Development of the concept of managing stakeholders in the Russian educational agglomeration based on the Agile methodology

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Abstract. The paper substantiates the relevance of developing the concept of managing stakeholders in the educational agglomeration based on the flexible methodology in an unstable environment. The aim of the paper is to conceptualize the management of stakeholders of educational agglomeration based on the Agile methodology. The main research methods were dialectical method, critical analysis method, descriptive statistics methods, communicative and pragmatic approach, stakeholder approach, and conceptualization. The concept of managing stakeholders in the Russian educational agglomeration based on the Agile methodology was developed. This conceptualization implements the empirically-based and design-based orientation of the flexible methodology and takes into account the practical benefits of stakeholder effects from participation in the educational agglomeration. The main elements of the stakeholder management system are: the person, object and subject of management, management principles, management cycle and management of the terms of cooperation. The conclusion about managing the stakeholders of the educational agglomeration based on the Agile methodology is substantiated.

1. Introduction

The emergence of an educational agglomeration (from the Latin agglomerare to join, accumulate) as a cluster of heterogeneous elements, was a kind of response to the challenge of an unstable environment: information-rich, volatile and uncertain environment of mobile changes, characterized as VUCA [6], which requires the development of competitive advantages of stakeholders in the process of collaboration.

The structure of the educational agglomeration contains many stakeholders that are not limited to investors and founders, but which, nevertheless, can influence the development of educational cooperation. Today the leading companies “typically scan their environment to identify the interests and actors who might influence their fortunes. This involves preparing a stakeholder map that identifies parties within the company, through its value chain, and on its borders, including the media, NGOs, and communities that have an interest in the company and its practices” [14, p. 106]. These stakeholders are not formally connected to each other, therefore, to manage the stakeholders of the educational agglomeration, it is impractical to apply management methods that are adequate to the bureaucratic organizational structure, with its characteristic hierarchy of relations, and a stable situation. From the point of view of formation and development of stable competitive advantages of
educational agglomeration stakeholders, it is necessary to switch to change management – a flexible methodology. This methodology is Agile, defined in the context of this study as an empirically-based and design-based methodology for managing stakeholders.

The relevance of developing the concept of managing stakeholders in an educational agglomeration is also due to the fact that Russian research and practice do not manage such cluster education based on flexible methods.

2. Materials and methods
The development of the concept of managing stakeholders in the educational agglomeration is based on the flexible Agile methodology that increases the effectiveness of management in the context of changing priorities. The appeal to the stakeholder approach allowed taking into account that effective strategic management of the organization should be built taking into account the interests of various stakeholders representing a dialectical unity. The research also implements the dialectical method, the method of critical analysis, methods of descriptive statistics, a communicative and pragmatic approach, and conceptualization. The information base of the research is formed by reports on the results of the implementation of Agile in Russian companies for 2017-2019, official data of the educational agglomeration of the Chelyabinsk region [2; 3; 5; 9].

3. Results
Educational agglomeration (EA) is a project structure that represents a cluster of organizations and resources that are formally loosely connected, but interact closely and benefit from pooling resources [8; 10; 11; 12; 13; 15; 20; 22]. A. Marshall stressed the “labor pooling as a source of agglomeration” [1, p. 149].

The focus of interaction in the educational agglomeration is education – the provision and receiving the educational services and the development of educational products. In the Chelyabinsk region (Ural Federal district, Russia), there is a regional educational agglomeration project, which defines it as “an initiative association of subjects of municipal education systems that potentially have or have already had an established multicomponent dynamic system of relations for joint solutions to problems in the field of education”. The function of the integrator of educational agglomeration is assigned to the Ministry of Education and Science of Chelyabinsk region, the function of the coordinator of activities of the cluster subjects at the Regional Centre of Quality Assessment and Informatization of Education.

Participants of the Association are inter-municipal project groups, whose activities are implemented in project management [9]. However, this educational agglomeration is limited to the cluster subjects of interaction – municipalities, and processes – the assessment of the quality of education.

Based on the educational specifics of the subject of interaction, the structure of the educational agglomeration may include educational organizations (preschool, general education, professional, higher education, additional education), state and municipal entities, and enterprises/organizations, firms. These stakeholders have heterogeneous resources – human, information, material and technical, technological, financial, administrative – due to the combination of which, in close interaction, a synergistic effect occurs that allows the interested parties to obtain competitive advantages.

The specifics of the sphere of activity determine the directions of interaction between stakeholders of the educational agglomeration. The main areas of interaction cover the full cycle of education management. These areas include:

1) marketing education customers/clients,
2) comprehensive provision of meaningful as practically meaningful learning,
3) development of tools, monitoring and evaluation of the quality of education,
4) employment of specialists who have received education and are ready to apply its results in practice.

