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Radek Němec
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PREFACE

Two years have passed and, once again, we are here with our international meeting of academics and professionals – the conference on Strategic Management and its Support by Information Systems (SMSIS). This year, the conference is held for the 13th consecutive year and, again, we are glad for the support from the dean of the Faculty of Economics, VŠB – Technical University of Ostrava, prof. Zdeněk Zmeškal.

The first SMSIS conference has been held in 1995 and, to this day, it continues as a traditionally bi-annual platform for professional discussions and exchange of experiences between research teams from various countries and institutions around the world, namely from the Czech Republic, Hungary, Iran, Spain, Slovakia and the United Kingdom. The conference focuses on a relatively broad scale of topics that are associated with:

- strategic management,
- quantitative methods and their applications in management issues,
- trends and issues in information systems design, management and security,
- and applications of new media and intelligent tools in the Digital Economy.

This year, several new hot topics are presented and discussed, namely, social dimension of strategic management, benchmarking in supply chain management, spatial econometrics, cybersecurity for industry 4.0, or artificial neural network and machine-learning with human-in-the-loop.

The SMSIS 2019 conference is organized in cooperation with the Czech Society for Systems Integration (CSSI) and three Czech universities: VŠB – Technical University of Ostrava (Faculty of Economics), University of Economics in Prague (Faculty of Informatics and Statistics) and Masaryk University in Brno (Faculty of Informatics).

The SMSIS conference proceedings usually contains about 50 carefully selected scholarly and professional papers, which are double-blind reviewed by members of the programme committee, who certainly deserve thanks for their devoted work. I would like to thank the members of the organizing committee as well, for their dedication and hard-work during the preparation and organization of the SMSIS 2019 conference event.

I wish all of us to be successful in the presentation of our work, our contributions to be beneficial to conference participants and that the event will meet everyone's expectations.

To a successful conference!

Jana Hančlová

May 2019

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A

STRATEGIC MANAGEMENT

Investigating the Process of Social Innovation – A Social Learning Based Approach

Gabriella Metszosy[1]

Abstract: A number of challenges are requiring more and more involvement from the humanity, and solutions are hardly possible without wider participation in social innovation and social learning. The characteristics that are essential factors for implementing social innovation need to be further developed. In this paper, social innovation is presented in the aspect of social learning with its influential indicators, possible success and failure factors. In every phase of the process of social innovation, different tools and techniques can be applied to investigate the available resources and supporting decisions. In this paper a short illustrative case demonstrates a decision support method which can be applied in the process to choose the orientation of the social innovation practice to be accomplished. Based on the available factors and the weighting of decision maker, the result of the method shows the best alternative which worth to implement.

Keywords: social innovation, social learning, social innovation process, social innovation factors, decision support method.

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1 Introduction

Nowadays social innovation phenomena are found in every aspect of life (e.g. new educational forms, movements, crowdfunding). Uncountable social innovations have appeared in the last decades. These changes have occurred due to individuals, organizations, foundations and movements in a wider area.

In most of the social innovations new combinations or a hybrid form of existing elements are created – rather than something entirely new – and they are cross-border (Sanders et al., 2007). This results in new social relationships between earlier separated individuals and groups and it promotes the spread and apperception of innovation, which opens the door to other innovations.

There are many definitions to describe social innovation, because so far there is no final version of it. The internationally accepted concept contains the following elements (Reeder et al., 2012):

- new organizational environment,
- new idea,
- new arrangements,
- new scope of activities,
- new relationships and interactions,
- which give satisfaction to a social need.

Social innovation differs from the traditional approach to innovation. It does not satisfy realized needs with the focus on the market; here, the primary focus is on people (Secco et al.,

[1] University of Miskolc, Faculty of Economics, szvmg@uni-miskolc.hu

2016). With the help of social innovation processes, products, services, new approaches can be created in the wider area of different organizations, for example in a co-op, joint business, a for-profit or non-profit corporation. These organizations can be profitable and effective for the whole society, if the created values mean something important for the target group, which is the society and the community (Marshall and Dolley, 2019).

