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The integration of project management and organizational change management is now a necessity☆

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Abstract

Project management processes and the training of new project managers (PM) must consider the impact of organizational change on the success and failure of project implementations. The case for requiring project managers to be conversant with organizational change management (OCM) is made by the author by reviewing supportive literature. In addition, PM certifying agencies like PMI and IPMA are strongly encouraged to include education on OCM to the certification process for new PMs.
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1. Introduction

Crawford and Hassner-Nahmias (2010) highlighted the increasing research interest in the use of projects as a way to institute change in organizations. Parker et al. (2013a) suggested that it is a business imperative for organizations to use project-based initiatives as levers for organizational change to ensure success. Söderlund (2010) indicated that increasing numbers of business projects incorporate change elements. This all being said, organizational change involves more than the rote adherence to a technical process. The management and organizational literatures have demonstrated time and time again that effective change management and leadership significantly influence the success implementation rates of organizational initiatives/projects (Gilley et al., 2008; Jones et al., 2005; Standish Group, 2013; Turner & Müller, 2005). However, academic and non-academic analyses of project outcomes seem to focus, with few exceptions, on project process versus the need to integrate technical and social/psychological issues (Hassner-Nahmias & Crawford, 2008; Leybourne, 2007). The current paper emphasizes the necessity of viewing projects as organizational change initiatives, and suggests that aspiring and current project managers (PMs) should be explicitly trained in applying organizational change methodologies and processes that integrate the aforementioned social/psychological perspectives in the implementation of projects, and/or include the competence in their project teams.

2. Project work and project management

Kerzner (2013) indicates that a project is any series of activities and tasks that have a specific objective to be completed within certain specifications; have a defined start and end date; have funding limits; consume money, people and equipment; and are multifunctional. Project management is the disciplined application of knowledge, skills, tools and techniques to project activities to meet the project requirements (Project Management Institute, 2013; Turner & Müller, 2005). Project management, as a term, first appears in 1953, arising in the US defense-aerospace sector (Johnson, 2002). The development of PERT (Planning and Evaluation Research Techniques) and CPM

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(Critical Path Method) were outgrowths of the "new" discipline of project management, and were the first attempts initiated by the US military and Dupont, respectively, to create management tools for projects (Morris et al., 2012).

Gaddis (1959) seems to be the first to coin the term "project manager." He saw this role as project integration, a middle-management function (Nickels et al., 2010), and by the late 1960s and early 1970s, ideas on organizational integration had begun to attract serious academic attention, e.g., Lawrence and Lorsch's (1967) study on integration and differentiation, Galbraith's (1973) on forms of integration, and Davis and Lawrence's (1977) work on matrix organizations. But it is worth noting that this integration role did not and currently seldom includes the necessity to accommodate social/psychological issues. Instead, it focused on the traditional role of manager as planner, organizer, leader and controller (Nickels et al., 2010). Currently this still largely characterizes the role.

With the spread of the matrix organization and the US Department of Defense (DoD) project management techniques, many executives suddenly found themselves managing projects for the first time (Morris, 2012). Conferences and seminars on how to manage projects proliferated. The US Project Management Institute (PMI) was founded in 1969; the International Management Systems Association (also called INTERNET, now the International Project Management Association — IPMA) in 1972; and various European project management associations formed at the same time (Morris et al., 2012). Again, the perspective taken toward PM was essentially a middle management one. It centered on the challenges of accomplishing the project goals that had been given, and on the tools and techniques for doing this; it was rarely the successful accomplishment of the project per se, which is after all what really matters. Worse, the performance of projects, already too often bad, was now beginning to deteriorate sharply (Morris, 2012).

3. Project Management Bodies of Knowledge (PM BoKs)

The seminal drive for the development of a PM BoK was the belief that there should be some form of certification of competence if it was to be considered a profession (Cook, 1977). The initial 1983 PMI PMBoK® had six knowledge areas; the most recent one has expanded to nine with five process groups as follows:

The five *process groups* are:

1. Initiating
2. Planning
3. Executing
4. Monitoring and controlling
5. Closing.

The nine *knowledge areas* are:

1. Project Integration Management
2. Project Scope Management
3. Project Time Management
4. Project Cost Management
5. Project Quality Management
6. Project Human Resource Management
7. Project Communications Management
8. Project Risk Management
9. Project Procurement Management.

The United Kingdom's (UK) Association for Project Management (APM) has followed a similar path as the one adopted by PMI, but they saw the PMI's model as too narrow. In 1991, they produced a broader document that gave recognition to matters such as objectives, strategy, technology, environment, people, business and commercial issues (Morris et al., 2006). Since then, the APM BoK has developed at least five revisions, and APM's explicit advocacy of Agile Project Management is accompanied by a more direct acknowledgment of the need to include social system concerns (Charvat, 2003; Leffingwell, 2007; Sheffield & Lemétayer, 2013). To some extent, Agile focuses on the importance of culture, people development, self-management and self-discipline, participatory decision-making, customer focus and less bureaucracy. However, there has been little research evaluating the degree to which this focus has been demonstrated in practice, and what there is (e.g., Hope & Amdahl, 2011) suggests that while there is promise, Agile is not a homogeneous practice, and when applied in the IT industry, cross-disciplinary conflicts often get in the way of participation between technical designers and end-users. In 1998, the IPMA published its Competence Baseline to support its certification program, and imported almost wholesale the APM BoK (Morris, 2012).

