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The Swiss Project Management Review



PM@CH-Interview: Markus Körner

Integratives Management von Veränderungsprojekten
Markus Körner, Rüdiger Geist, Gennaro Quagliarelli

Generic process improvement approach applied to IT projects in Healthcare sector
Christian Conrad, Nicolas Rosat

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James Greene
Chapter President
PMI Switzerland Chapter

Welcome to the second edition of the PMI Switzerland Chapter's PM@CH – The Swiss Project Management Review. In this edition, you will find some fascinating insight into the state-of-the-art of project management in Switzerland and Europe.

The journey leading to the publication of this second edition has been long – much longer than we originally anticipated. Following the publication of the first edition of PM@CH in December 2006, we received a number of very interesting abstracts and proposals for articles. We are now in the comfortable position to have a pipeline of 1 to 2 editions of factual content.

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I would like to thank everyone involved in the production of PM@CH for their continued support – the authors, who invest hours developing the articles; the reviewers (Dr. Claude D. Diderich; Tiziano G. Babbi, PMP; Arne Winkler, PMP; Sonja Boutari, PMP; and Peggy Hartmann, PMP), who offer constructive feedback and criticism to the authors; and the PM@CH management team (Dr. Claudia Casciaro, PMP; Beat Dietziker and Rüdiger Geist, PMP), who volunteer their time and effort to keep PM@CH moving forward.

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If you would like to volunteer to work on a future edition of the PM@CH – the Swiss Project Management Review, or if you would like to submit an abstract for consideration, please contact the PM@CH management team via e-mail at journal.taskforce@pmi-switzerland.ch.

James Greene

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PM@CH talks to Markus Körner of AGORA Associates



Markus Körner
AGROLA Associates

What is your current job?

I am helping companies and public organisations to get more value from business projects through skill development and redesign of management systems. With 'business projects' I mean projects that are driven by business needs, mostly combining the development of new products or tools and systems with organisational change and some investments in IT.

What did you want to be when you were a child? Why aren't you doing that today?

I wanted to be an author. I still love language. However, somewhere on the way I found out that maybe I don't have that much to say. Fortunately, I am somehow coming back to writing: later this year, my first book on project management will be published. It develops a new approach to project work that specifically addresses business projects – in contrast to classical engineering projects.

When and how did you become interested in Project Management?

I spent the first 10 years of my professional life in dealing with projects without much interest in methodology. For a couple of these years, I was involved in auditing quite a few innovation and change projects. Time and again I saw that classical methodology – tied to the waterfall model and expressed in the bar chart schedule – doesn't really support project managers to be successful. It is too static, and relies too much on up front knowledge and up front planning. Experienced project managers can handle this, but junior and part-time project managers are getting lost. They feel this is nothing more than bureaucracy. Project Management then simply doesn't get applied. Hence, I started to look into alternative, more flexible and more nimble methods that will help us to orderly manage projects without recourse to the WBS and the Gantt-Chart. I found out that for example organisational change projects can learn a lot from SCRUM, one of the agile approaches.

What benefits do you see by being a member of a Project Management organization like PMI? What has being a member of PMI done for your career?

To be honest, the main benefit is rebates on project management books that I buy through the PMI online store (I like reading, too). Also, as a member it is easier to follow up on the development of the mainstream thinking in project management (I always say to myself – don't despair, it's still moving!).

How are you involved in PMI or the Switzerland Chapter activities? How does this involvement benefit the Chapter membership?

I like to share my ideas with a professional audience. For example, I gave a key-note speech in this year's congress of PMI and SMP in the Romandie. Its central theme was: "In a politicised project environment: move your targets!"

What is your motivation for volunteering your time and effort to the Chapter?

For me, it's mostly about getting feedback on new ideas.

In your opinion, what kind of project is the most challenging? Why?

Large scale public infrastructure projects, because they combine the technical complexity of engineering with the institutional and psychological complexity and the dynamics of politics.

What has been your hardest "lesson learned"?

Innovation doesn't sell very well.

What single piece of advice would you give to a young project manager who is just entering the field?

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Integratives Management von Veränderungsprojekten

Abstract

Managing a huge number of change management projects is becoming more and more important for all companies. In this article, we show how project management should be developed to provide a better contribution to these projects. The new 'integrative management of projects' enables the competencies present within the organization. Diverse scientific studies have shown that successful project managers are primarily focused on four different questions and responsibilities respectively:

- 1) Appointment: What is the scope of the project and the mandate of the project leader?
- 2) Project Idea: What is the importance of the project for the company and the different stakeholders?
- 3) Contribution: What kind of contribution is needed from the stakeholders? Which commitments have to be safeguarded?
- 4) Process: What are the legs the project is standing on? What are the 'critical moments' of the change process and how can they be influenced by the project leader?

The central mission of the project leader is the ongoing clarification, formation and the communication of these topics. The concept of the 'integrative management of projects' merges these four topics in an integrated framework. Management of deadlines, cost, quality and scope are furthermore of importance, but reduced to the defined project framework. The 'integrative management of projects' adds a strategic element and perspective, namely its relation to the outside of the project. The main target of the 'integrative management of projects' is to build-up the competencies for change on a company level. It provides the fundamentals to a company, which first have to be anchored, then developed and emphasized.

1 Warum 'Integratives Projektmanagement'?

Viele Unternehmen stehen heute unter grossem Konkurrenzdruck: Der Zwang schnell, kostengünstig und mit hoher Qualität Produkte und Dienstleistungen zu liefern nimmt ständig zu und erzeugt hohe Anforderungen an die **Wandlungsfähigkeit**, insbesondere die der Mitarbeiter und des Managements. Organisatorisch gestaltet wird dieser Wandel typischerweise in Form von Projekten. **Veränderungsmanagement in Projekten ist somit eine kritische Kompetenz für den Erfolg von Unternehmungen geworden.**

2 Das 'Bermudadreieck' des Wandels

Auch wenn die Bedeutung von Auftragsklärung, Stakeholdermanagement usw. allgemein als wesentliche und unabdingbare Bestandteile der Projektsteuerung anerkannt sind, wird immer noch der primäre Schwerpunkt auf das **klassische Projektmanagement**, die Steuerung von Terminen, Kosten und Qualität bzw. Quantität gelegt. Bei genauerer Betrachtung stellt man aber fest, dass das klassische Projektmanagement die Wirklichkeit von Organisationsprojekten kaum erfassen kann. Insbesondere gibt es Schwierigkeiten damit, dass

- das Projektumfeld sich im Projektverlauf oft radikal ändert
- Projekte Teil der 'Mikropolitik' von Organisationen sind
- Ziele sich im Verlauf der Projekte ändern können, ja müssen
- Projekte in einen offenen Wandlungsprozess in die Organisation eingebettet sind
- Projekte von verschiedenen Beteiligten in unterschiedlicher Weise wahrgenommen werden (gleich dem Elefanten, den fünf Blinde begutachten)
- sich zu Anfang in der Regel eine große Zahl vorderhand gleichwertiger Aktivitäten anbieten und sich erst im Projektverlauf herausstellt, welche davon für die gegebene Situation die besten sind
- Projekte durch 'unscharfe' Entscheidungssituationen charakterisiert sind, welche sich durch erhebliche Informationsunsicherheiten und unklare Alternativen auszeichnen.