The role of social innovation is very important in economic growth, because of its cross-border and self-exciter attributes. In the opinion of Murray, Mulgan and Caulier-Grice (2010) there are four critical areas in implementing and supporting social innovations, which contain the following elements:

- Public economy: community financing, labour force, organizational forms, measuring and rating, information circulation.
- Donations: innovative projects, finance, support packages, innovation tools, platforms, protocols, government and accountability, regularisation, legal and other conditions for expanding social innovation.
- Market economy: value creation, finance, organizations, information, regularisation, legal and other conditions for generating social innovation.
- Household economics: public grounds, appreciation of time, mutuality, social movements.

Arising the social innovation in these fields to be supported by causation with different decision support methods. To determine the applicability framework, it is necessary to investigate the decision support techniques in various levels of complexity and to determine the possible decision points, which supports to draw the inference the applicability of decision support methods in the social innovation process.

2 The process of social innovation

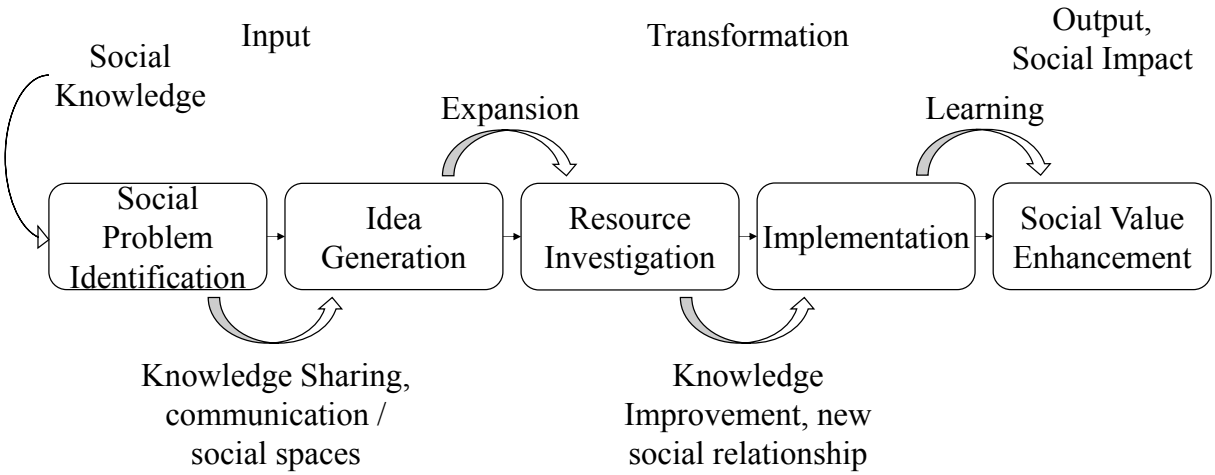
The social innovation may trend towards a particular technology, policy, institution, organization, culture, population, target group, etc. The focus – social need – is the most critical point. All types of social innovation processes go through the following steps (Sanders et al., 2007; Tohidi and Jabbari, 2012; Rajapathirana and Hui, 2018; Soma et al., 2018).

Phases of the innovation process:

- Preparation: define the range, develop the common knowledge of the process of social innovation and the innovation ground. Strengthen the common understanding with informative tools, configuration of the innovation ground (define the goals, values of key performance indexes (KPI) to support and monitor the innovation), and recruitment (promoting, recruitment of the participants).
- Directives: define the challenge (what is the challenge, what can be optimized), Understanding, especially on the part of the target group. Define the benefits and the efforts of participation. Generate ideas to understand the needs and to determine the potential solutions. The starting point of the social innovation is an unsatisfied need, and an idea for helping to meet this need.