4. Project management process

4.1. Success and failure

During the period between and including 1970s and 2000s, typically identified sources of project difficulties were: unclear success criteria, changing sponsor strategy, poor project definition, technology, concurrency, poor quality assurance, poor linkage with sales and marketing, inappropriate contracting strategy, unsupportive political environment, lack of top management support, inflation, funding difficulties, and inadequate manpower (Flyvbjerg et al., 2003; Meier, 2008; Miller & Lessard, 2000; Morris & Hough, 1987). No overt attention was paid to the impact of organizational change, although there was a growing interest in strategy (Artto et al., 2008), the impact of organizational culture (Shore, 2008), behavioral competencies of the project manager (Aitken & Crawford, 2008), and leadership (Müller & Turner, 2007), to name a few of the variables that recently have been examined more closely which are beyond the use of tools, techniques and practices of project management.

The topic of project success has been a significant concern in the PM literature (Cooke-Davies, 2002; Fortune & White, 2006). As noted above, much research has been conducted in an attempt to identify the factors that determine it. The findings, however, have tended to reflect the technical bias that characterized the approach adopted by most

investigators and the "worldview" applied to project management, i.e., if the researchers were unconcerned/unaware of the impact of human factors, and instead were biased toward examining technical issues, then the critical success factors (CSFs) were technical in nature. For example, Kaminsky (2012) examined the influence of non-technical leadership practices such as taking responsibility, giving work back to people, and getting stakeholders to embrace change on IT project success and concluded that there is an explicit need to integrate non-technical with technical practices such as risk management, time management, and quality management. Yet his examination of what he has called "leadership practices" is a minority view in academic and practitioner literatures, while the majority perspective is represented by researchers like Ali et al. (2008) who made no mention of the influence of social system issues on the adoption of new technology and instead examined software use, perceived performance impact, functionality, information quality, ease of use, and project complexity. To date, there have been few studies that focus on the contribution made by human factors (Belout, 1998; Belout & Gauvreau, 2004; Henrie & Sousa-Poza, 2005; Leybourne, 2007). This is not surprising since as has been illustrated above, the idea of project success has traditionally been understood from a middle-management perspective, i.e., emphasizing activity-centered, control-oriented issues like project execution and delivery. However, the willingness of employees and managers to accept and implement changes recommended by projects is at least as important a consideration (Jetu & Riedl, 2012).

Belout (1998) has said, "Managing people effectively influences many results of a project" (p. 23); Henri and Sousa-Poza (2005) indicate that a "common theme to project success or failure is the people involved with the project" (p. 5); Cooke-Davies (2002) suggested that "it is fast becoming accepted wisdom that it is people who deliver projects, not processes or systems" (p. 189); and Leybourne (2007) notes that there has been a "changing bias from tools and techniques, toward the social and behavioral aspects of the management of projects" (p. 61). Moreover, Cicmil et al. (2006) suggest that project managers should engage in activities that go beyond the traditional control agenda, and include in their skill set the ability to guide organizational change projects.

Thus, it can be increasingly seen that project management processes must consider how to engage employees from the beginning so that they come to see any initiative as their own, and not simply something to be done because they are told (Crawford et al., 2014). Project success has much to do with whether or not employees adopt the inevitable changes that are advocated, leadership, organizational resistance, culture matching, ethics, user/customer satisfaction, and circumstance, and is not solely dependent on "heroic agency," i.e., the actions of an all-knowing change agent/OD consultant, or extra-competent PM who rigorously applies PM process (Burnes & Cooke, 2012; Kaminsky, 2012; King & Peterson, 2007; MacKay & Chia, 2013; Turner & Zolin, 2012). As far back as 1995, Kotter in an article in the *Harvard Business Review* noted that organizational efforts at transformation fail because of inattention to social system issues rather than because of purely technical and/or procedural reasons (Kotter, 1995). Turner and Zolin (2012) have expanded project performance factors beyond the standard consideration of time, cost, and quality, and suggest the inclusion of measures of user appreciation.

Whether or not a project is successfully implemented is at least partially a function of how much resistance users have to the changes in work. The degree to which employees are expected to comply with the wishes of management and remain uninvolved affects the magnitude of employee resistance (Laframboise et al., 2003; Lundy & Morin, 2013). Thus, resistance can be influenced by the presence or absence of involvement in decision-making (Gilley et al., 2009; Lines, 2004). These are issues that are always explicitly handled by effective organizational change management (OCM) (Cummings & Worley, 2009), yet many project teams do not include such a resource or focus (Sirkin et al., 2005). This implies the minimization of its influence and/or a lack of awareness on the part of the PM. In fact, too many organizations, when forming their project teams, make the inaccurate assumption that project managers (PMs), program managers and/or business analysts (BAs) will handle OCM. But these people have far too many other responsibilities for which they are held accountable to devote the necessary time and energy to address OCM effectively. And all due respect to their capabilities, they cannot possibly have sufficient knowledge of and experience with OCM as do those who have dealt with it consistently throughout their careers (see Crawford & Hassner-Nahmias, 2010).

