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A model for resistance management in IT projects and programs

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Abstract. Modern organizations change frequently. They try to implement changes rapidly and effectively. Change usually involves change in information systems (IS) due to its importance in organizations. When implementing larger IS changes in IT projects or programs, resistance to change is an important factor of a possible project failure. Resistance management does not only help organizations to implement changes more rapidly and efficiently but is also an important source of innovation in the change process. Also, the probability of making the right changes increases when resistance is managed well. In this paper we briefly present resistance and resistance management, propose a resistance-management model and position resistance management within the PMI project-management standard.

Keywords: resistance to change, resistance management, information systems, project management, program management

1 INTRODUCTION

Information society requires that modern organizations change frequently, almost continually [2][4][11][27]. Organizations change to adapt to their environment and to increase their competitiveness [2][16][24]. To be successful, organizations are striving for the ability to change rapidly and efficiently. Only organizations able to adapt quickly enough to the changing environment can be successful and survive in the long term [6].

As organizations often depend on information technology (IT), changes commonly involve IT changes which represent the largest share of all changes. IT changes are mostly implemented in IT projects and programs [29]. It is alarming that the failure rate for major IT implementation projects still appears to linger around 70 % [15]. A significant factor in larger IT project failure is resistance to change [1] [11].

This paper is organized as follows. We first briefly present resistance to change and the concept of resistance management (RM). Next, we review some of the related work and propose a generic RM model – RMM. We conclude by positioning RMM within the PMI project-management standard.

2 RESISTANCE TO CHANGE

Resistance to change is often seen as the enemy of change [26] and has a negative connotation to it [8]. As a source of conflicts [26], unexpected costs and delays, resistance is considered a problem. However, treating resistance only as a dangerous foe is inadequate and encourages resistance-to-resistance – meeting force with force [26].

Resistance should be expected as a part of the change process. It is similar to inertia [16][23][26] and emerges in order to keep the status quo in organizations [7][16][22][26]. Change upsets the balance and leads to resistance as a natural response to it [3].

A common belief is that a change process that occurs with minimal resistance must have been a good change that was managed well [26]. This assumption is somewhat naïve [26] as it is easy to change things that nobody cares about [11]. On the other hand it becomes very difficult to change things that people do care about, or they start to care about [11].

RM may address the positive effects of resistance in addition to its problematical nature:

- **Analysis**: Resistance forces a more detailed consideration of the change and its overall impact. It also plays a crucial role in drawing attention to aspects of change that may be inappropriate, not well thought or just plain wrong [26].
- **Motivation**: It is difficult to implement change when motivation to change is lacking. Individuals and groups need a certain degree of dissatisfaction with their current or future states in order to be motivated enough to change. The conflicts arising from resistance can increase motivation, though a balance must be maintained and the conflicts must not push the key issues into the background [26].

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- **Innovation**: Resistance is an important source of innovation in a change process. Many management decisions are irrational because they do not consider a sufficient number of change alternatives nor are they adequately evaluated. Resistance encourages the search for alternatives and demands a reevaluation of considered alternatives [26].

RM can be successful only when both the negative and positive effects of resistance are addressed adequately.

3 RELATED WORK AND DISCUSSION

Fiedler discussed resistance from a risk management perspective in his research. Fig. 1 shows his RM model.

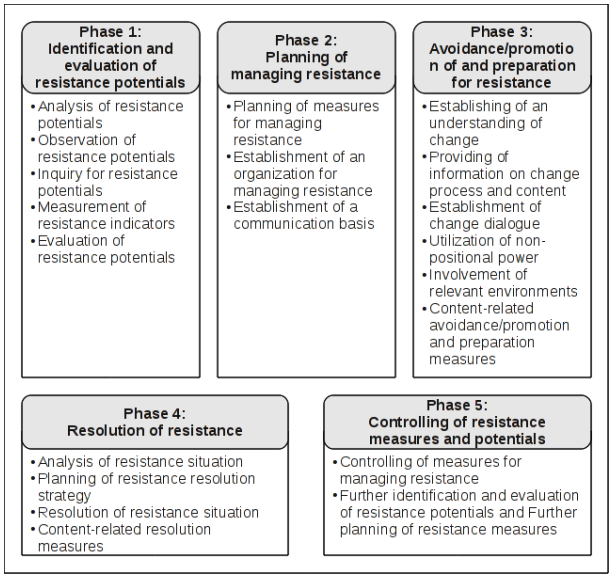

Figure 1. Fiedler's RM model (Fiedler [5]).

