Top ten reasons for process improvement project failures

Jiju Antony
Department of Business Management, School of Management and Languages, Heriot-Watt University, Edinburgh, UK, and

Sandeep Gupta
School of Management and Languages, Heriot-Watt University, Edinburgh, UK

Received 10 November 2017
Accepted 14 November 2017

Abstract

Purpose – The purpose of this paper is to provide the top ten reasons of process improvement projects termination or failure to Lean and Six Sigma professionals and researchers.

Design/methodology/approach – The top ten reasons of process improvement projects termination or failure are based on literature, interaction of authors with Lean Six Sigma Master Black Belts, consultants, practitioners and trainers on various topics of Lean, Six Sigma, general quality management and continuous improvement along several years' experience of the authors.

Findings – The top ten reasons in our opinion include lack of commitment and support from top management; poor communication practices; incompetent team; inadequate training and learning; faulty selection of process improvement methodology and its associated tools/techniques; inappropriate rewards and recognition system/culture; scope creepiness; sub-optimal team size and composition; inconsistent monitoring and control; and resistance to change.

Research limitations/implications – The top ten reasons mentioned in this study are based on only literature and authors' opinion. The authors of this paper have been pursuing a global study to critically evaluate the reasons behind process improvement projects failure based on a case-study approach.

Originality/value – The chief operations officers and senior executives of various businesses can use these top ten reasons to develop project failure risk mitigation strategies and save significant cash-savings associated with such project terminations or failures in some other cases.

Keywords Six sigma, Lean, Continuous improvement, Process improvement, Lean six sigma, Project failures, Termination

Paper type Viewpoint

1. Introduction

In this competitive era, businesses have been facing various kinds of classical and neo-classical challenges. Common classical challenges are shortage of labour, demand uncertainly, inadequate knowledge, whereas neo-classical challenges include change adoption, customer retention and resilience in supply chain. The need for business process improvement has become indispensable to overcome mainly neo-classical or contemporary challenges and to achieve and sustain competitive advantage. Since past few decades, many progressive business enterprises have incorporated various process improvement initiatives, such as lean, six sigma, lean six sigma (LSS), to name a few of them for tackling process- and quality-related issues. However, it has been reported that the impact of these process improvement initiatives (which are generally implemented as project) on business performance is skewed towards either untimely termination or ultimate failure. To avoid failure, the authors perceived that the following top ten reasons have been frequently cited

International Journal of Lean Six Sigma

2040-4166
DOI 10.1108/IJLSS-11-2017-0130

by researchers and well stated by practitioners, which need to be taken into account when deliberating about project failure risk mitigation strategies.

2. Top ten reasons for process improvement project failures

2.1 Lack of commitment and support from top management

The temporary nature of projects makes it essential to have full commitment from top management to avoid time and cost overrun and meeting the overall objectives of the projects. It is expected from management to get involved in each phase of project life cycle, specifically in conceptualization (goal setting and project selection), planning (resource allocation) and implementation (monitoring and control). To align project objectives with overall business or corporate strategy, the project sponsors (in many cases are senior managers in organisations) and project champions (in many cases are heads of various business functions) have to be supportive and committed towards the endeavour on process improvement initiatives.

The companies, who have reported millions of dollars of savings through process improvement projects, are known for their top management prowess in leading the change. For instance, Bob Galvin for Motorola, Jack Welch for GE and Larry Bossidy for Allied Signal (now Honeywell), these are just few success stories among hundreds.

Though it is necessary for top management to get involved and committed, leadership at all levels has to be demonstrated for successful implementation of process improvement projects. In addition, management plays a very crucial role in process improvement projects' selection and goal setting. The literature advises that a key ingredient for successful Six Sigma implementation is project prioritization and selection (Pande *et al.*, 2000; Bañuelas and Antony, 2002). Hence, a systematic methodology for project selection, prioritization and project tracking for its progress driven by committed management is much needed for the setting the pace for process improvement projects.