4.2. Project management and change management

Kerzner's (2013) influential text on project management sets aside a very few pages to address the important impact of organizational change and culture on the initiation, process and implementation of projects. While considering conflict and dysfunctional teams, the analysis seems to be cursory and does not reflect the complexity of these issues. Kloppenborg and Opfer (2002) and Leybourne (2007) reviewed project management literature and concluded that while there has been an increase in the efforts to identify the importance of more social/psychological approaches to the success of projects, the implementation of strategic change remains a business problem that cannot be solved by an exclusive focus on project process. Most recently, the PMI seems to be starting to acknowledge formally the import of organizational change management to project success, i.e., the 2014 PMI Research and Education Conference included a change management track in its program agenda.

Nonetheless, the management of organizational change has continued to have a relatively small representation in the project management literature. Also, although project and program management standards address communications and stakeholder management, and these are important in the management of change, the standards do not specifically address the knowledge and skills required to manage organizational and behavioral change as identified in descriptions of various valid change

management models, e.g., Kotter's 8-step change process (Crawford et al., 2014; Hassner-Nahmias & Crawford, 2008).

Organization development (OD) has been, and arguably still is, the major approach to organizational change across the Western world, and increasingly globally (Boje et al., 2011; Burnes, 2007; Dent, 2002; Mirvis, 2006; Mozenter, 2002; Piotrowski & Armstrong, 2005; Ramos & Rees, 2008; Rees, 2011; Wirtenberg et al., 2007). The term OD was coined independently and simultaneously by two groups of National Training Lab (NTL) consultants, Robert Blake and Herbert Shepard working at Esso, and Richard Beckhard and Douglas McGregor working at General Mills (Burnes & Cooke, 2012). Its core components, T-groups, action research, and participative management, also highlighted the relevance and importance of values and the behavioral/social sciences (Burnes & Cooke, 2012; Cummings & Worley, 2009; French & Bell, 1999). Kurt Lewin, the so-called grandfather of organization change, made three major contributions to OD:

1. Planned change — which includes four interrelated elements: field theory, group dynamics, action research and the three-step model of change — unfreeze, move, refreeze (Burnes, 2004, 2007);
2. Showing how psychological theories and techniques developed and used in laboratory experiments to study group behavior could be applied to studying and changing group behavior in the real world (Dent, 2002);
3. Emphasizing the need to promote democratic values and participation in order to tackle conflict (French & Bell, 1999).

Change management, as a subset of OD, has been defined as "the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers" (Moran & Brightman, 2001, p. 111). According to Burnes (2004) change is an ever-present feature of organizational life, both at operational and strategic levels. Therefore, there should be no doubt regarding the importance to any organization of its ability to identify where it needs to be in the future, and how to manage the changes required getting there. Consequently, organizational change cannot be separated from organizational strategy, or vice versa (Rieley & Clarkson, 2001). Due to the importance of organizational change, its management is becoming a highly required managerial skill (Senior, 2002). Graetz (2000) goes as far as suggesting, "Against a backdrop of increasing globalisation, deregulation, the rapid pace of technological innovation, a growing knowledge workforce, and shifting social and demographic trends, few would dispute that the primary task for management today is the leadership of organisational change" (p. 550).

Levasseur (2010), who considers OD and change management synonymous (see also Hornstein, 2001), suggests that the active use of their most effective models, methodologies and processes have potential to improve "the odds of project success" (p. 159). He further proposes that to improve the human side of project implementation, project managers should become more intimately familiar with and use the tools associated with the more well-known and rigorous change management processes, e.g., Kotter's 8-step change methodology (Kotter, 1996). Clearly, this combined with what Cicmil et al. (2006) recommended (i.e., PM's including in their skill set the ability to guide organizational change projects) implies that PM certifying agencies should include content relevant to organizational change management in their qualification requirements.

Choi (2011) in an integrative literature review confirmed the importance of employee engagement and identified four attitudinal constructs that represent employees' attitudes toward organizational change: readiness for change, commitment to change, openness to change and cynicism about organizational change. John Kotter, an emeritus professor at the Harvard Business School, has stated clearly that the focus of change leadership is on crafting a vision that reinforces urgency and minimizes complacency, and then aligning and motivating people affected by the change so that they are prepared to support and adopt it (Kotter, 1996, 2008).

Harvey Kolodny, an emeritus professor at the Rotman School of Management at the University of Toronto has recognized the necessity of integrating the practice of change management with project management (Kolodny, 2004). He has indicated that successful implementation of major managerial innovations (e.g., customer-centric restructuring, team-based systems, enterprise resource planning systems, supply chain redesign, six sigma) which are critical to the survival of organizations, while relying on project management and change management, seldom makes effective use of the interchange between them.