Fiedler introduced a five-phase RM model and outlined some limitations [5]:

- The model is not generic due to the variety of possible resistance situations.
- The model delivers no further insights into content-related RM activities, e.g. information providing tasks.
- The psychological and sociological processes are not covered in the model. Further integration of these approaches is possible for better identification of resistance and resistance potentials.

Based on the Fiedler's conclusions and comparison with other models (the Hultman's model [8], generic risk-management model [5] and PMI risk-management model [19]), we concluded that the Fiedler's model is composed of two similar process groups. We believe that it is possible to simplify Fiedler's model by unifying both groups. A brief description of the unified process group follows:

- **Situational analysis**: the (1) last process in the first phase ("Evaluation of resistance potentials") and the (2) first process in the fourth phase in the Fiedler's model ("Analysis of resistance situation").
- **Strategies development**: the (1) second phase ("Planning of managing resistance") and the (2) second process in the fourth phase ("Planning of resistance resolution strategy"). This process includes the preparations needed for implementation of developed strategies.
- **Strategies implementation**: the (1) third phase ("Avoidance/promotion of and preparation for resistance") and the (2) third process in the fourth phase ("Resolution of resistance situation"). The former is basically the implementation of developed strategies for the Fiedler's case study. In general, like in the latter, the content of this process may be developed in the previous process "Strategies development".

Iterations reflect the sequence of both groups in the unified process group. Preventive strategies should be considered in the initial iterations and subsequent iterations should be focused on resistance handling if resistance actually occurs.

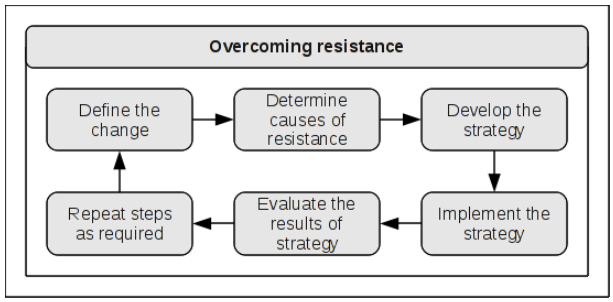

Figure 2. Hultman's model for overcoming resistance (Hultman [8]).

Fig. 2 shows the Hultman's model for overcoming resistance. *Overcoming resistance* and *resolution of resistance* are two expressions with the same meaning. The use of the phrase *resolution of resistance* is preferred as it eliminates at least a bit of the negative connotation of resistance.

The Hultman's model is substantially identical to the fourth phase in the Fiedler's model. The Hultman's model is considered to be applicable to a generic-change process and is thus relevant in implementations of changes through projects and programs as well.

Hultman distinguishes between positive and negative resistance [8]. Positive resistance is considered to be the solution (to a bad change) and negative resistance the

problem to overcome [8]. The Hultman's model is focused on overcoming the negative resistance. In his approach, resistance can be evaluated only retrospectively [8] thus making it impossible to determine the type of resistance in the present time. Nevertheless, it is possible to tune his model to deal with any type of resistance while taking the positive effects of resistance into account.

4 A RM MODEL

In this paper, we propose a RM model (RMM) as an upgrade to the models discussed. The descriptions of RMM processes are suitable for IT projects and programs. However, the model itself may still be generic enough to be applicable to any type of projects or programs introducing change.

RMM is based on the Fiedler's [5] and Hultman's model [8], recommendations for handling resistance [25] and other elements discussed in this paper. It links the principle of perceiving resistance as a project or program risk with the "classical" RM approach. The RMM is composed of preparations for RM and six RM processes as shown in Fig. 3.

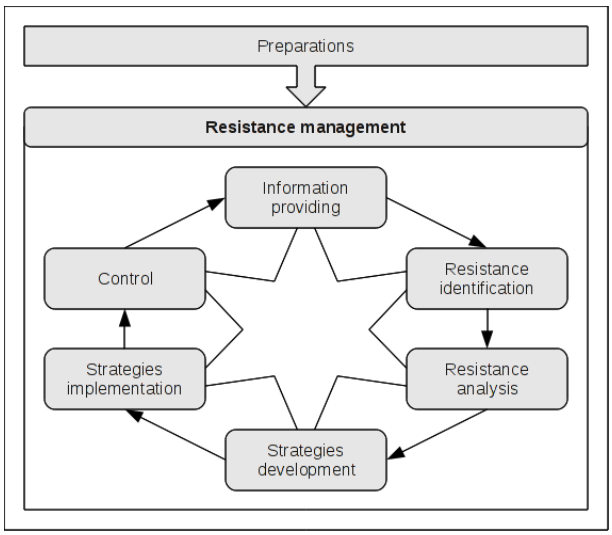

Figure 3. Resistance Management Model – RMM.