- Concept: value proposition, highlighting of the effects and feasibility, selection of concepts. Feasibility assessments with stakeholder and possible collaborator involvement with the usage of proper communication tools.
- Prototyping: start the project and recruit members (design the project team), optimize the value proposition and define the goal of the iteration period (how can the solution create value for the target group and how can it decrease the limitations of the development of the society, optimize the value proposition with the help of these data, develop and rate the prototype – including the members of the target group, who takes part in the processes and the rating and redefine the goals using the results).
- Maintenance: business model, legal form, strategy (determine the clear goals and actions to reach the goals), realization and rating (with the help of monitoring and feedback).
- Equalization, measurement: strategy, people, realization (measure the performance of the organization and the society), finance (from different sources, venture capital, support, donations, common finance, benefit).
- Systematic changes: balanced approach – top-down, bottom-up, define goals and measurable indicators. Mobilize the stakeholders because of the development of the social movements.
- Learning and development.

The process of social learning is connected to the process of social innovation with the context of social change. In both processes there are different learning phases where new knowledge and networks will be essential for the long-term sustainability of the implemented action. Since social learning is in evidence from the initial phase of the social innovation, it is



necessary to integrate its elements into the process of social innovation (Figure 1).

Figure 1 Social Innovation process with a focus on social learning [Own edition]

Each stage of the process is described in more detail:

Input phase:

- The identification of the social problem can be done by individuals, groups, campaigns, political movements, religious movements, volunteers, attitudes, demographic changes.

Personal motivation is also a critical factor, when somebody is concerned in the problem and he/she would like to deal with it.

- Ideas can come from various sources: theories, crises, experiences, specifications, new knowledge from the social spaces.

Transformation phase:

- The evaluation of ideas is based on feasibility and available resources. Analysis of the present and required conditions is essential.
- Ideally, before implementation the chosen idea needs to be tested or prototyped. The test phase might happen in a small sample, community, process, etc.
- With all the necessary resources in place, and if testing is successful, the implementation is begun in cooperation with the partners involved in the process. New knowledge is created, which helps to maintain and circulate the process of innovation.

Output, social impact phase:

- Sustainable practice requires the commitment of the target group; for value enhancement of the implemented social innovation idea, it is necessary for it to take root in the common knowledge.

Measurable indicators need to be specified for rating the phases of social innovation. in this way the special results can be ranked, and it can be decided which approach could be useful to take. Measurable improvement can be factors such as quality, satisfaction, acceptance, understanding, cost reduction and other characteristics.

According to Kaderabkova and Saman (2013), the main dimensions for evaluating social innovation are:

- new value of innovation,
- taking part in the process of social innovation,
- creativity or techniques to develop the new concepts,
- learning mechanism and rating,
- the mechanism of collecting information and knowledge sharing,
- types of co-operation,
- source(s) of finance.

Based on these dimensions, indicators of the social innovation are collected and characterised with potential success and failure factors in Table 1.

Social Innovation Indicator	Success Factors	Failure Factors
Previous activities	Successful social activities, former best practice	No former activities
Stakeholders	Acceptance, support, relationships, reinvestment, social responsiveness, participation	Lack of support, quickening, conflicts
Social contribution	Employment, increasing the quality of life, self-help, mentoring, financial stability, transparency	Lack of interest among target group, lack of confidence, underemployment

Social Innovation Indicator	Success Factors	Failure Factors
Local abilities	Participation, supportive atmosphere, infrastructure, active local government, collaboration, local organizations, positive perception, social responsiveness	Conflicts, lack of local government support, difficulties with transportation
Financial aspect	Reinvestment, alternative financial opportunity, crowdfunding, self-financing, voluntary-financing, contingency fund	Underfunding, lack of grants to apply for, incapability of self-preservation, over-assessment, lack of financial feasibility
Legal	Support system, regulatory environment, legal knowledge	Barriers, lack of demandable support
Communication	Active communication, knowledge sharing, externalisation, internalisation, involvement	Infrequent, missing communication, top-down approach without bottom-up
Education	Mentoring, self-learning, training	Lack of learning process
Applied techniques	IT, sustainable technology, low consumption, design thinking	Timing, obsolete technology, lack of optimization, adaptation without testing
Expectations	Supportive approach, reasonable expectations	High expectations without support
Novelty	Competitiveness, successful implementation in another place with similar attributes	Imitation without similar conditions
Networks	Collaboration, voluntariness, supply chain, regular customers with occasional buyers	Competitors
Focus of the social innovation can be:	– disadvantages – unemployment – migration – ethnics – education – art – culture	– holiday – health – poverty – homelessness – indebtedness – family – youth chances	– psychosocial damages – local development – regional development – violence – addictions – criminals – justice