Kolodny (2004) has said that organizations should benefit from a synthesis of the two approaches, but are not, and significant opportunities for learning between the two approaches are being lost. Crawford and Hassner-Nahmias (2010) using data from change projects integrated in IT implementations in different organizations confirm Kolodny's (2004) recommendation. In analyzing a number of case studies, they found that there is often competition between Project/Program Managers and Change Managers for the management role on organizational change projects, which further acts as an impediment to the suggested synthesis. In addition, their findings directly challenge the belief perpetuated by many that Program/Project Managers have the requisite competence to perform the necessary activities required to promote the adoption of project changes.

In 2006, Prosci, a change management research and practice organization headquartered in Loveland, CO, and which is connected to PMI, released their first complete text on the ADKAR model (Awareness, Desire, Knowledge, Ability, Reinforcement), which is what Prosci believes are the building blocks for individual change and was developed based ostensibly on the analysis of research data from over 900 organizations over a 10-year period (Hiatt, 2006). Their research shows that problems with the "people dimension" of change are the most commonly cited reasons for project failures, but interestingly, ADKAR focuses on process instead of people, fails to consider change to be a complex, systemic phenomenon that involves the interdependence of a multiplicity of variables,

and fails to highlight the important distinction between individual and organizational changes.

The Standish Group (2009) maintains that many IT implementations are problematic, while Balogun and Hope Hailey (2004) have reported failure rates in change initiatives as high as 70%. An article integrating results of 49 studies on major change projects showed that complex initiatives fail 67–81% of the time (King & Peterson, 2007). Burnes (2005) has indicated that despite the agreement in the literature that effective change management should be a core organizational competence, successful projects are difficult to find with reported failure rates being 80% or higher. Nonetheless, it is worth noting that it is not the statistics themselves on which one should focus, so much as what has been posited to underlie them. That is, while some authors have challenged the validity of the Standish Group (2009) numbers in particular (e.g., Glass, 2005; Jørgensen, 2005), others like King and Peterson (2007) have clearly stated that large project implementations are beset by problems which result in less than optimal outcomes, and are a significant contributor to project failures and the lack of learning from those failures is overlooking the impact of social/psychological components–major components of the change phenomenon (Holman et al., 2007; Shepherd et al., 2011). Tarnow (2002) showed a positive correlation between high project user involvement and high project success.

5. Conclusion

This paper has reviewed literature that strongly suggests that change is an inevitable consequence of project implementations, and how the change is "managed" impacts how successful the project will be. Project management and change management use different terminologies and different methodologies. Their respective proponents arise out of different parts of the organization and have different functional and educational backgrounds. They emphasize different skill sets and competencies (Crawford & Hassner-Nahmias, 2010). Nevertheless, they are complementary and mutually supportive disciplines that contribute to the successful implementation of a wide variety of projects. Project success is now recognized to be multidimensional; not only does it utilize the traditional measures of project performance that have been discussed earlier, but it also extends into associated fields such as organizational change management (Crawford et al., 2014).

This paper has also demonstrated that the literature on project success factors has been relatively quiet about the role of organizational change, just as the PMI and other organizations such as APM that offer training on project management are similarly quiet (Turner & Müller, 2005). Moreover, this paper suggested that the competition between change managers and project/program managers is counterproductive and is an obstacle to project success. It should change to cooperation given that the likelihood of timely and effective project implementation is optimized by the collaboration.

The past omission of an explicit focus on organizational change has been surprising given that all knowledge areas in the Project Management Body of Knowledge (PMBoK) incorporate in one way or another the management of change, although this is never explicitly acknowledged (Project Management Institute, 2004). This observation, in part, also has been made by Griffith-Cooper and King (2007), who said, "The nature of project management is change" (p. 14). They also noted that while recognizing that change is integral to project initiation, management, implementation and continuation, no area of the PMBoK specifically addresses the human components of change and how they impact project implementation success. Moreover, although there was recognition of the potential for projects to catalyze organizational innovation/change as far back as 1996 (Partington, 1996), there has been little concerted effort noted in the PM literature to more explicitly integrate project management with change management.

Griffith-Cooper and King's (2007) observations and recommendations focus on the importance of change leadership, while neglecting to incorporate the equally significant influence of the involvement of hands-on workers on implementation success. In fact, the need to address the importance of the social system is often ignored, and it contributes significantly to the success and/or failure of all kinds of project implementations (Choi, 2011; Cicmil, 1999; Gardner, 2009; Griffith-Cooper & King, 2007; Levine & Rossmore, 1993; Piderit, 2000).