Als Alternative zur Orientierung am klassischen Projektmanagement gehen einige Unternehmen deshalb dazu über, Projekte mit hohem Potential an Veränderung durch **geschulte Prozess-Berater** begleiten zu lassen. So gut dies im Einzelfall auch gelingen mag: eine **flächendeckende Verwendung** von Organisationsentwicklung (OE) und Prozessbegleitung in Unternehmen ist **teuer** und schlecht planbar. Deshalb verlassen sich viele – wahrscheinlich die meisten – Unternehmen auf besonders erfahrene und geeignete Mitarbeiterinnen oder

Mitarbeiter, welche die Projekte kraft Erfahrungswissen und Intuition zum Erfolg führen sollen. Solche **'Projekthelden'** verfügen oft über beeindruckende professionelle und persönliche Fähigkeiten. Diese verbinden sie meist mit der Grundhaltung, sich aus den vielfach anzutreffenden Machtkämpfen in der Linie herauszuhalten.

Projekthelden sind **Intrapreneure** in Sachen 'ihres' jeweiligen Projekts. Sie haben die **Strategien und Kniffe verinnerlicht**, die für Veränderungsprojekte **erfolgskritisch** sind. So wird **Projektmanagement unnötig personalisiert**. Dies **erschwert** u.a. ein **systematisches Training** von Projektleitungen und damit einen gezielten Aufbau von Kompetenz für Veränderungsmanagement auf Unternehmensebene. Basierend auf u.a. Anwendungsforschungen des **Kompetenzzentrums für Systemische Projektsteuerung am Institut für Betriebswirtschaft der Universität St.Gallen (2004-2005)** und der **systemtheoretischen Organisationslehre** von Luhmann und seinen Schülern (Luhmann 1984, 2000; Baecker 2000) wird im folgenden eine **systemische Konzeption des Managements** aufgezeigt: das **'integrative Management' von Veränderungsprojekten**. Dieses kombiniert Bewährtes aus Erfahrungswissen (der 'Projekthelden'), klassischem Projektmanagement und Organisationsentwicklung, (Abbildung 1).

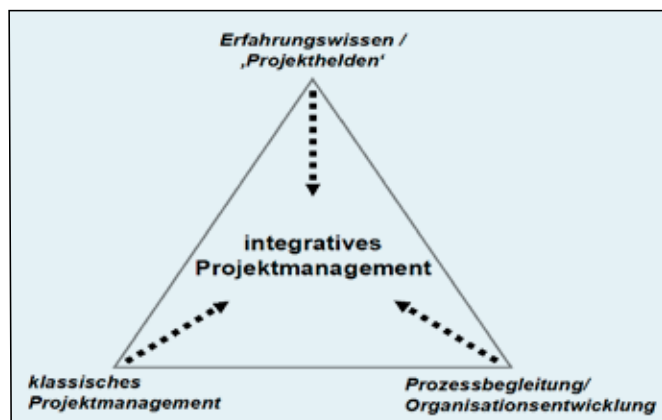


Abb. 1.: Quellen des integrativen Managements von Projekten

3 Integratives Management von Projekten im Überblick

Untersuchungen haben ergeben, dass erfolgreiche Manager von Organisationsprojekten sich **in der Praxis** vor allem mit **vier Aufgaben** bzw. Fragestellungen beschäftigen:

- **Auftrag:** Was ist der Aufgabenumfang des Projektes? Mit wessen und mit welchem inhaltlichen Mandat arbeitet die Projektleitung?
- **Projektidee:** Was bedeutet das Projekt für das Unternehmen und die verschiedenen Anspruchsgruppen? Welche Vision (oder Problemlösungsidee) steht dahinter?
- **Mitwirkung:** Welche Vorleistungen der verschiedenen beteiligten Gruppen und Abteilungen sind erforderlich? Welche commitments (Selbst-Verpflichtungen) für die Anwendung von Verfahren, Verbindlichkeit von Absprachen, und Umsetzung von Maßnahmen sind zu sichern?
- **Prozess:** In welche Etappen wird die Projektarbeit aufgeteilt, und was geschieht von Etappe zu Etappe? Welche sind die 'kritischen Momente' des Veränderungsprozesses, und wie kann die Projektleitung diese gestalten?

Als ihre zentrale Aufgabe widmet sich die Projektleitung der **fortlaufenden Klärung, Gestaltung und Vermittlung** dieser Themen bzw. Fragestellungen. Dies geschieht im Netzwerk der am Projekt beteiligten Personen und Anspruchsgruppen. Das Konzept des integrativen Projektmanagements führt die genannten Themen bzw. Aufgabenbereiche in einem **Integrationsrahmen** zusammen: (Abbildung 2)

Auch weiterhin gilt es, Zeitverbrauch, Kosten und Qualität/Quantität zu steuern. Demgegenüber nimmt das integrative Management von Projekten **zusätzlich** eine **strategische Perspektive** ein, und zwar über seine Aussenorientierung. Die Arbeit an den Schnittstellen zwischen der Projektorganisation und ihrer Umwelt erfordert immer sowohl eine

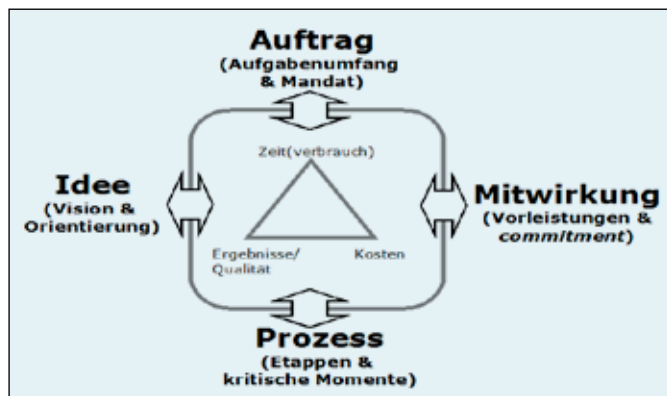


Abb. 2.: Der Integrationsrahmen des Projektmanagements

operative als auch eine strategische Orientierung. So ist z.B. die Entwicklung des Projektauftrags von strategischer Bedeutung; es bedarf dazu eines langfristigen, über die konkrete Situation hinaus weisenden Vorgehens. Gleichzeitig muss die Auftragsvereinbarung operativ wirksam umgesetzt werden. Gleiches gilt für die anderen Schnittstellen (bei Idee, Mitwirkung, Prozess). **Eine strategische und operative Aussenorientierung ergänzt also die operative Binnenoptimierung des klassischen Projektmanagements.** Durch die Verankerung der strategisch-langfristigen Ebene im Integrationsrahmen ist für eine höhere Fähigkeit der Unternehmung zur Komplexitätsbewältigung besser gesorgt, als es aufgrund des traditionellen Zieldreiecks der Fall wäre.