Like the Fiedler's model, the RMM, too, should be considered as a rough chronological sequence rather than a rigid one [5]. Similar to risk management [19], RM is not a one-time sequence of processes but rather an iteratively repeating sequence of processes. The process needs to be iterative because all strategies are based on hypothesis and need adjustments when they prove to be inadequate [8]. Also, the circumstances change and the quantity of information usually increases during the changing process [19]. The first RM iteration is therefore only the beginning and still far from the last RM act.

Resistance is proportional to the change scope [16]. Major IT projects and programs with a large impact on the organization, e.g. IS renovations and redesigning of work processes, are most problematical [11]. In these cases, preparations for RM should be done in the early stages of preparations and other RM processes should start shortly thereafter. Resistance should be managed during the whole changing process and possibly even after it in a truncated form. Resistance might surface after the changing process when certain aspects of the change become clearer [25].

In the following subsections we introduce the RMM processes.

4.1 Preparations

The purpose of the process "Preparations" is to establish the basis for active RM. It consists of:

- Choosing core RM team members.
- Development of an overall RM strategy.
- Integration of RM processes with other project-management activities.
- Determination of the RM scope.

The core RM team may be the strategic and expert center of RM. It may consist of: RM leader, IT project and program leaders, experts and insiders. It is recommended to include external experts in the core RM team as they can offer a more objective view on the problems and can be more successful in providing sensitive internal information than others [12]. The latter is usually due to internal organizational politics.

Resistance occurs as a result of the interaction of the key RM elements [25]. In general, these elements are: change content, change implementation process and affected groups and individuals. For RM to be effective, the RM team needs authority over the key RM elements. It is a matter of organizational strategy to define the extent of the authority mentioned. For example, it is possible to influence the IS change (change content) on a strategic level (e.g. the choice between a renovation of an old and an investment into a new part of IS) or on a lower level (e.g. the choice between some alternatives of a renovation).

Preparations should be carried out early in the overall planning of the project [19]. Additional modifications to elements discussed in this process should be carried out later if needed. Also, the positive effects and the true nature of resistance should be clearly outlined and promoted to the top management to gain their support.

4.2 Information providing

Information providing is not a one-time process that may be carried out only at the beginning of iterations and then be put aside. Rather, it is a process that is being carried out continuously through whole iterations as a complement to other RMM processes. The purpose of this process is to provide relevant information for RM. It may be carried out in a wider scope at the beginning

of all iterations to refresh information – to re-check the old and provide new information. Information can be provided on the basis of the key RM elements:

- Providing information about IS change contents.
- Providing information about IT project or program.
- Providing information about IS users (individuals groups and organizations).

The collected information must be comprehensive in order to be used in the resistance-handling strategies. It is crucial to provide high-quality and reliable information [19]. Information is commonly collected by performing workshops, interviews and other means using expert judgment [19]. Collected information should be evaluated and verified to exclude biased information. The biased information should be identified and corrected where possible or a different source of information should be found and used instead [19].

The RM team may be expanded by internal or external informants, whose only assignment may be to provide high-quality and reliable information.

4.3 Resistance identification

The purpose of this process is to create a list of existing resistance situations and resistance potentials with possible verification [5]. It consists of:

- Creation of a list of resistance situations and potentials.
- Verification of resistance situations and potentials.

The primary objective of the existence of IS is to facilitate information support of business and decision processes [28] and any IS change is sooner or later reflected in the organization and vice versa [25]. Therefore, an IS change can be treated as an organizational one. The relation between the organization and its IS should be acknowledged and well understood when managing IS changes.

Resistance identification may start with the identification of affected users – individuals, groups and/or organizations. Users are project or program stakeholders that will use its product, service or result [18]. Users can be internal or external to the performing organization [5][18] and there may also be multiple layers of users [18]. It is important to identify all potentially affected users, especially the indirectly affected ones.

4.4 Resistance analysis

When analyzing resistance, it is essential to distinct between reasons for resistance and forms or symptoms of resistance [5][8]. To analyze the symptoms and determine the reasons behind them is one of the most challenging and innovative processes in RM. This process consists of:

- Evaluation of resistance situations and potentials.
- Identification of reasons for resistance.

The results of analysis (e.g. necessity, intensity, relevant target groups and schedule) form the basis for the development of resistance-handling strategies [5].