Currently, the PMI in its PMBoK recognizes 42 processes that fall into five basic process groups and nine knowledge areas that are typical of almost all projects (PMI, 2013). Project Human Resources Management appears as one of the knowledge areas, and one reasonably could expect organizational change management to fall under it. However, this is not the case. Included under this rubric are four processes (PMI, 2013):

1. Human resource planning,
2. Acquisition of team members,
3. Development of the project team, and
4. Team management.

None of them refers in any fashion to organizational change. And none of the remaining five process groups or eight knowledge areas identified by PMI addresses it. Now, this omission could be corrected relatively easily. For instance, in the PMBoK, there is reference made to "integrated change control" in the knowledge area entitled *Project Integration Management*, which is described as a concerted effort to coordinate changes across all knowledge areas. This would be a logical location to address OCM issues since it drives project scope, schedule, cost, quality, risk, and procurement. Traditionally, neither the PMI nor many other certifiers/educators of PMs (e.g., APM, IPMA) have made *integrated*, *programmatic* efforts to acknowledge the potential influence of organizational change on any of these areas, as has been noted earlier. Instead, integrated change control is restricted to addressing requests to change some aspect of the project that might impact one or more areas of project management that have been placed under change control, but does not explicitly include people-related issues (Crawford et al., 2014; Lundy & Morin, 2013).

Interestingly, it should be noted that Change Requests, which are an addition or alteration to the agreed-upon deliverables for a

project, might affect one or several of the following (Griffith-Cooper & King, 2007):

- The work to be done or in progress (scope, solution definition, deliverable definition, etc.),
- The project schedule,
- The project cost,
- The project risk or complexity level,
- The quality of the project deliverables,
- Project contract administration,
- Customer satisfaction (i.e., client, sponsor, stakeholder, end user).

Moreover, the focus of prominent project management guides, such as the APM Body of Knowledge (Association for Project Management, 2006) and the PMI Body of Knowledge (Project Management Institute, 2013) is on change control. The term "change management" is used but primarily in the sense of "the formal process through which changes to the project plan are approved and introduced" (Association for Project Management, 2006, p. 130). This suggests that there appears to be little appreciation that project implementation success is about more than the mechanics provided in the various professional guides.

Of late, a small number of organizations have begun to integrate organization change and project management to realize the planning aspects of project management and the people and organizational orientation of change management (e.g., Canadian Imperial Bank of Commerce — Kolodny, 2004; more broadly in the finance and business services sectors — Crawford et al., 2014). They have begun to appreciate that the discipline and methodology of project management can be integrated with the forward visioning, commitment building and attention to people and culture of change management. They seem to be more aware that success in project management is as much about creating ownership and shared meaning as it is about following the process steps. They seem to appreciate that project managers cannot ignore the effect that organizational changes may have on project outcomes (Kolodny, 2004). Moreover, as mentioned earlier, the management literature is replete with examples of project failures that have been a direct consequence of the failure to attend to organizational change issues. If IS/IT is intended not only to improve organizational cohesion, but also to decentralize functionality, project managers must understand that needs of users change constantly, making continuous attention to change absolutely necessary. In fact, Crawford et al. (2014) note that project management practitioners are using change implementation practices across a range of projects requiring differing degrees of organizational and behavioral change, and across both the finance and engineering industries. They recommended that "junior and entry-level project practitioners" should undertake training, education, and development that "introduces and guides them in the use of change implementation practices" (p. 93). Project management needs to consider the entire lifecycle of a system, thinking beyond design and development.

An analysis of attempts to institute a new distributed learning system (DLS) at RMIT University in Melbourne, Australia demonstrated clearly that judging the success of projects in an organization couldn't be limited solely to the efficiency of the project management processes employed. After three and a half years, the technological system and its maintenance were part of ongoing operations, but change management continued (Kenny, 2003). Helping staff and students effectively use the system, assisting teaching staff to become consistent users of the online learning environment, production of multimedia learning objects, overcoming resistance to using unfamiliar processes and technology, and so on all require mentoring and explicit change support (Kenny, 2003).

Awareness of the impact of OCM on project success has been explicitly identified in the literature only recently (e.g., Parker et al., 2013b; Partington et al., 2005). Moreover, there are few articles similar to Partington et al. (2005) in the PM literature, and the current author believes that this is problematic. The PMI and other educators should expose PMs to the potential influence of change and adoption issues on project timelines and success, and encourage them to get further training and development in the theory and practice of organizational change management beyond the current restricted emphasis on ADKAR. Moreover, organizations like the PMI and the International Project Management Association (IPMA) should advocate for the inclusion of OCM resources on project teams. Following from the analysis undertaken in this paper, in the recruitment for organizational change projects there needs to be consideration for the management of the change and the person who will drive the changes into the organization beyond the daily tasks of managing the Project/Program performed by the Project/Program Managers. The implications of having this additional role are in changes to the way projects are run, including their governance, reports, and all other project activities as well as the development of new project activities, which are change management-specific. There has been sufficient evidence presented in this paper to suggest that all organizations must widen their thinking to acknowledge the existence and importance of OCM in project success. Thus, they should also include education on OCM in the requirements for PM credentialing. Too many organizations persist in a more than 40 year old belief that technology and process trump all else.

Conflict of interest

There is no conflict of interest.

References

Aitken, A., Crawford, L.H., 2008. Senior management perceptions of effective project manager behavior: an exploration of a core set of behaviors for superior project managers. Proceedings of the PMI Research Conference, Warsaw, Poland.

