovation process also requires transition from a routine-based to innovative management. Here we see the main core of the problem with the concept under discussion: the most influential persons in the public HCO are very professional, which makes them deep in one single discipline, but they cannot be interdisciplinary enough to attain the requisite holism concerning the invention-innovation process of the public HCO organization and management, if alone. And they have very rarely a chance to learn the interdisciplinary cooperation.

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