4 Anwendungsbeispiele

Wie die oben geschilderte konzeptionelle Disposition zur Anwendung gebracht wird, und was sie bewirkt, wird im weiteren Text an zwei Beispielen erläutert:

4.1 Mitwirkung: Vorleistungen und commitments

Die meisten Projektleiter kennen die Situation: sie bringen einen beachtlichen Teil ihrer Arbeitszeit dafür auf, Projektbeteiligten wegen bestimmter Zuarbeiten und Vorleistungen sozusagen nachzulaufen. Projekte sind häufig **auf Vorleistungen** ausserhalb des Projektes angewiesen. Ebenso benötigen die Projekte das **commitment** aller Beteiligten für die **Umsetzung** der Projektergebnisse. Das klassische Projektmanagement stützt sich auf die Annahme, dass ein verabschiedeter Projektplan sich quasi von selbst umsetzen würde. Die **Kultur** vieler Unternehmen ist jedoch auf **Fehlervermeidung** ausgerichtet, was dem Engagement leicht abträglich sein kann. Wie geht man damit um? Erstens wird das **Mandat des Projektmanagers** so gestaltet, dass Vorleistungen, Mitwirkungen und Selbst-Verpflichtungen (commitments) von diesem **selbständig eingefordert** werden können. Zweitens macht es sich die Projektleitung zur Aufgabe, unter Beachtung unterschiedlicher Perspektiven, für eine **ausreichende Motivation und Orientierung der Beteiligten** zu sorgen (siehe den Aufgabenbereich ‚Idee‘ des Integrationsrahmens). Drittens wird **Mitwirkung** intensiv und **kontinuierlich, abschnittsweise geplant und sichergestellt** (z.B. über Lesitungsvereinbarungen). Soweit als möglich sollten diese im Kreise der **Projektbeteiligten vereinbart**, und deren Einhaltung **projektöffentlich verhandelt sowie sichergestellt werden**.

4.2 Prozess gestalten: Etappen und die Gunst der Stunde

Viele Maßnahmen des Projektes sind daran gekoppelt, dass Betroffene oder Beteiligte zu bestimmten Einsichten kommen oder schwierige Entscheidungen treffen. Dabei ist kaum vorherzusehen, wie viel Zeit sie dafür benötigen bzw. wann der richtige Zeitpunkt gekommen ist. Gleichzeitig sind dem Projekt oft **Termine vorgegeben**, die unabhängig davon, was im einzelnen passiert, eingehalten werden müssen. Manchmal jedoch geht es gar nicht um vorab geplante Fristen, sondern vor allem darum, eine sich **kurzfristig ergebende ‚günstige Stunde‘** abzuspannen und zu nutzen. Dies ist oft der Fall wenn organisatorische Veränderungen im Gefolge der Entscheidung für den Einsatz einer bestimmten Software, einer geschäftsstrategischen Weichenstellung, oder aber der Umsetzung einer Führungskraft notwendig werden.

Ob window of opportunity oder ‚Gunst der Stunde‘: Dies sind **kritische Momente**, die zu nutzen entscheidend ist. Somit gilt es, den **Zeitablauf** eines Organisationsprojektes **eingedenk dieser Unwäg-**

barkeiten zu gestalten und dabei eine **Übereinstimmung zwischen psychologischer, subjektiver Zeit und der Kalenderzeit** herzustellen. Dazu wird die Projektlaufzeit zunächst einmal in **Etappen** unterteilt. Etappen und deren Übergänge (meist Meilensteine) machen die **zeitliche Struktur** des Projektes ‚**erlebbar**‘. Etappen werden vorderhand unabhängig vom Zeitbedarf einzelner Aktivitäten gedacht und geplant, sie berücksichtigen auch die **psychologischen Aspekte** des Projektverlaufs. Etappen werden ihrerseits in **Arbeitszyklen** unterteilt. Diese sind an die **Kalenderzeit** gebunden. Sie sind **jeweils gleich lang**, zwischen einer und sechs Wochen. Am Anfang jedes Arbeitszyklus werden **Zyklusergebnisse** vereinbart und am Ende des Zyklus wird geprüft, inwieweit sie erreicht wurden. Die Zykluszeit ist kurz genug gewählt, um eine **verlässliche Planung** zu ermöglichen. Im oft chaotisch anmutenden Strom der Ereignisse verkörpern Arbeitszyklen das stetige Fortschreiten der Projektarbeit in Richtung Projektziel.

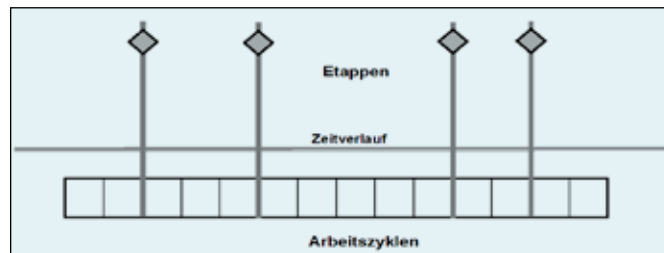


Abb. 3.: Etappen und Arbeitszyklen

Im klassischen Projektmanagement wird das Projekt schon zu Anfang bis in die Ebene der Aktivitäten ‚durchgeplant‘. Das integrative Projektmanagement hält demgegenüber **Änderungsbedarf** und **Änderungsaufwand** der Planung gering. Dazu unterscheidet es verschiedene **Planungshorizonte**. Die **Projektvision** ist langfristig, über das Ende des Projektes hinaus, angelegt. Das **Projektziel** soll mit dem Auflösen der Projektorganisation erreicht sein. Zudem gilt es, **Etappen-Ergebnisse** sowie **Ergebnisse** für jeden **Arbeitszyklus** zu bestimmen. Auch der Projektauftrag und die Vereinbarungen zur Mitwirkung werden nur für jeweils eine Etappe erstellt. **Aktivitäten** werden in die gemeinsame und verbindliche Projektplanung prinzipiell erst für den jeweiligen Arbeitszyklus aufgenommen. Einzelne Verantwortliche (Teammitglieder, Teilprojektleiter, andere Beteiligte) planen diese ‚für sich‘, jedoch mit längerer Vorlaufzeit.

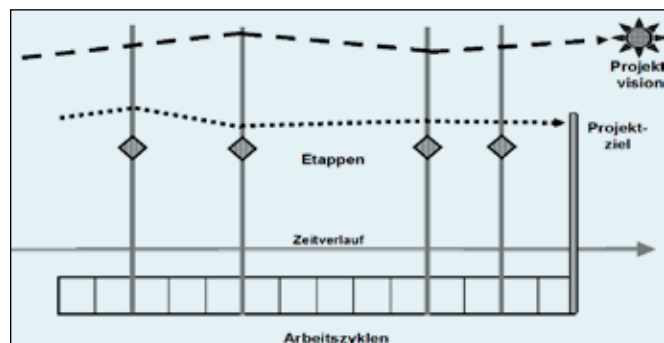


Abb. 4.: Planungshorizonte

4.3 Umsetzungsprinzipien

Ergänzt wird der Integrationsrahmen durch **drei Prinzipien** für die praktische Umsetzung der Projektarbeit:

Lernen: Die Zukunft ist prinzipiell offen. Vorhersagen allgemein und die **Projektplanung** im besonderen haben nur eine sehr **begrenzte Reichweite**. Sie verlieren an Gültigkeit umso mehr, je weiter man in die Zukunft sehen will. Deshalb müssen Lernschleifen in den Projekttablauf eingebaut werden. Diese ermöglichen, den greifbaren Arbeitsfortschritt und die Projektplanung insgesamt periodisch zu überprüfen und fortzuschreiben. Lernschleifen zielen auf die **praktische Bewährung oder Widerlegung von Einsichten oder Erkenntnissen ab**, beispielsweise wie man etwas verbessern kann. Das Prinzip ‚Lernen‘ gilt für **alle Beteiligten**: Auftraggeber, Projektleitung und -team sowie die weiteren Beteiligten.