Ali, A.S.B., Anbari, F.T., Money, W.H., 2008. Impact of organizational and project factors on acceptance and usage of project management software and perceived project success. Proj. Manag. J. 39 (2), 5–33.

Artto, K., Martinsuo, M., Dietrich, P., Kujala, J., 2008. Project strategy: strategy types and their contents in innovation projects. Int. J. Manag. Proj. Bus. 1 (1), 49–70.

Association for Project Management, 2006. APM Body of Knowledge, 5th edition. Association for Project Management, High Wycombe.

Balogun, J., Hope Hailey, V., 2004. Exploring Strategic Change. Prentice Hall, London.
Belout, A., 1998. Effects of human resource management on project effectiveness and success: towards a new conceptual framework. Int. J. Proj. Manag. 16 (1), 21–26.
Belout, A., Gauvreau, C., 2004. Factors influencing project success: the impact of human resources management. Int. J. Proj. Manag. 22 (1), 1–11.
Boje, D., Burnes, B., Hassard, J. (Eds.), 2011. The Routledge Companion to Organizational Change. Routledge, London, UK.
Burnes, B., 2004. Managing Change: A Strategic Approach to Organisational Dynamics, 4th edition. Prentice Hall, Harlow.
Burnes, B., 2005. Complexity theories and organizational change. Int. J. Manag. Rev. 7 (2), 73–90.
Burnes, B., 2007. Kurt Lewin and the Harwood studies: the foundations of OD. J. Appl. Behav. Sci. 43 (2), 213–231.
Burnes, B., Cooke, B., 2012. The past, present and future of organization development: taking a long view. Human. Relat. 65 (11), 1395–1429.
Charvat, J., 2003. Project Management Methodologies: Selecting, Implementing and Supporting Methodologies and Processes for Projects. John Wiley & Sons, Inc., New York.
Choi, M., 2011. Employees' attitudes toward organizational change: a literature review. Hum. Resour. Manag. 50 (4), 479–500.
Cicmil, S., 1999. Implementing organizational change projects: impediments and gaps. Strateg. Chang. 8 (2), 119–129.
Cicmil, S.J.K., Williams, T., Thomas, J.L., Hodgson, D.E., 2006. Rethinking project management: researching the actuality of projects. Int. J. Proj. Manag. 24 (8), 675–686.
Cook, D.L., 1977. Certification of project managers — fantasy or reality? Proj. Manag. Q. 8 (3).
Cooke-Davies, T., 2002. The 'real' success factors on projects. Int. J. Proj. Manag. 20 (3), 185–190.
Crawford, L., Hassner-Nahmias, A.H., 2010. Competencies for managing change. Int. J. Proj. Manag. 28 (4), 405–412.
Crawford, L., Aitken, A., Hassner-Nahmias, A., 2014. Project Management and Organizational Change. Project Management Institute, Inc., Newtown Square, PA.
Cummings, T., Worley, C., 2009. Organization, Development and Change, 9th ed. South-Western Cengage Learning, Mason, OH.
Davis, S.M., Lawrence, P.R., 1977. Matrix Organizations. Addison-Wesley, Reading, MA.
Dent, E.B., 2002. The messy history of OB&D: how three strands came to be seen as one rope. Manag. Decis. 40 (3), 266–280.
Flyvbjerg, B., Bruzelius, N., Rothengatter, W., 2003. Megaprojects and Risk: An Anatomy of Ambition. Cambridge University Press, Cambridge.
Fortune, J., White, D., 2006. Framing of project critical success factors by systems model. Int. J. Proj. Manag. 24 (1), 53–65.
French, W.L., Bell, C.H., 1999. Organization Development, 6th edition. Prentice-Hall, Englewood Cliffs, NJ.
Gaddis, P.O., 1959. The project manager. Harv. Bus. Rev. 37 (3), 89–97.
Galbraith, J., 1973. Designing Complex Organisations. Addison-Wesley, Reading, MA.
Gardner, P.J., 2009. Organizational change: all we want is better projects — why so difficult? AACE Int. Trans. PM. 03.1–PM. 03.25.
Gilley, A., Dixon, P., Gilley, J.W., 2008. Characteristics of leadership effectiveness: implementing change and driving innovation in organizations. Hum. Resour. Dev. Q. 19 (2), 153–169.
Gilley, A., Godek, M., Gilley, J.W., 2009. Change, resistance, and the organizational immune system. SAM Adv. Manag. J. 4–10 (Autumn).
Glass, R., 2005. IT failure rates — 70% or 10–15%? IEEE Softw. 22 (3), 110–112.
Graetz, F., 2000. Strategic change leadership. Manag. Decis. 38 (8), 550–562.
Griffith-Cooper, B., King, K., 2007. The partnership between project management and organizational change: integrating change management with change leadership. Perform. Improv. 46 (1), 14–20.