2.2 Poor communication practices

Communication has been perceived as one of the most crucial catalysts to drive change management process in a process improvement project. It is important to identify barriers to communication early in the project design and implementation phase; otherwise, it may lead to catastrophic failure of a project. Complexity of communication practices arise from many reasons, such as semantics, power politics and organizational and technological issues (Gillard, 2005; Neill and Jiang, 2017). Therefore, there are all sorts of queries related to communication management when conceptualizing a project, for instance – Should projects develop phase wise communication strategy or practices? What should be the mode/medium of communication between various project stakeholders? How frequently they should communicate with each other? How do project leaders communicate with the project champions and sponsors regarding the progress of the project? If a project-based organization overlooks or is unable to answer these queries then it may not realize the full benefits of – voice of customers (VoC) in design and development of products and services; voice of employees (VoE) in improving the efficiency or productivity of the operations; voice of regulators (VoR) in production system design and operations; and even voice of the business (VoB) in meeting the corporate or business objectives at strategic and operational levels. Over the years, it has been realized that quality of communication is more critical than frequency of communication (McDowell *et al.*, 2013). The quality of communication could be assessed by three-item scale (i.e. timeliness, accuracy and usefulness) adapted from the International Communication Association communication audit of communication (Goldhaber and Rogers, 1979), whereas it could be also defined in the terms of

communication openness, discussion efficiency and discussion effectiveness (Lowry *et al.*, 2009).

An efficient communication process triggers information sharing in a project which leads to knowledge management (KM). In the KM framework – "The combination and application of different tools and methods allows the data flow between different systems, analysis of production operation and the failures occurring in the production process" (Sahno *et al.*, 2013). Thus, KM can be used to develop an early warning system for a failing project. The emerging technological development (particularly information and communication technologies [ICTs]) enables global sharing of information across platforms and continents (DiMattia and Oder, 1997) and can serve as a tool within an organization to use knowledge more effectively to track the progress of multi-organizational projects.

2.3 Incompetent team

> Producing major change in an organization is not just about signing up one charismatic leader. You need a group - *a team* - to be able to drive the change. One person, even a terrific charismatic leader, is never strong enough to make all this happen.

A quote by John P. Kotter, change management guru, highlights the importance of team in an organization. The team of competent individuals works as bricks to give strength to an organizational structure. Similarly, a process improvement project cannot fly until and unless it is equipped with a team of adequate skills, desired problem-solving expertise and knowledge and motivation. The project team has to be constituted and optimized based on detailed task description and allocation analysis. Team composition is linked to shared cognition, information sharing, performance and innovation. For many technology projects, even there is need to respond to changing business environment by dynamically learning new skills.

As a process improvement team is generally multifunctional in nature, in a team, members' skills should complement each other and must demonstrate "unity in diversity". To have a competent team, members must have some shared goal and some degree of interdependence (Mathieu *et al.*, 2014). As task interdependence increases, it is important to consider the compatibility and cohesiveness between team members. However, redundancy needs to be avoided to enhance the overall effectiveness of the team. Moreover, having good team dynamics is considered vital for budgetary, functionality and time performance of ICT projects (Gelbard and Carmeli, 2009). Interpersonal dynamics of project teams play a critical role for a team to function effectively for problem-solving strategies (Buffinton *et al.*, 2002).

2.4 Inadequate training and learning

Learning at individual level and at organizational level are two essential elements for sustainable deployment of process improvements projects. As Jack Welch, a business leader who led the Six Sigma initiative at GE, narrated – "An organization's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage". In case of process improvements projects, matrix structure (having hierarchy in different organizational functions) of organization can intensify the pace of learning by ensuring adequate training of project team members who belong to different functional department. Thus, for continuous improvement projects, organizations must rely on strategies which support organic learning between projects through various training programmes and experience-sharing sessions.

The content of the training programme has to be designed judiciously keeping in mind the evolving need of the projects in the dynamic business environment. It is advised that the characteristics of team members have to be determined and considered while deliberating

about training type and its content. Many companies use training courses as part of employee annual performance reviews to address competency gaps, as well as members' desired areas of improvement. Moreover, various performing firms have linked their training content to key performance metrics and then measured its impact on them[1]. Like process improvements' projects, learning is also reflected as a continual process which needs to be synchronized with changing business objectives and challenges. Thus, companies must continually review and revise the links between skills, performance and training programmes. It is suggested that "game-based training method facilitates the training process by increasing users' intrinsic motivation" (Venkatesh and Speier, 2000) which could be linked with psychological traits of trainees based on learning style theory (Kolb *et al.*, 1971).