Dezentrale und eigenverantwortliche Arbeitsplanung: Das **Management** wird so weit als möglich **dezentralisiert**. Die klassische Vision einer allwissenden und im Detail verantwortlichen Führungszentrale wird aufgegeben. Bestimmte zentrale Datenbestände und eine Gesamtverantwortung des Projektmanagements bleiben jedoch erhalten. Der wichtigste Mechanismus zur Verteilung der anstehenden Aufgaben ist die **koordinierte Selbstverpflichtung**. Dies gilt für das Projektteam wie auch für andere Projektbeteiligte im Hinblick auf deren Vorleistungen oder Verpflichtungen (commitments). Innerhalb des Kreises der engeren Beteiligten werden **Leistungen bei gemeinsamen Besprechungen** vereinbart. Ob sie termingerecht erbracht werden, wird in kurzen Zyklen und öffentlich festgestellt.

Vermitteln und Probleme lösen: Das Projektmanagement sieht sich mit einer **Vielfalt** oftmals widersprüchlicher, aber gleichwohl legitimer **Interessen** und **Sichtweisen** konfrontiert. Zudem stehen kurzfristige und langfristige, operative und strategische, sachliche und institutionelle Bezugspunkte nebeneinander, ohne dass einer davon Letztgültigkeit beanspruchen könnte. Die Projektleitung hat die Aufgabe, **zwischen den verschiedenen Perspektiven und Dimensionen** bzw. ihren jeweiligen Protagonisten zu **vermitteln** – immer mit dem **übergeordneten Interesse, einen weiteren Schritt auf das Projektziel hin zu tun**. Sie handelt als **fairer Sachwalter des Projektauftrags**. Als **„Intrapreneur“** in Sachen Projektauftrag sorgt die Projektleitung, wo erforderlich, für konkrete Problemlösungen.

5 Ausblick

Das integrative Projektmanagement für Organisationsprojekte wird im Kern durch sieben Begriffe definiert: Auftrag, Idee, Mitwirkung, Prozess (Komponenten des Integrationsrahmens) und Lernen, dezentrale Arbeitsplanung und Vermittlung/Problemlösung (Prinzipien). Eine umfassende Darstellung liegt als Schrift der HSG vor. Das integrative Projektmanagement zielt auf den **Aufbau von Veränderungskompetenz auf Unternehmensebene**. Dafür stellt es Grundlagen bereit, die in der je einzelnen Unternehmung verankert, und dann ausgestaltet und erweitert werden müssen. Geeignete Mittel dafür sind die Durchführung von **Pilotvorhaben**, die **Fortbildung insbesondere von „Gelegenheits-Projektleitern“** aus der Linie und eine Anpassung eventuell vorhandener **Projektmanagementverfahren**. @

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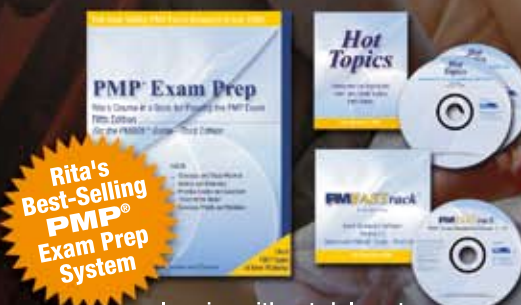
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Generic process improvement approach applied to IT projects in Healthcare sector

Abstract

Operational improvement is at the heart of many organization agendas today. In this paper, a generic process is proposed in order to improve project management capability. The approach combines the extensive knowledge available in industrially recognized frameworks and the flexibility and pragmatic requirements expected by organizations. This especially applies to organizations who do not wish to embark at first on risky and costly improvement programs. The applicability of the generic approach is illustrated in detail in a case study on how to improve project lifecycle activities within a major Swiss university hospital. Findings and recommendations following the CMMI based evaluation are put in perspective with a major reorganization within the IS/IT Department of the hospital.

Introduction

Operational improvement is becoming a key element as business environment changes. This is true for a number of business domains among which project management capability is not the least. The ability to select the right projects from start, and then to bring to life the corresponding products and/or services, are the way to respond proactively to today's business environment changes. This paper introduces a generic process improvement approach for projects which can be applied in organizations where there is consciousness that improvement within projects is possible, but where there is either no willingness or readiness to embark on multi-year complex improvement programmes. Therefore the introduced generic process improvement approach remains extremely pragmatic and close to client actual needs and expectations. In spite of its apparent simplicity and pragmatic implementation, the presented generic approach contains at its heart the latest developments of proven and well-recognized industry standards for process improvement frameworks such as CMMI (Capability Maturity Model Integration [7]), PMBoK (Project Management Body of Knowledge [6]), ITIL (Information Technology Infrastructure Library [3]), to mention only a few of them. The applicability of the generic process improvement approach is illustrated in the context of a project conducted in the IS/IT Department of a university hospital in Switzerland in 2006. Details on the approach as well as implementation choices are described and commented to demonstrate how such a framework can be applied and tailored to client's needs and expectations.

Generic process improvement approach for projects

The need for a generic approach

Established frameworks come with an extensive body of knowledge regarding how the approach has to be conducted, what project organization needs to be put in place, what the phases and deliverables are, to mention only a few. The main drawbacks with these "standard" approaches are their weight, cost and time significant impacts that make them unsuitable for a number of "small" organizations who feel at risk embarking on such complex initiatives. Also, there is a somewhat psychological hurdle whenever such approaches are considered due to their underlying "jargon" and to the investment that is required in order to understand what they can do with it and how they have to do it. The introduced generic process improvement approach combines a pragmatic view on the actual needs of an organization and the extensive knowledge and best practices contained in standard frameworks, without focusing exclusively and heavily on one single model. Based on the activities and context of each organization, the generic approach will only "pick" from the standard framework what is strictly relevant and nothing more.

Description of the generic process improvement approach

The generic approach follows a three-step process as depicted in Figure 1. In the next sections, each step will be further commented in terms of objectives and activities.



Figure 1: Generic process improvement approach

Phase EVALUATE

The main goal of phase EVALUATE is the objective and factual recognition by the organization that there is a potential for improvement regarding the capacity to deliver projects. For some organizations with a long project experience but without a formal project management framework, in other words with a low project management maturity level, this recognition might not be easy to admit by all stakeholders as it requires self-questioning and a visionary character from the management. The evaluation is structured around different domains that are illustrated in Figure 2, with examples of ways to collect data.