Hassner-Nahmias, A., Crawford, L.H., 2008. Project manager or change manager: who should be managing organizational change? Proceedings of the PMI Research Conference, Warsaw Poland. Project Management Institute, Newtown Square, PA.
Hiatt, J.M., 2006. ADKAR: A Model for Change in Business, Government and our Community. Prosci Research, Loveland, CO.
Henrie, M., Sousa-Poza, A., 2005. Project management: a cultural literary review. Proj. Manag. J. 36 (2), 5–14.
Holman, P., Devane, T., Cady, S., 2007. The Change Handbook: The Definitive Resource on Today's Best Methods for Engaging Whole Systems. Berrett-Koehler Publishers, Inc., San Francisco, CA.
Hope, K.L., Amdahl, E., 2011. Configuring designers? Using one agile project management methodology to achieve user participation. N. Technol. Work. Employ. 26 (1), 54–67.
Hornstein, H., 2001. Organizational development and change management: don't throw the baby out with the bath water. J. Appl. Behav. Sci. 37 (2), 223–226.
Jetu, F.T., Riedl, R., 2012. Determinants of information systems and information technology project team success: a literature review and a conceptual model. Commun. Assoc. Inf. Syst. 30 (article 27), 455–482.
Johnson, S.B., 2002. The Secret of Apollo: Systems Management in American and European Space Programs. The Johns Hopkins University Press, Baltimore.
Jones, R.A., Jimmieson, N.L., Griffiths, A., 2005. The impact of organizational culture and reshaping capabilities on change implementation success: the mediating role of readiness for change. J. Manag. Stud. 42 (2), 361–386.
Jørgensen, M., 2005. Experience with the accuracy of software maintenance task effort prediction models. IEEE Trans. Softw. Eng. 21, 674–681.
Kaminsky, J.B., 2012. Impact of nontechnical leadership practices on IT project success. J. Leadersh. Stud. 6 (1), 30–49.
Kenny, J., 2003. Effective project management for strategic innovation and change in an organizational context. Proj. Manag. J. 34 (2), 43–53.
Kerzner, H., 2013. Project management: a systems approach to planning, scheduling, and controlling, 11th edition. John Wiley & Sons, Hoboken, N. J.
King, S., Peterson, L., 2007. How effective leaders achieve success in critical change initiatives, part 2: why change leadership must transcend project management for complex initiatives to be successful. Healthc. Q. 10 (2), 72–75.
Kloppenborg, T.J., Opfer, W.A., 2002. The current state of project management research: trends, interpretations, and predictions. Proj. Manag. J. 33 (2), 5–18.
Kolodny, H., 2004. Integrating Project and Change Management. Visiting Speaker SeriesJohn Molson School of Business, Concordia University, (Friday, April 9).
Kotter, J.P., 1995. Leading change: why transformation efforts fail. Harv. Bus. Rev. 73 (2), 59–67.
Kotter, J.P., 1996. Leading Change. Harvard Business School Press, Boston, MA.
Kotter, J.P., 2008. A Sense of Urgency. Harvard Business School Press, Boston, MA.
Laframboise, D., Nelson, R.L., Schmaltz, J., 2003. Managing resistance to change in workplace accommodation projects. J. Facil. Manag. 1 (4), 306–322.
Lawrence, P., Lorsch, J., 1967. Organisation and Environment: Managing Integration and Differentiation. Harvard University Press, Cambridge, MA.
Leffingwell, D., 2007. Scaling Software Agility: Best Practices for Large Enterprises. Addison Wesley, Upper Saddle River, NJ.
Levasseur, R.E., 2010. People skills: ensuring project success — a change management perspective. Interfaces 40 (2), 159–162.
Levine, H.G., Rossmore, D., 1993. Diagnosing the human threats to information technology implementation: a missing factor in systems analysis illustrated in a case study. J. Manag. Inf. Syst. 10 (2), 55–73.
Leybourne, S.A., 2007. The changing bias of project management research: a consideration of the literatures and an application of extant theory. Proj. Manag. J. 38 (1), 61–73.
Lines, R., 2004. Influence of participation in strategic change: resistance, organizational commitment and change goal achievement. J. Chang. Manag. 4 (3), 193–215.
Lundy, V., Morin, P.-P., 2013. Project leadership influences resistance to change: the case of the Canadian public service. Proj. Manag. J. 44 (4), 45–64.
MacKay, R.B., Chia, R., 2013. Choice, chance, and unintended consequences in strategic change: a process understanding of the rise and fall of Northco Automotive. Acad. Manag. J. 56 (1), 208–230.