2.5 Faulty selection of process improvement methodology and its associated tools/techniques

A business enterprise may commit mistake in selecting the appropriate tool/technique for identification of bottleneck in its operations and/or may pick wrong tools in devising the solution. There are many process improvement methodologies; each methodology is developed to address a specific type of operational issue. Each of these methodologies has a set of specific tools. While it is possible to fix most issues with any process improvement methodology and associated tools, it is not efficient. We should select the method and tools that best fit the problem and the resources at hand. Hence, sufficient time has to be spent on selection of most suited methodology and the relevant tools, which primarily drives effective management of process improvement projects. Thomas *et al.* (2016) advocate this by stating:

> In identifying early the typical tools and techniques to be employed, suitable and timely training on them could be executed. This included sufficient time being allocated to collect data and information in order to deploy the tools and techniques. Selection of the correct tools from the toolbox is critical to any LSS project.

Other dimensions of faulty implementation are following incorrect order of tools' application and allocating inadequate time to implement the process improvement methodologies. The aim should be to minimize the overuse and underuse of tools and techniques to develop a primary set of key tools for implementation.

2.6 Inappropriate rewards and recognition system/culture

Many practitioners and academicians strongly back-up the idea of rewards and recognition to keep high spirits among employees and to boost up their morale, which in turn lead to higher productivity and performance at individual and organizational levels. Generally, projects' activities because of their time-bound nature, keep employees on their toes, and even sometimes employees are engaged on more than one project at a time; therefore, it is advocated to incentivize their efforts by appropriate recognition and rewards. For example, McDonald's has boosted performance and productivity by its reward programmes which are aligned to its business strategy[2]. One of the McDonald's project that saw measured improvements for the business was its "Road to Rio initiative" in 2014, which incentivised the top 5 per cent of restaurants based on customer satisfaction ratings in February, March and April 2014. Based on the competition ran in conjunction with the FIFA World Cup, 11 winning members of staff were sent to Brazil. Importantly, it helped to reduce the total experience time in restaurants by 6.1 seconds with improved customer experience. At the end of the three-month project, there was recognition in 213 different restaurants. Similarly:

> Since the launch of "My L'Occitane Rewards", the Company's employee engagement platform has seen a 55 per cent increase in registrations and a 13 per cent increase in spend. The total spend

> has increased to over £600K, which means a saving in excess of a massive £58K for their Associates[3].

Thus, policies of recognition and reward for success help to inspire employees to work towards achievements.

2.7 Scope creepiness

Though process improvement projects are time bound in nature, still scope creepiness is the one of the very common factors for failure. It is essential for a project champion to work with the project leader (usually Six Sigma Green Belts or Black Belts) and define the scope of the project to answer the following questions: What is inside the scope of the project and what is outside the scope of the project? What functionality is essential to be successful versus "nice to have?" (Keil *et al.*, 1998). In an uncertain business environment, change in scope seems to be obvious; however, organization should spare resources to develop advance system for scope forecasting. Therefore, it is important to incorporate scope management techniques at the project planning stage. Proper documentation of the scope of the project not only explains the boundaries of the project but also describes the responsibilities of each member of the team and set up ways for how work that is to be completed will be verified and approved. Moreover, documentation helps to avoid overlapping of tasks and minimize the possibility of conflicts of interest over different responsibilities.

Scope is often defined by a work breakdown structure, and changes should take place only through formal change control procedures. By working on unapproved features of work, a project team devotes time to the unauthorized changes. The work to incorporate these changes must be done within the predetermined time and cost estimates. For example, under London Ambulance Service Computer-Aided Dispatch (LASCAD) project, a computer-aided information system was consistently upgraded and introduced to schedule and rout ambulance service. This system was commissioned about nine months late and failed within two weeks and caused loss of lives of 20-30 people. Moreover, estimated financial cost of failure was £1.1-£1.5m (Hougham, 1996).

2.8 Sub-optimal team size and composition

Team size has been considered as an important factor to ponder upon during the design and conceptualization of a project. It generally depends on project scope, duration and complexity of the projects. Interestingly, according to Lee-Kelley (2002):

> Team size was an issue only in so far as "having enough hours in the day" to cope, although the UK managers had indicated that team size was more significant than structure as the larger the team (a group of eight or more) the more "stretched" the manager.

As we know that an ability to work in teams demonstrates organizational competency and a good sign for a learning organization; therefore, organization must optimize the team size with focus on long-term benefits.