Resistance can be treated as a form of conflict [5]. Therefore, it is possible to draw parallels between them. The reasons for a conflict can change during its lifetime [17], which can be established for resistance as well. Therefore, the reasons for resistance may be treated with a dynamic component [25].

4.5 Strategies development

The content of the next process “Strategies implementation” is developed in this process. The necessary preconditions for the implementation of resistance-handling strategies may be established in this process as well. This process consists of:

- Planning of resistance-handling strategies.
- Planning of resistance-handling strategies implementation.
- Potential RM team adjustments and development.
- Establishment of a communication basis.

Every resistance situation is unique [8] because resistance is the consequence of an unrepeatable interaction of the key RM elements [25]. Therefore, a general prescription for resistance handling cannot exist. Resistance-handling strategies encompass preventive measures and resistance-resolving strategies [5][7]. Some common resistance-handling strategies are [25]: preparation for the change, role modeling and change support, user involvement, creating the necessary motivation for the change, elimination of communication barriers, consolidation of organizational and user values, user evolution, creation of a favorable environment, and external expert involvement.

4.6 Strategies implementation

This process is indefinite in general. Its content is developed in the previous process “Strategies development”.

Resistance-handling strategies may vary a great deal but two of the most important factors for their implementation do not. These two factors are timing and pacing [8]. Timing is about knowing the right time to implement a strategy. An appropriate strategy may have an opposite effect and might even intensify resistance when implemented at the wrong time.

Pacing has to do with the quantity of the strategy to be implemented in a certain time and is related to timing. Each individual is limited with an amount of

change that he can handle in a certain time [8]. Exceeding that limit may intensify resistance as well.

Communication and feedback can help to estimate the best time to implement the strategy and its optimal quantity [8].

4.7 Control

The purpose of this process is to evaluate effectiveness of resistance-handling strategies, trigger planned implementation activities and new iterations of RM when needed. Control may be undertaken regularly [19] and information may be provided with the already described methods. Control can be integrated with other project or program activities, e.g. IS change deployment and other user-oriented processes.

The implementation process can be controlled from different aspects, e.g. [5]:

- Effectiveness of strategies.
- Achieved objectives (e.g. schedule, resources).
- Deviations from assumptions.
- Needs for adjustments.
- Other effects demanding a new iteration of RM.

The result of a strategy might be dramatically positive or negative but also barely noticeable [8]. Therefore, it is important to notice any effect as it may be an important hint that the strategy is working (or not).

4.8 Positioning of RM within the PMI project management standard

Positioning of RM within the project-management standards is an extensive task due to the variety of existing standards of organizations, such as IPMA [9], OGC [13][14] and PMI [18][20][21]. In this paper we propose the positioning of RM within the PMI project-management standard which does not directly address the issue of user resistance.

Based on the findings of this study, we present our views on the possible amendment of the standard:

- **Resistance as a project or program risk**: In our view, resistance should most certainly be treated as a project or program risk. For example, Fiedler [5] notes in his research that resistance can be managed well when treated as a project or program risk, which the author also confirms with a practical case.
- **RM as a new knowledge area**: Based on the structure of the PMI project-management standard, RM can be placed as a new knowledge area (a methodologically-substantive discipline within the standard).

Based on the presented findings and practical experience, we assess the former option to be more acceptable. We find it reasonable to update the risk-management knowledge area with RM recommendations and approaches.

A new area of knowledge is an interesting proposal which also has some arguments. On the other hand, a new knowledge area would be a major update to the standard. As such, it should be widely accepted and supported first.

5 SUMMARY

The key RM elements, the proposed RM model and the positioning of RM within the PMI project management standard form the RM framework in IT projects and programs. The RM framework facilitates RM but it cannot replace expertise, experience and the “nose” for RM of the RM team members.

In literature, the reasons for resistance are structured in various ways. After the introduction of the key RM elements it would be possible to consolidate the existing structuring approaches according to them.

It is possible to manage IS changes on the strategic level with IT governance [10]. IT governance and other IS change-management approaches typically concentrate on the technologic aspect of IS changes, often overlooking their organizational impact. The problems typically arise in larger IT projects and programs where IS changes should be coordinated with organizational changes. Organizational changes are more problematic because it is more difficult to predict the actual response of individuals and groups in the organization due to the complexity of affected relations. The final success of IS change depends greatly on the response of the organization. Therefore, a need for a new approach arises in the IT area. An approach that should integrate organizational change management, IS change management and IT project or program management. From a broader point of view, it is the need for harmony between technology and people using it.

BIBLIOGRAPHY

[1] A. M. Aladwani, "Change management strategies for successful ERP implementation," *Business Process Management Journal*, vol. 7, iss. 3, p. 266–275, 2001.