	Analyse des documents disponibles	Outil d'évaluation - questionnaire	Entretiens individuels
Processus • Gestion de projet • Développement - Intégration • Support - Infrastructures	●	●	●
Personnes • Compétences gestion de projet • Compétences techniques • Compétences fonctionnelles • Motivation	●	●	●
Culture • Culture « projet » • Attitude face aux risques	●	●	●
Organisation • Structure • Fonctions • Communication	●	●	●

Figure 2: Evaluation matrix

The activities carried out during phase EVALUATE are first preparation of the evaluation, then the actual evaluation, and finally the synthesis work and the presentation of findings and recommendations to the sponsor and management. During preparation, the exact scope of the evaluation is defined together with the sponsor, an agreement is found with the basic terminology (e.g., what does the word "project" exactly mean in the organization?), evaluation tools are tailored to the environment (questionnaires, interview guides, etc.), the persons who will be interviewed are identified and informed about the process (managers, project managers, team-members, end-users, etc.), and a set of representative projects is selected for evaluation. At this time also a link with standard frameworks is considered for the development of the evaluation tools. For example if special attention has to be devoted to project planning processes, PM-BoK or CMMI might be considered, or if product management is of interest, then ITIL might reveal more suitable. Then available methodologies, tools, and documents are analyzed, questionnaires are distributed and interviews conducted. Finally evaluation results are analyzed, compiled, and synthesized, and preliminary structured recommendation are identified and proposed to the sponsor and management during a presentation. There is an important decision point right after the presentation to the sponsor and management which consists in validating the results of the analysis and the preliminary recommendations, and in planning activities and resources for the subsequent steps that will lead to concrete and measurable improvements of the capacity to deliver projects.

Phase PLAN

The objectives of phase PLAN are first to determine the targets of the improvement process (whenever possible in measurable terms), then to identify and prioritize the areas where efforts have to take place, and finally to plan for the required resources. The activities during phase PLAN are first the creation of a subgroup that based on the evaluation results will have the capacity and authority to select and prioritize areas for improvement. This will be achieved during a number of working and/or brainstorming sessions. Selected best practices coming from well-established frameworks (CMMI, PMBOK, ITIL, etc.) will be introduced and their applicability assessed in the context of the organization. Importantly, measurement will be discussed in terms of the most appropriate indicators, obviously taking into consideration data availability over current processes.

Phase PROGRESS

Once the planning is completed and validated, phase PROGRESS can start with the main objective of observing measurable improvements. Phase's activities consist in implementing changes (organization, processes, tools, etc.) as defined during phase PLAN. Finally, once measurements can demonstrate progress over the selected areas, it is recommended not to stop the process, but to enter a continuous improvement loop that will keep the energy and distillate a general improvement attitude within the organization.

Reference frameworks

There is a significant number of standard frameworks that can be considered when dealing with process improvement applied on projects. They can be classified as illustrated in Table 1.

Process maturity models	<ul style="list-style-type: none"> SEI's CMMI (Software Engineering Institute's Capability Maturity Model Integration) PMI's OPM3 (Project Management Institute's Organizational Project Management Maturity Model) Kerzner's PMMM (Project Management Maturity Model)
Quality frameworks	<ul style="list-style-type: none"> 6-Sigma (including Lean 6-Sigma) ISO 9000 Family ISO/IEC 15504
Development Methodologies	<ul style="list-style-type: none"> RUP (Rational Unified Process) Agile Software Development
Others	<ul style="list-style-type: none"> COBIT (Control Objectives for Information and related Technology) OGC's ITIL (Office of Government Commerce's Information Technology Infrastructure Library)

Table 1: Some leading process improvement frameworks

Figure 3 as established by the Gartner Group interestingly classifies a few selected frameworks with an IT perspective. In this paper only CMMI is briefly commented as it was applied in the case study.

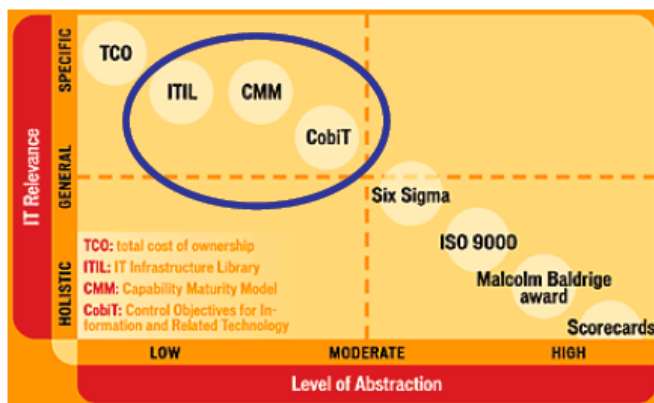


Figure 3: Leading process improvement models (Gartner Group, 2003)

Introduction on CMMI

The CMM (Capability Maturity Model) was developed by the Software Engineering Institute (SEI) at Carnegie Mellon University in the mid-1980s. Since then it has been used extensively in large government projects with a strong IS/IT development flavor, whether in the United States or in the rest of the World. Capability Maturity Model is a collection of instructions an organization can adopt in order to gain better control over its development activities and process (e.g., software). Based on the contents of the CMM model, each software development organization can be ranked according to its maturity. There are five maturity levels which are:

- Initial (chaotic, ad hoc, heroic) the starting point for use of a new process;
- Repeatable (project management, process discipline) the process is used repeatedly;

- Defined (institutionalized) the process is defined/confirmed as a standard business process;
- Managed (quantified) process management and measurement takes place;
- Optimizing (process improvement) process management includes deliberate process optimization/improvement.

The CMMI considers 22 Process Areas (PA) which are grouped into 4 areas (Project Management, Engineering, Process management and Support). Process Areas are further divided into objectives (or goals), practices and subpractices, as can be graphically visualized in Figure 4.



Figure 4: Process areas, goals, practices and subpractices

As an example, the CMMI structure is partially shown in Table 2 for one Process Area, namely PP for Project Planning. The abbreviations SG and SP respectively mean Specific Goal and Specific Practice. Subpractices examples are not provided in Table 2 but can be found in the original CMMI documentation [7].

SG 1 Establish Estimates [PA163.IG101]	
SP 1.1-1	Estimate the Scope of the Project
SP 1.2-1	Establish Estimates of Work Product and Task Attributes
SP 1.3-1	Define Project Life Cycle
SP 1.4-1	Determine Estimates of Effort and Cost
SG 2 Develop a Project Plan [PA163.IG102]	
SP 2.1-1	Establish the Budget and Schedule
SP 2.2-1	Identify Project Risks
SP 2.3-1	Plan for Data Management
SP 2.4-1	Plan for Project Resources
SP 2.5-1	Plan for Needed Knowledge and Skills
SP 2.6-1	Plan Stakeholder Involvement
SP 2.7-1	Establish the Project Plan
SG 3 Obtain Commitment to the Plan [PA163.IG103]	
SP 3.1-1	Review Plans that Affect the Project
SP 3.2-1	Reconcile Work and Resource Levels
SP 3.3-1	Obtain Plan Commitment

Table 2: Example of CMMI structure for Project Planning (PP) – partial view

CMMI allows for two different representations for process improvement, namely the staged and continuous representations which are briefly described hereafter. Organizations new to process improvement tend to prefer a staged approach, which predefines the Process Areas required to attain each maturity level (1-5) and thereby provides a roadmap for institutionalizing best practices. Achievement of a maturity level is based on achievement of the practices of a set of related process areas. Staged tends to be a one-size-fits-all approach; it is "pass or fail". In the continuous representation, an organization selects the process areas in which it

Context and organization

wants to improve and to what degree. Achievement of a capability level is based on achieving the practices of a single process area. This also enables an organization to implement process improvement in different process areas at different rates. As a consequence, an organization can reach capability level 2 for one process area and capability level 3 for another. The continuous approach helps an organization focus on its capabilities and meet business objectives.