More importantly, the composition of a project team is critical element to decide. There should be adequate representation from relevant functional units. Though diversity in a team is a much-needed feature, the members should be given enough time to understand each other personality for better team cohesion. Additionally, process improvement project facilitators must hold a key position in the organization to ensure management commitment and buy-in. Generally, Master Black Belts (MBBs) have to be deployed in the team as senior coaches with junior coaches (Black Belts and Green Belts) who manage individual project streams. As process improvement projects generally need adequate financial commitment

from the management, small firms might be interested in hiring the service of an MBB on part time or hourly basis.

2.9 Inconsistent monitoring and control (lack of expert supervision)

Monitoring and control in project management is more important than any other stream of management science. Many projects fail either because of *ad-hoc* arrangement of process improvement expert or because of no arrangement. As process improvements are considered the part of continuous improvement initiatives, there should be a permanent expert, who is having a fair understanding of organization business process for consistent monitoring and control. One of the most commonly cited failure factor – *irrational escalation of commitment* – generally occurs when management continues to allocate increasing amounts of resources towards an ineffective course of action without consistent monitoring and control. This kind of management irregularity not only cost millions of dollars because of failure of a particular project but also hurt the spirit of continuous improvement or quality culture in an organization (Crawford and Bryce, 2003).

Monitoring system should be designed and developed to track the progress of a project on real-time basis. The system generated output or report should be consistently disseminated with the help of visual display at workplace, seminar, meeting, interim report etc. This creates awareness among members and employees, which help in taking corrective step, maintaining the momentum of activities and boost the confidence of the management.

2.10 Resistance to change (partial cooperation by employees)

Organizational change projects affect all, as they need an acceptance of new culture. There may be job losses, revision of working practices, new processes, procedures and systems and even new managers for employees to become used to new culture[4]. Therefore, role of employees is crucial in success or failure of any process improvement project. There are ample evidences available which corroborate that employees' participation and involvement is the key for successfully implement change management (Kotter and Schlesinger, 1989; Kerber and Buono, 2005). Hence, it is important for management to understand the causes of employees' resistance or under-performance and to take immediate action to avoid any setback in the long-term. According to literature, there are four different factors of resistance, which are technical, political, individual and organizational (Eckes, 2000).

[. . .] employees' opinions and their cooperation must be integrated to each phase of define, measure, analyse, implement and control (DMAIC) because the ultimate responsibility of implementing the suggested changes lies on them. As per Ohler *et al.*[5]:

> Even if the change is positive, employees are not always willing to embrace the improvements identified through DMAIC projects. However, by involving the employees to solve problems together, instead of providing solutions for them, practitioners can help assure that employees not only buy into process changes, but also fully own the outcome.

Therefore, it is essential to train company executives on strategies to convince resistant employees to maintain a positive culture and reap sustainable advantage of process improvement projects.

3. Conclusions

Many progressive business enterprises implement various process improvement initiatives, such as lean, six sigma and LSS to tackle process negative externality and quality-related issues. However, it has been reported that the impact of these process improvement initiatives (which are generally implemented as project) on business performance is skewed

towards either untimely termination or ultimate failure. To overcome this challenge, the authors perceived the need to highlight the top ten reasons which have been frequently cited by researchers and well stated by practitioners, which need to be taken into account when deliberating about project failure risk mitigation strategies. The scope of the article is limited because findings are based on only literature and authors' opinion. To address this limitation, the authors of the article have been pursuing a global study to critically evaluate the reasons behind process improvement project failures based on a case-study approach.

Notes

1. www.mckinsey.com/business-functions/organization/our-insights/putting-a-value-on-training
2. www.employeebenefits.co.uk/issues/june-2015/mcdonalds-restaurants-puts-motivation-and-reward-at-heart-of-business-strategy/ (accessed 15 October 2017).
3. http://incentiveandmotivation.com/reward-case-study-loccitane/ (accessed 15 October 2017).
4. http://daniellock.com/a-case-study-continuing-failure-change-projects/ (accessed 19 October 2017).
5. www.isixsigma.com/implementation/change-management-implementation/make-it-team-effort-involving-employees-can-lead-lasting-solutions/ (accessed 19 October 2017).

References

Bañuelas, R. and Antony, J. (2002), "Critical success factors for the successful implementation of six sigma projects in organisations", *The TQM Magazine*, Vol. 14 No. 2, pp. 92-99.