[2] L. M. Arciniega, L. González, "Validation of the Spanish-language version of the resistance to change scale," *Personality and Individual Differences*, vol. 46, iss. 2, p. 178–182, 2008.

[3] W. H. Bovey, A. Hede, "Resistance to organisational change: the role of defence mechanisms," *Journal of Managerial Psychology*, vol. 16, iss. 7, p. 534–548, 2001.

[4] J. Chen, L. Wang, "Locus of control and the three components," *Personality and Individual Differences*, vol. 42, iss. 3, p. 503–512, 2006.

[5] S. Fiedler, "Managing resistance in an organizational transformation: A case study from a mobile operator company," *International Journal of Project Management*, vol. 28, iss. 4, p. 370–383, 2010.

[6] R. Gareis, “Changes of organizations by projects,” *International Journal of Project Management*, vol. 28, iss. 4, p. 314–327, 2010.

[7] P. K. Henry, "Overcoming resistance to organizational change," *Journal of the American dietetic association*, vol. 97, iss. 10, p. S145–S147, 1997.

[8] K. Hultman, "Resistance to Change, Managing," *Encyclopedia of Information Systems*, vol. 3, p. 693–705, 2003.

[9] IPMA, *ICB - IPMA Competence Baseline, Version 3.0*, Zurich: International Project Management Association, 2006.

[10] N. Korac-Kakabadse, A. Kakabadse, "IS/IT governance: Need for an integrated model," *Corporate Governance*, vol. 1, iss. 4, p. 9–11, 2001.

[11] N. M. Lorenzi, R. T. Riley, "Organizational issues = change," *International Journal of Medical Informatics*, vol. 69, iss. 2-3, p. 197–203, 2003.

[12] M. Mihelčič, *Organizacija in ravnateljevanje*, Ljubljana: Fakulteta za računalništvo in informatiko, 2003.

[13] OGC, *Managing Successful Programmes*, London: Office of Government Commerce, 2007.

[14] OGC, *Managing Successful Projects With Prince2*, London: Office of Government Commerce, 2009.

[15] G. Pan, R. Hackney, S. L. Pan, "Information Systems implementation failure: Insights from prism," *International Journal of Information Management*, vol. 28, iss. 4, p. 259–269, 2008.

[16] M. Pardo del Val, C. Martínez Fuentes, "Resistance to change: a literature review and empirical study," *Management Decision*, vol. 41, iss. 2, p. 148–155, 2003.

[17] J. K. Pinto, *Power & Politics in Project Management*, Newtown Square, PA: Project Management Institute, 1996.

[18] PMI, *A Guide to the Project Management Body of Knowledge*, Newtown Square, PA: Project Management Institute, 2008.

[19] PMI, *Practice Standard for Project Risk Management*, Newtown Square, PA: Project Management Institute, 2009.

[20] PMI, *Standard for Portfolio Management*, Newtown Square, PA: Project Management Institute, 2009.

[21] PMI, *Standard for Program Management*, Newtown Square, PA: Project Management Institute, 2009.

[22] T. Proctor, I. Doukakis, "Change management: the role of internal communication and employee development," *Corporate Communications: An International Journal*, vol. 8, iss. 4, p. 268–277, 2003.

[23] R. P. Rumelt, "Inertia and transformation," *Resources in an Evolutionary Perspective: Towards a Synthesis of Evolutionary and Resource-Based Approaches to Strategy*, p. 101–132, 1995.

[24] D. Vavpotič and A. Zrnec, "Šibko povezane virtualne razvojne skupine kot alternativa tradicionalnim razvojnim skupinam," *Elektrotehniški vestnik*, vol. 76, 2009, pp. 182–186.

[25] S. Vrhovec, R. Rupnik, "Obvladovanje odpora pri projektih IT," *Uporabna informatika*, to be published.

[26] D. Waddell, A. S. Sohal, "Resistance: a constructive tool for change management," *Management Decision*, vol. 36, iss. 8, p. 543–548, 1998.

[27] M. Washington, M. Hacker, "Why change fails: knowledge counts," *Leadership & Organizational Development Journal*, vol. 26, iss. 5, p. 400–411, 2005.

[28] K. T. Yeo, "Critical failure factors in information system projects," *International Journal of Project Management*, vol. 20, iss. 3, p. 241–246, 2002.

[29] A. Zrnec and D. Vavpotič, "Pristop za prilagajanje procesa razvoja programske opreme," *Elektrotehniški vestnik*, vol. 75, 2008, pp. 44–49.

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