Hospital context

The Centre Hospitalier Universitaire de Lausanne (CHUV) is a university hospital with a European exposure. It is one out of five Swiss university hospitals. In the overall organization of the CHUV, the IS/IT Department is responsible for managing information systems of all entities that are part of the CHUV and for elaborating and setting up a coherent strategy for all information system needs for the community of users within the CHUV, within financial constraints. The IS/IT Department has more than 80 employees and is organized around two main activities which can be classified into application development and support, and infrastructure. Headcounts are approximately 40% for application and 60% for

infrastructure. When starting the evaluation project, the IS/IT Department had a vertical and functional structure with 4 application support and development groups and 3 infrastructure groups. This vertical organization was in place since the 90's when the overall hospital information system had to be constructed.

Challenges faced by the IS/IT Department regarding projects

An inventory within the hospital shows no less than 200 different applications and systems that are simultaneously active and used on a daily basis for most of them. Although significant efforts are being invested in order to consolidate systems (and therefore to limit the number of them), the number of applications continues to increase, as more products and solutions are made available on the market to fulfill needs of researchers, administrative staff, clinicians, etc. Applications and systems are getting more and more complex and offer sophisticated ways for interconnecting them. From an end-user's perspective, this integration greatly affects fluidity and performance of related processes. Nevertheless integration issues are a daunting task for the IS/IT Department as the projects have to switch from a vertical perspective (within one functional group) to a transversal one (implying more than one functional group). Deploying more and more applications and systems, and integrating them together, require proper project management capabilities within the hospital. Although projects are being delivered and there are some pieces of a common project environment, there was at the start of the study a general feeling that there was room for improvement in the way projects were carried out and products were being delivered to the hospital's end-users.

Previous initiatives around project process improvement

Already with the objective of improving project processes, efforts have been undertaken in the previous years in order to increase "general maturity level" of the IS/IT Department regarding projects. Issues were discussed such as: "How to efficiently communicate within groups?", "How to learn from mistakes?", "How to increase overall quality of deliverables?", and "How to increase probability of successfully ending a project?". A workgroup within the IS/IT Department was created in order to progress on the issue of common standards and procedures. The workgroup started by formalizing the project management methodology and identified several areas where improvements could take place, such as the delivery of templates for standard documents, and the establishment of guidelines and a common location for physically classifying and archiving project documents. As a result, a new in-house process for managing projects has been deployed within the IS/IT Department in 2003. In parallel, on the infrastructure side, ITIL processes for service support and delivery are being considered since 2005 and the first results were becoming available in 2006.

Why launching a new process improvement initiative?

In 2006, two years after the roll-out of the in-house project management

Evaluation Process

process, there was a strong feeling that not all relevant issues for the IS/IT Department had been properly addressed by the process (especially in the planning, control and closure project management processes). As examples, the in-house process was not fully understood or accepted by all stakeholders, and project estimations still sometimes proved underestimated at the end. Also, the successful process approach introduced by ITIL triggered the need for structuring more the application development and support side.

This chapter illustrates how the steps of the generic process improvement approach for projects were applied in the hospital's IS/IT Department. Results of the evaluation are presented in the following chapter.

Preparation work

This section describes in detail the preparation activities that have to be completed and validated before actually starting process of gathering data through interviews and evaluation tools. The tailoring of the evaluation tool being an important part of the preparatory work, it is presented in its own section.

Common understanding of the term "project"

In the Project Management Body of Knowledge, the Project Management Institute (PMI) defines a project as « a temporary endeavor undertaken to create a unique product or service ». This definition might not prove restrictive enough to be used directly under all situations. Starting from commonly understood « project » activities within the hospital's IS/IT Department, Table 3 shows a list of all activities that could be considered in the scope of the study as projects, depending on which perspective is applied.

Type of activity	Examples
Programme / Project	<ul style="list-style-type: none"> ➤ Deployment of an integrated hospital-wide electronic patient record system ➤ Implementation of a new ERP module ➤ Conception, acquisition (or development) and deployment of a new system for e.g., pharmacy logistics ➤ Merge between two hospitals ➤ Conformity to standards and regulation
Maintenance / Evolution	<ul style="list-style-type: none"> ➤ Adding of a new functionality to an existing system ➤ Upgrade version of a system ➤ Software or hardware upgrade to a newest version for an already existing system
Bug fixing	<ul style="list-style-type: none"> ➤ Correction of a bug (whether blocking, cosmetic or nice-to-have)
Infrastructure deployment	<ul style="list-style-type: none"> ➤ Configuration of a PC Desktop for a new employee ➤ Installation of a card reader to a PC desktop ➤ Physical move of a group of persons or of an entire department

Table 3: Various types of "projects" (examples)

The first type of activity in Table 3 represents what is commonly admitted as projects. These are temporary endeavors which have a beginning and an end date, and which aim at changing a behavior or process in the organization. These projects need of resources (people, infrastructure, finances, etc.) and have to be managed by professional project managers. There is currently no formal distinction between projects and programmes within the IS/IT Department. Maintenance or evolution activities are trickier than classical projects as seen just before, as it can mean engagement of resources in a very variable form. In the case of a software upgrade for an already installed system, a functional evolution might either consist in running an installation program from a CD, or in having to analyze and develop the new functionality (not to mention potential migrations of data). In the former case, the operation might take 2-3 hours only, including some testing. In the latter case, this can become a project with need of resources. A similar observation applies to bug fixing activities, however to a lesser extent. Depending on the bug severity, the time to correct might range from a few minutes to several hours. In the worst case, the bug is so important that either an evolution or a new project is required to fix it. For the deployment of IT infrastructure, activities might be the configuration of a new desktop PC, or the installation of a new network. Depending on the size, the complexity of the operation, and the degree of uncertainty, the activity might be considered as a project or not. Although some of these activities are labeled as projects within the IS/IT Department, the border with operations is close and there is no real formalization on which side it should be. The current study only considers in its scope projects that need a "significant" amount of resources that have to be scheduled and where there is some degree of uncertainty. The effort to treat an activity as a project is important due to planning, defining gates, writing documents, organizing communication, etc. Such effort is certainly not required, or at least to a lesser extent, for either minor activities or for activities with little uncertainty.

Definition of the scope of the evaluation

Only projects carried out within the IS/IT Department are considered in the scope of the evaluation process, whether development and integration activities, or infrastructure deployment projects. Depending on their nature, the leadership on the projects is either on the IS/IT Department or on the user's side. However, on most of the projects with a strong user orientation (such as the selection, deployment and integration of a new clinical system), there are two project managers working in close collaboration representing the two sides, end-user and IS/IT. The scope of the evaluation process needed to be formally validated by the sponsor. In the case of the evaluation process carried out in the hospital, the CIO agreed to act as the sponsor.