The core values of Agile [4] are adapted to education and require meaningful learning as practical learning, collaboration with stakeholders (families, teachers, and the administration of an educational institution) in complex negotiations [19]; flexible methodology is useful for organizing teamwork and
project management in online higher education [21]. The importance of implementing Agile in managing stakeholders of educational agglomeration is determined by the need for their effective adaptation to an unpredictably changing environment and to heterogeneous interaction partners representing organizations with different corporate cultures. “Agility can raise reaction speed and promote economic success and profitability” [16, p. 2]. The most promising areas of flexible HRM practices identified in small and medium-sized organizations – flexible working hours (working hours account, flexible working hours), organizing (organizing work, job rotation, flat organization structure), cooperation (participation, cooperation, team working) [16, p. 5-6] – are relevant to the management of educational organization stakeholders distributed geographically and organizationally.

In the Russian segment, there is no experience in implementing flexible methods in the management of educational agglomeration. However, there is experience in implementing Agile in Russian organizations of various industries and scales, large-scale research of which is conducted annually by ScrumTrek, starting from 2017 [2; 3; 5]. And taking into account that the stakeholders of the educational agglomeration represent different areas of activity, we refer to these studies in order to identify possible advantages and problem areas in the Agile management for conceptualizing the management of stakeholders in the educational agglomeration.

The following criteria were used as the basis for selecting areas to systematize the results of evaluating the Russian implementation of Agile in 2017-2019: 1) measurement of indicators in each reporting period and 2) relevance of indicators to management in relation to the educational agglomeration. Thus, the results of implementing the flexible methodology in Russian companies were systematized according to the indicator “benefits of companies from implementing Agile”. The absence of numeric data signatures in histograms in reports for 2018 and 2019 determined the indication of the range of indicators for these periods (table).

**Table 1. Benefits of Russian companies from implementing Agile.**

| № | Name of the indicator                              | Improvements for periods after switching to Agile, the number of responses, % |
|---|----------------------------------------------------|------------------------------------------------------------------------------|
| 1 | Transparency of project management was improved    | 54  70-75  65-70                                                            |
| 2 | Changing priorities are managed better             | 52  70-75  70-75                                                            |
| 3 | Motivation of teams increased                      | 44  55-60  50-55                                                            |
| 4 | Coordinated work of business and IT is ensured     | 43  50-55  50-55                                                            |
| 5 | Delivery/release of products to market was speeded up | 42  50-55  50-55                                                            |
| 6 | Productivity increased                             | 39  50-55  50-55                                                            |
| 7 | Quality of the products increased                  | 37  40-45  45-50                                                            |
| 8 | Predictability of deliveries increased             | 37  50-55  40-45                                                            |
| 9 | Engineering culture was improved                   | 36  40-45  35-40                                                            |
| 10 | Product support has become easier                  | 31  35-40  35-40                                                            |
| 11 | Distributed teams are managed better               | 26  30-35  40-45                                                            |
| 12 | Project risks reduced                              | 24  35-40  30-35                                                            |
| 13 | Project costs reduced                              | 17  10-15  15-20                                                            |

**Source:** systematized by the authors on the basis of <https://scrumtrek.ru> [5].
Some aspects of the analysis of Agile practices also deserve attention. In particular, according to the results of the first Agile study conducted in the period from September 1 to October 15, 2017 [5], the benefits of implementing the methodology according to the “noticeable improvements” criterion were recorded for all indicators. Sample distribution of answers to the question: “What are the benefits of implementing Agile your company received?” according to this criterion is shown in figure 1.

![Benefits of implementing Agile in the company: notable improvements](https://scrumtrek.ru)

**Figure 1.** Benefits of implementing Agile in the company: notable improvements

In all reporting periods (in 2017 and 2018, according to the size of the organization, in 2019 – by industry), the main obstacles to implementing Agile were identified as “corporate culture that does not accept the basic values of Agile”, “lack of experience in applying Agile approaches”, “incomplete/inconsistent Agile practices and processes”, “insufficient training”, “low involvement of the business/customer/product owner”.

Taking into account the identified factors (goals of agglomeration and specifics of interaction on education issues, structure of stakeholders, prospects of flexible HRM practices, managerial effects of Agile), the conceptualization of management of stakeholders in the educational agglomeration based on a flexible, design-constructive methodology was carried out. The initiator of creating an educational agglomeration can be regional/municipal educational management body or other
organizational structure that is interested in solving problems in the field of education and performs the function of organizing a cluster association. Management functions of coordination, motivation and control are implemented by the created structure: “EA control center”.