Buffinton, K.W., Jablokow, K.W. and Martin, K.A. (2002), "Project team dynamics and cognitive style", *Engineering Management Journal*, Vol. 14 No. 3, pp. 25-33.

Crawford, P. and Bryce, P. (2003), "Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of aid project implementation", *International Journal of Project Management*, Vol. 21 No. 5, pp. 363-373.

DiMattia, S. and Oder, N. (1997), "Knowledge management: hope, hype, or harbinger?", *Library Journal*, Vol. 122 No. 15, pp. 33-35.

Eckes, G. (2000), *The Six Sigma Revolution*, John Wiley and Sons, New York, NY.

Gelbard, R. and Carmeli, A. (2009), "The interactive effect of team dynamics and organizational support on ICT project success", *International Journal of Project Management*, Vol. 27 No. 5, pp. 464-470.

Gillard, S. (2005), "Managing IT projects: communication pitfalls and bridges", *Journal of Information Science*, Vol. 31 No. 1, pp. 37-43.

Goldhaber, G.M. and Rogers, D.P. (1979), *Auditing Organizational Communication Systems: The Ica Communication Audit*, Kendal/Hunt, Dubuque, IA.

Hougham, M. (1996), "London ambulance service computer-aided dispatch system", *International Journal of Project Management*, Vol. 14 No. 2, pp. 103-110.

Keil, M., Cule, P.E., Lyytinen, K. and Schmidt, R.C. (1998), "A framework for identifying software project risks", *Communications of the ACM*, Vol. 41 No. 11, pp. 76-83.

Kerber, K. and Buono, A.F. (2005), "Rethinking organizational change: reframing the challenge of change management", *Organization Development Journal*, Vol. 23 No. 3, p. 23.

Kolb, D.A., Rubin, I.M. and McIntyre, J.M. (1971), *Organizational Psychology*, Prentice-Hall, Upper Saddle River, NJ.

Kotter, J.P. and Schlesinger, L.A. (1989), "Choosing strategies for change", *Readings in Strategic Management*, Macmillan Education, London, pp. 294-306.

Lee-Kelley, L. (2002), "Situational leadership: managing the virtual project team", *Journal of Management Development*, Vol. 21 No. 6, pp. 461-476.

Lowry, P.B., Romano, N.C., Jenkins, J.L. and Guthrie, R.W. (2009), "The CMC interactivity model: how interactivity enhances communication quality and process satisfaction in lean-media groups", *Journal of Management Information Systems*, Vol. 26 No. 1, pp. 155-196.

McDowell, W.C., Harris, M.L. and Gibson, S.G. (2013), "The influence of communication and information quality on trust in the small business supply chain", *Journal of Applied Management and Entrepreneurship*, Vol. 18 No. 2, p. 21.

Mathieu, J.E., Tannenbaum, S.I., Donsbach, J.S. and Alliger, G.M. (2014), "A review and integration of team composition models: moving toward a dynamic and temporal framework", *Journal of Management*, Vol. 40 No. 1, pp. 130-160.

Neill, M.S. and Jiang, H. (2017), "Functional silos, integration & encroachment in internal communication", *Public Relations Review*, Vol. 43 No. 4, pp. 850-862.

Pande, P., Neuman, R. and Cavanagh, R. (2000), *The Six Sigma Way: How GE, Motorola and Other Top Companies Are Honing Their Performance*, McGraw-Hill, New York, NY.

Sahno, J., Sevtsenko, E. and Karaulova, T. (2013), "Knowledge management framework for six sigma performance level assessment", Rocha, Á., Correia, A., Wilson, T. and Stroetmann, K. (Eds), *Advances in Information Systems and Technologies*, Springer, Berlin, pp. 255-267.

Thomas, J., Francis, M., Fisher, R. and Byard, P. (2016), "Implementing lean six sigma to overcome the production challenges in an aerospace company", *Production Planning & Control*, Vol. 27 Nos 7/8, pp. 591-603.

Venkatesh, V. and Speier, C. (2000), "Creating an effective training environment for enhancing telework", *International Journal of Human-Computer Studies*, Vol. 52 No. 6, pp. 991-1005.

Further reading

Kornfeld, B.J. and Kara, S. (2013), "A framework for developing portfolios of improvements projects in manufacturing", *Procedia CIRP*, Vol. 7, pp. 377-382.

Corresponding author

Jiju Antony can be contacted at: J.Antony@hw.ac.uk