Selection of projects to consider

There are hundreds of projects which have been realized within the IS/IT Department in the previous years, dozens of these are still ongoing. For obvious reasons it has been decided to only consider a sample of representative projects. Selection criteria for the project were defined as follows:

- 1 or 2 projects per functional group within the IS/IT Department, making a total of 14 projects assessed;
- Projects must either be recently completed, or at least very close to completion;
- Projects must be representative of the activities of the IS/IT Department.

Based on above criteria, each group manager selected projects to be part of the evaluation scope.

The individual interview process

Individual interviews are the most powerful way for collecting data over all dimensions of the evaluation, whether process, people, culture or organization dimensions. As a complement to more quantitative results obtained through structured questionnaires, interviews provide evidence through concrete examples. They are also very expensive as they require planning of face-to-face individual interviews. Therefore they have to be considered very cautiously. Interviewees were selected among project managers, group managers, team members, and key users (outside of the IS/IT Department). It has been decided to interview all project managers whose projects are already part of the evaluation process. This allows to cross-check results coming from different axes. Due to their pivotal role in the current organization of the IS/IT Department, all group managers were interviewed. A few team members were also invited for an interview, depending on the projects. Finally, in order to give an external perspective on the project activities, some key users who are used to working with the IS/IT Department on project activities were added to the list of interviewees. These persons typically included hospital managers, security officer, etc. As a synthesis, 22 persons were interviewed, namely 7 group managers, 8 project managers, 3 team members and 4 key-users. For each of the four types of interviewee, we defined an interview guide that was distributed prior to the interview. This allowed for the persons to come prepared to the interview, if required to bring some material and evidence. However, it was decided during the interview not to be too directive, and to let each person emphasize where actual problems are. The majority of interviews were conducted by two persons which is a very important prerequisite not to miss anything, whether verbal or non-verbal. No tape recording was performed as this would have been too time consuming for the subsequent analysis, however extensive note taking took place during the sessions.

to gather project-based evidence, all questionnaires must explicitly refer to one project. In a context like the IS/IT Department with an initial low degree of maturity regarding projects, there are significant variations between projects.

Questions derived from the CMMI Acquisition Module

When looking for the best framework to apply in the context of the IS/IT Department, CMMI was selected for the following reasons:

- CMMI has strong links with the IT domain and IT activities;
- CMMI's level of detail seemed very interesting in the context of the hospital's activities;
- CMMI had already been considered a few years ago when defining the in-house methodology.

CMMI being a very comprehensive framework, only relevant CMMI Process Areas were considered for the questionnaire. The main activities of the IS/IT Department are acquisition of external systems (whether "black box" or customized external development), and integration of best-of-breed solutions. Therefore there are no development activities requiring large teams of developers and long project cycles. This speaks up for only considering a subset of the CMMI Process Areas such as those belonging to the CMMI Acquisition Module [8]. The CMMI Acquisition Module is a condensed form of the CMMI framework that defines effective and efficient acquisition practices, directed both internally toward the acquisition project and externally toward project monitoring and control of the selected contractors and suppliers. These practices provide a basis for acquisition process discipline while balancing the need for agility. Figure 5 graphically enhances Process Areas that are part of the CMMI Acquisition Module and which are therefore typical of the activities conducted by the IS/IT Department. The Process Areas of the Acquisition Module are a subset of those of CMMI, with only two exceptions as noted in Figure 5

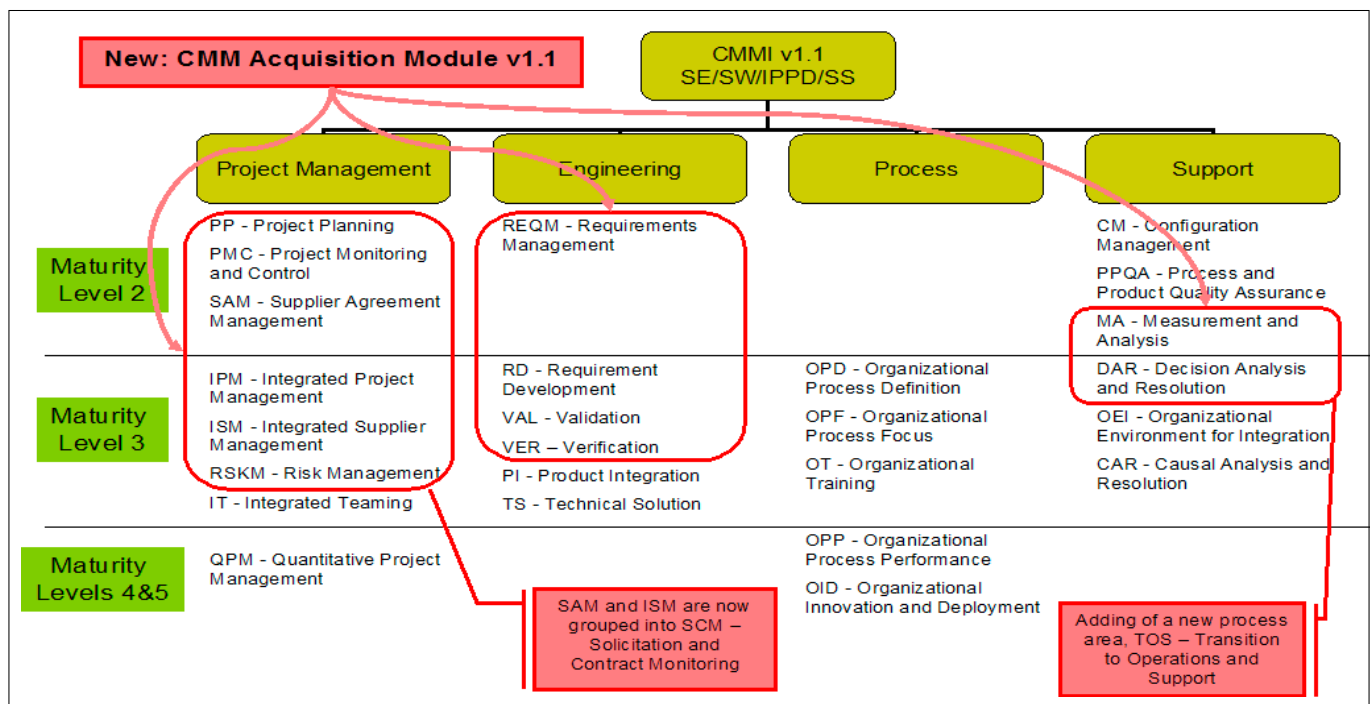


Figure 5: Process areas for CMMI-Acquisition Module

Tailoring of evaluation tool

Under evaluation tool it is currently meant a customizable questionnaire whose contents needs to be adapted to both organizational context and objectives of the evaluation. The main reason for preparing a questionnaire was to gather data that could be exploited quantitatively, in complement to qualitative data that was obtained during individual interviews and project reviews. Regarding context within the IS/IT Department, it was decided to consider four sections in the questionnaire which are as follows.

- Questions derived from the CMMI Acquisition Module [8];
- Sample of questions derived from a benchmarking study by a German consulting group [5];
- Questions related to the in-house methodology within the IS/IT Department;
- General questions about difficulties encountered and suggestions for improvement.