Table 1. Social innovation indicators and its potential factors [Own edition based on Dainiené and Dagiliené (2015), Dziallas and Blind (2018), Smith et al. (2016) and Tohidi and Jabbari (2012)]

3 Decision support potential for the social innovation process

Each phases of the social innovation process contain decision points what require the application of different decision support techniques. Due to the diversity of the problem and the range of available data, it is not practical to rely on a unique best practice in different social innovation decisions. The complexity of the problem, the range of stakeholders involved in the decision and the existence of influential conditions will be the basis for selecting the adequate decision support method:

- voting procedures,
- elementary decision methods (decision matrices, decision trees),
- complex methods (ELECTRE, POMETHEE, TOPSIS),
- evaluation functions,
- utility functions,
- AHP,
- game theory,
- linear programming,
- artificial intelligence.

3.1 Case study

The application steps of Analytic Hierarchy Process (AHP) as a potential decision support method are presented in the case study. The methodology and framework of AHP are described by Saaty (1987). Choosing the method is explained by the fact that it can be applied in case of both well- and ill-structured problems (Forman, 1993), and for estimating the actual abilities of the place where the social innovation will be implemented.

The aim of the adaptation is to choose the orientation of a social innovation solution which can be applied with the available level of social innovation indicators. It can be applied in the transformation phase of the process. The decision maker - who provides the information needed to select the orientation - is a group or individual who initiate the innovation. In addition, the available resources and experiences from former practices with similar characteristics play an important part to define the criteria (C_1-C_3) which exert influence on the objective. The criteria can be broken down to sub-criteria at second (C_{11}-C_{33}) and third (C_{221}-C_{332}) level because of the deeper structure. The structure of the decision tree is shown in Figure 2.