The organizational structure of the educational agglomeration is created according to the type of project, which includes cross-functional teams that implement a specific project in the field of education in accordance with the areas of activity and the subject of management. Stakeholders of the educational agglomeration are managed in cyclical environment in accordance with ISO 21500:2012 “Guidance on project management” [17] and include the project (production and support processes) and current activities (operations). The result of conceptualization is represented by a diagram (Fig. 2).

![Diagram of conceptualization of educational agglomeration stakeholder management based on Agile](image)

**Figure 2.** Conceptualization of educational agglomeration stakeholder management based on Agile.

The subject of management is the control center of the educational agglomeration. The management object is represented by stakeholders distributed geographically and organizationally and interested in solving educational problems. The subject of management is the cooperation of stakeholders in terms of marketing, development, implementation and scaling (provision and receiving) of educational products and services.

Stakeholder management is based on the following principles:
- transparency: ensuring that information is presented openly and unambiguously to all stakeholders, including information about benefits;
- communication “as a meaningful rational multidirectional interaction, involving mutual understanding between community members and understanding of the meaning of the transmitted and received message, as well as effective management of this interaction” [18, p. 251] of stakeholders – representatives of organizations of various fields of activity and different corporate cultures;
- collaboration: organizing collaboration as an exchange of resources for achieving common goals.
The stages of the stakeholder management process represent the management cycle and include the following elements:

1) evaluation of stakeholders: identification and description of the composition of stakeholders; inventory of resources, definition of roles, areas of responsibility, boundaries of powers of stakeholders with formalization in SWOT analysis;
2) design of networking of stakeholders within the educational agglomeration and its formalization by the functional scheme of interaction;
3) increase the involvement of stakeholders: demonstration of the benefits of the registry of the benefits of cluster cooperation;
4) team formation: creation of cross-functional teams;
5) parametric assessment of interaction effectiveness: contextually flexible, in the short term.

Managing the terms of cooperation includes:
1) providing an opportunity to work on flexible schedule with timing for sprints with the presentation of an element and/or a fully ready-to-implement product/service;
2) arranging offline and online coworking meetings of interested parties.

4. Summary
In the rapidly changing world, it is advisable to manage the stakeholders of the educational agglomeration on the basis of a flexible, empirically-based and design-based methodology. Systematization of the experience of implementing Agile in Russian companies over three years has allowed prioritizing benefits and problem areas.

Analysis of research and practice of the educational agglomeration as a cluster of geographically and organizationally distributed stakeholders has led to the conclusion that the implementation of the Agile methodology is limited to a small circle of stakeholders, individual areas of educational activity and does not cover the full management cycle.

The conceptualization of management of educational agglomeration stakeholders based on the Agile methodology is based on the implementation of the main management functions (organization, coordination, motivation and control) and provides for the creation of a project organizational structure of cluster interaction in solving educational problems. The object, person, and subject of management are defined; the principles of stakeholder management (transparency, communication and collaboration) are established, the main stages of the stakeholder management process, considered cyclically, and the terms of cooperation as a management tool are proposed.

5. References
[1] Agglomeration Economics. National Bureau of Economic Research Conference Report 2010 / Edward L. Glaeser, editor. Chicago: The University of Chicago Press. 364
[2] Agile in Russia 2018. Annual survey report. November 19, 2018. [Electronic resource]. URL: https://scrumtrek.ru/userfiles/reports/AgileSurvey18.pdf (access date: 17.05.2020)
[3] Agile in Russia 2019. Annual survey report. December 20, 2019. [Electronic resource]. URL: https://scrumtrek.ru/userfiles/reports/AgileSurvey19.pdf (access date: 17.05.2020)
[4] Agile Manifesto 2001 11-13 February. [Electronic resource]. URL: https://www.agilealliance.org/agile101/the-agile-manifesto (access date: 20.05.2020)
[5] Agile Russia Research Report 2017. November 24, 2017. [Electronic resource]. URL: https://scrumtrek.ru/userfiles/reports/AgileSurvey17.pdf (access date: 20.05.2020)
[6] Antonacopoulou E 2018 Organisational Learning for and with VUCA: Learning Leadership Revisited (Teoria e Prática em Administração) 8 (2) 10-32. http://dx.doi.org/10.21714/2238-104X2018v8i2S-40869
[7] Antonov EV, Makhrova AG 2019 Largest Urban Agglomerations andForms of Settlement Pattern at the Supra-Agglomeration Level in Russia (Reg. Res.Russ) 9 370-382. https://doi.org/10.1134/S2079970519040038
[8] Clarke G, Li Y, Xu LC 2016 Business Environment, Economic Agglomeration and Job
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