Meier, S.R., 2008. Best project management and systems engineering practices in preacquisition practices in the federal intelligence and defense agencies. Proj. Manag. J. 39 (1), 59–71.

Miller, R., Lessard, D.R., 2000. The Strategic Management of Large Engineering Projects. MIT Press, Cambridge, MA.

Mirvis, P.H., 2006. Revolutions in OD: the new and the new, new things. In: Gallos, J.V. (Ed.), Organization Development: A Jossey-Bass Reader. Jossey-Bass, San Francisco, CA.

Moran, J.W., Brightman, B.K., 2001. Leading organizational change. Career Dev. Int. 6 (2), 111–118.

Morris, P.W.G., 2012. A brief history of project management. In: Morris, P.W.G., Pinto, J.K., Söderlund, J. (Eds.), The Oxford Handbook of Project Management. Oxford University Press, Oxford, UK.

Morris, P.W.G., Hough, G.H., 1987. The Anatomy of Major Projects. Wiley & Sons, Chichester, UK.

Morris, P.W.G., Jamieson, H.A.J., Shepherd, M.M., 2006. Research updating the APM Body of Knowledge 4th Edition. Int. J. Proj. Manag. 24 (6), 461–473.

Morris, P.W.G., Pinto, J.K., Soderlund, J. (Eds.), 2012. The Oxford Handbook of Project Management. Oxford University Press, Oxford, UK.

Mozenter, J., 2002. Recent research links: macro forces, emerging trends and OD's expanding role. Organ. Dev. J. 20 (2), 48–57.

Müller, R., Turner, J.R., 2007. Matching the project manager's leadership style to project type. Int. J. Proj. Manag. 25 (1), 21–32.

Nickels, W.G., McHugh, J.M., McHugh, S.M., Cossa, R., Sproule, B., 2010. Understanding Canadian Business, 7th ed. McGraw-Hill Ryerson, Toronto, ON.

Parker, D.W., Charlton, J., Ribeiro, A., Pathak, R.D., 2013a. Integration of project-based management and change management: intervention methodology. Int. J. Product. Perform. Manag. 62 (5), 534–544.

Parker, D., Verlinden, A., Nussey, R., Ford, M., Pathak, R.D., 2013b. Critical evaluation of project-based performance management: change intervention integration. Int. J. Product. Perform. Manag. 62 (4), 407–419.

Partington, D., 1996. The project management of organizational change. Int. J. Proj. Manag. 14 (1), 13–21.

Partington, D., Pellegrinelli, S., Young, M., 2005. Attributes and levels of programme management competence: an interpretive study. Int. J. Proj. Manag. 23 (2), 87–95.

Piderit, S.R., 2000. Rethinking resistance and recognizing ambivalence: a multidimensional view of attitudes toward an organizational change. Acad. Manag. Rev. 25 (4), 783–794.

Piotrowski, C., Armstrong, T.R., 2005. Major research areas in organization development. Organ. Dev. J. 23 (4), 86–91.

Project Management Institute, 2004. A guide to the Project Management Body of Knowledge (PMBOK Guide), 3rd ed. PMI Publications, Newtown Square, PA.

Project Management Institute, 2013. A Guide to the Project Management Body of Knowledge (PMBOK Guide), 5th ed. PMI Publications, Newtown Square, PA.

Ramos, C.V.Q., Rees, C.J., 2008. The current state of organization development: organization perspectives from Western Europe. Organ. Dev. J. 26 (4), 67–80.

Rees, C.J., 2011. Organisation development and international contexts: values, controversies and challenges. In: Boje, D., Burnes, B., Hassard, J. (Eds.), The Routledge Companion to Organizational Change. Routledge, London, UK.

Rieley, J.B., Clarkson, I., 2001. The impact of change on performance. J. Chang. Manag. 2 (2), 160–172.

Senior, B., 2002. Organisational Change, 2nd ed. Prentice Hall, London.

Sheffield, J., Lemétayer, J., 2013. Factors associated with the software development agility of successful projects. Int. J. Proj. Manag. 31 (3), 459–472.

Shepherd, D.A., Patzelt, H., Wolfe, M., 2011. Moving forward from project failure: negative emotions, affective commitment, and learning from the experience. Acad. Manag. J. 54 (6), 1229–1259.

Shore, B., 2008. Systematic biases and culture in project failures. Proj. Manag. J. 39 (4), 5–16.

Sirkin, H.L., Keenan, P., Jackson, A., 2005. The hard side of change management. Harv. Bus. Rev. 83 (10), 108–118.

Söderlund, J., 2010. Knowledge entrainment and project management: the case of large-scale transformation projects. Int. J. Proj. Manag. 28 (2), 130–141.

Standish Group, 2009. Chaos report 2009. Retrieved from http://www.standishgroup.com.

Standish Group, 2013. Chaos report 2013. Retrieved from http://versionone.com/assets/img/files/ChaosManifesto2013.pdf.

Tarnow, T. A. (2002). Project management techniques that contribute to information technology project success in the finance industry (unpublished doctoral dissertation). Colorado Technical University.

Turner, J.R., Müller, R., 2005. The project manager's leadership style as a success factor on projects: a literature review. Proj. Manag. J. 36 (2), 49–61.

Turner, R., Zolin, R., 2012. Forecasting success on large projects: developing reliable scales to predict multiple perspectives by multiple stakeholders over multiple time frames. Proj. Manag. J. 43 (5), 87–99.

Wirtenberg, J., Lipsky, D., Abrams, L., Conway, M., Slepian, J., 2007. The future of organization development: enabling sustainable business performance through people. Organ. Dev. J. 25 (2), 7–22.