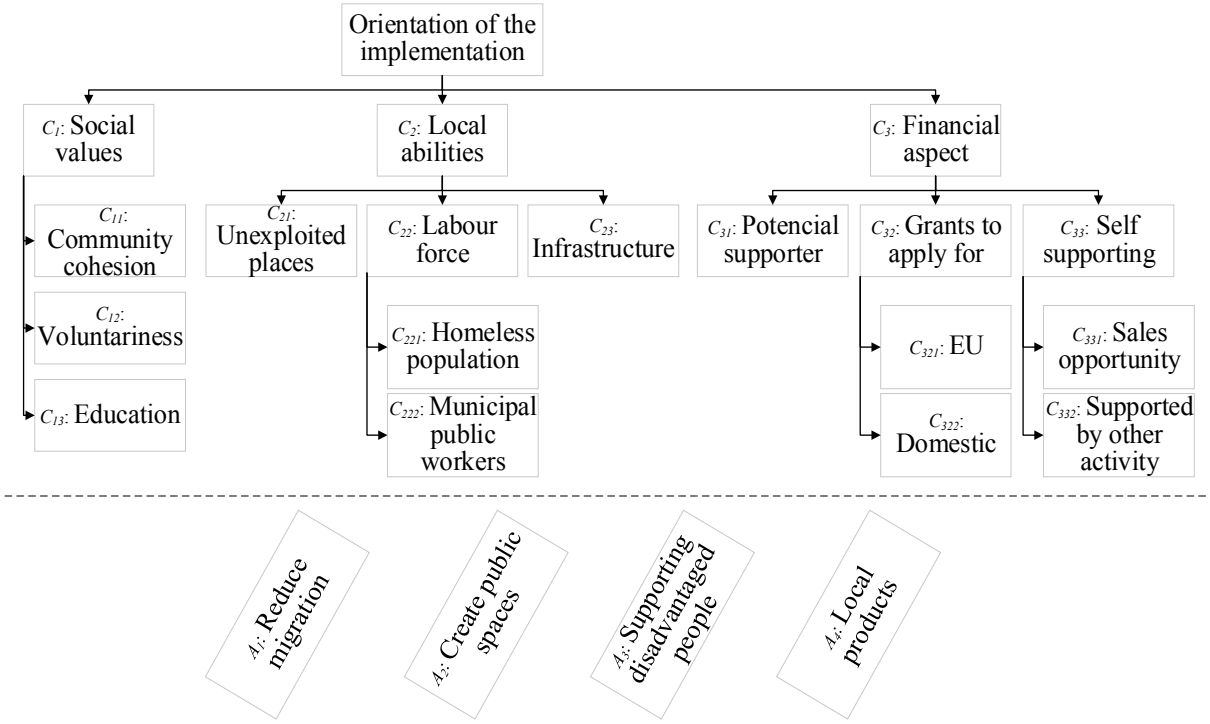


Figure 1. Decision hierarchy [Own edition]

The pairwise comparison have to be done by the decision maker, where the criteria are compared with the scale defined by Saaty (1987). The matrices are constructed by the right of pairwise comparison, and the weight vectors (**w**) of the alternatives (A_1-A_4) are calculated from them. Based on the weight vectors and the aggregated values of bottom criteria, the aggregated sums of weights (S(A_i)) can be calculated. The calculated results are shown in Table 2.

Based on the calculation of AHP method, the preference order of the alternatives as: $A_4 \succ A_2 \succ A_3 \succ A_1$. The fourth alternative – local products – can be considered the most useful in the described case. This is a source of income to people who work on it if the sales opportunities are initiated. Producing local products require local particularity or raw material which can be adapted, and the collective work helps strengthening the community cohesion. The first alternative is the worst in the analysed case, its relative performance is 48% of the fourth one.

	C_{11}	C_{12}	C_{13}	C_{21}	C_{221}	C_{222}	C_{23}	C_{31}	C_{321}	C_{322}	C_{331}	C_{332}	
A_i	0.11250	0.02500	0.11250	0.14000	0.15600	0.08400	0.02000	0.05250	0.10500	0.07000	0.08575	0.03675	S(A_i)
A_1	0.300	0.100	0.025	0.100	0.020	0.030	0.160	0.310	0.400	0.500	0.020	0.200	0.1642
A_2	0.500	0.300	0.300	0.550	0.130	0.180	0.730	0.015	0.100	0.030	0.120	0.700	0.2739
A_3	0.050	0.400	0.025	0,100	0.750	0.160	0.010	0.005	0.400	0.200	0.010	0.050	0.2221
A_4	0.150	0.200	0.650	0.250	0.100	0.630	0.100	0.670	0.100	0.270	0.850	0.050	0.3398

Table 2. Assessment of the alternatives [Own edition]

4 Conclusion

Linking social innovation to social learning is essential for the proper understanding of how the entire process works. This paper provides a brief overview of the connection between social innovation and social learning. Social innovation formulates a constant demand to improve people's well-being, which is also part of the framework for social progress. Accordingly, achieving the intentions of social innovation contributes to leaps in social progress.

In every phase of the social innovation process is essential to applying various tools and decision support techniques to choose the appropriate option. The investigation of available resources and future possibilities is indispensable to rank the alternatives. In early phases using elementary tools are proposed for the survey, such as SWOT, and cause and effect analysis. With the progress of the process, the complexity of applied methods can be risen. Selecting the new social innovation implementation is the most critical part of the process, and adequate decision-making and applied methods are needed for the right choice. An adaptable framework construction is essential to choose a suitable and sufficiently complex decision-making method.

A case study was described the application of AHP, a decision support method which can be applied after the resource investigation phase of the social innovation process. This method is useful when the decision maker is capable of weighting consistently the criteria, the adequate knowledge is essential. It should be noted that AHP method can be applied without biases, if

interaction cannot be suspected. If supposedly it is, other method, such as Analytic Network Process – ANP, or the reorganization of the criteria is required (Molnar and Horvath, 2017).

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