All group managers, most project managers, some project team members and selected key users were targeted by the questionnaire. In order

The size of the questionnaire cannot be too large in order to keep interest of those persons filling it. Starting from the CMMI Acquisition Module Process Areas and their related Specific Goals, between 30 and 40 questions have been prepared.

Each question follows the same format, namely a positive affirmation on the right-hand part and its opposite on the left-hand part. The formulation of the positive affirmation follows closely the formulation of the CMMI specific objective, whether the negative one has been constructed logically. In all cases, special attention has been given in order to adapt the questions to the real situation that exist within the IS/IT Department, for both the positive and the negative affirmations. When necessary, we used footnotes in order to clarify terminology.

Based on the two extremes, the interviewee only has to mark with a cursor between 1 and 10 depending on which side the affirmation is the best representation of the experienced reality.

Benchmarking questions

In addition to the questions originating from the CMMI Acquisition Module, it was decided to add a few questions in order to get a benchmark with other companies. In order to quickly have a comparison basis, a public report by a consulting group has been used [5]. In that report, a number of issues are considered why some companies successfully manage their projects, whereas others fail. We selected some of the most significant reasons for success (or failure), and we added related questions.

Questions related to the in-house project management methodology

As discussed in this paper, there was an important previous effort for setting up a unique and consistent in-house methodology for project management within the IS/IT Department. An internal study performed in late 2005 suggested that the acceptance of this methodology had not been complete among both managers and project managers, with the consequence that many projects were still being run without referring to it, or only partially. We considered adequate to objectively measure this state of fact by adding a few additional questions addressing following concerns:

- Knowledge of the in-house methodology (knowledge of when it has to be used);
- Actual use of the in-house methodology in the projects;
- Benefits and constraints (if any) when using the in-house methodology;

Problems and improvement questions

Finally, the questionnaire attempts to identify the main sources of problems that are encountered during projects. At the same time, project managers are asked what their suggestions are in order to improve success rate of projects. It has been decided to identify a list of common problems and improvement suggestions, and to ask projects managers to rate each of them. In case the lists are not exhaustive, the project managers always have the possibility to add their own problems or suggestions in the blank lines. In order to be sure not to miss any problem or suggestion, the same question about problems and suggestions has been asked during all interviews.

Generation of the questionnaire

The questionnaire was generated automatically using an evaluation tool based on a database system. All questions and answers were then stored in the database which makes the analysis process easier, and allows for multidimensional data analyses.

Findings and recommendations

Assessment and findings

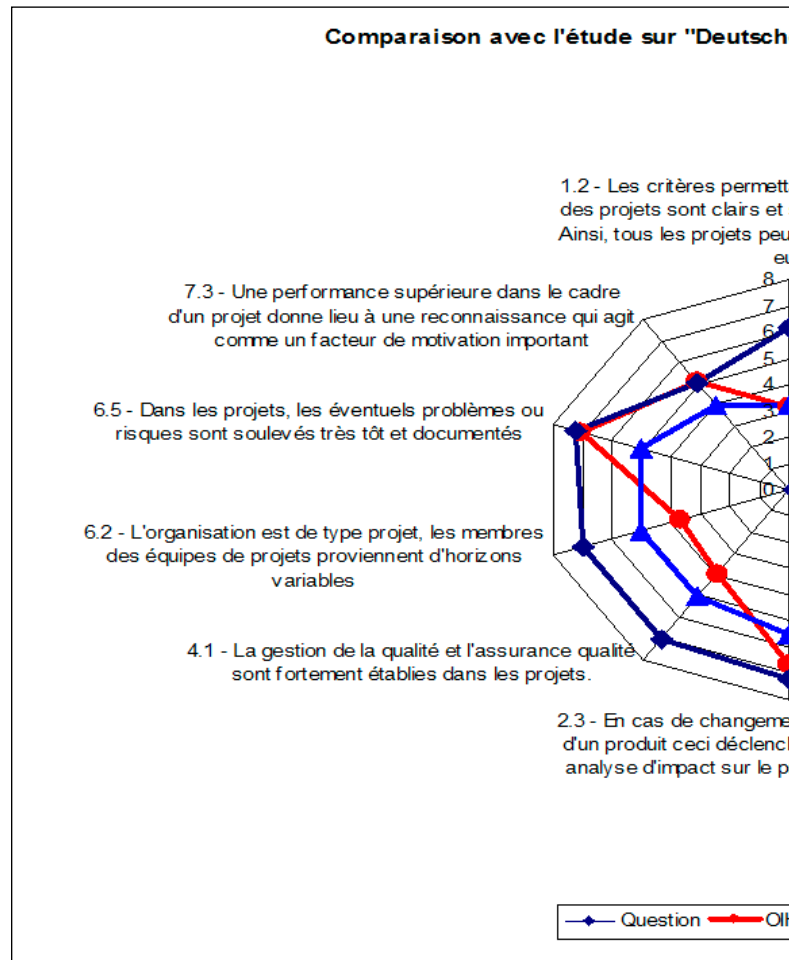
Some considerations over questionnaires and individual interviews

Due to the compulsory status of the evaluation project and the full and direct support by the hospital's CIO, a total of 26 questionnaires were returned on due time and could therefore be analyzed. All people received favorably the questionnaire and showed interest for filling it. One of the comments that were sometimes expressed is that it was "difficult" for people who did not have recent training on project management. Some concepts like "commitment to project plan" or even "project plan" did not prove easily understandable, even with a corresponding French translation. As that risk was identified on beforehand, definitions were provided directly in a glossary part of the questionnaire. The risk that some answers to the questionnaire were delivered without properly understanding the question cannot be fully excluded. However, during subsequent individual interviews, it could be confirmed that most people had actually properly understood the matter. A number of 22 interviews have been conducted. The interviews provided invaluable information on CMMI Process Areas, people, culture, and organization. The majority of the interviewees arrived prepared to the interview, which allowed being very time-efficient. With a population of about 80 employees, and 30-35 active in projects, this means that a large number of people involved in project activities were interviewed, mostly managers and project managers. It was considered very useful to conduct such representative data gathering, although time-consuming. Reasons for conducting a large number of interviews are that the project generated wide interest and large expectations within the organization and during each interview, there were a few new examples that allowed better understand the problems. Nevertheless, that level of detail might not be required under all circumstances and a shorter interview sample of about 20-25% would certainly be sufficient.

Quantitative CMMI-based analysis

When globally analyzing answers to the questionnaire for questions related to CMMI specific goals as depicted in Table 4, following findings can be extracted:

- Some Process Areas score high, typically Solicitation and Contract Monitoring.
- Other Process Areas demonstrate general weaknesses, for example Project Planning and Risk Management both score significantly below average.
- The range between minimum and maximum grades is sometimes large, showing there are different views on the questions depending on the person who answered or the underlying project context. For example, for Solicitation and Contract Monitoring, opinions range from 1 ("nothing is done") until 10 ("everything is done perfectly"). Standard deviation values of up to 30% give an idea of these variations.



When looking at the profile of respondents, interestingly, there is a wide discrepancy between what the end-users think and what is believed within the IS/IT Department. Similarly, but to a lesser extent, development groups tend to be more optimistic than their colleagues of infrastructure and support as related to the application of best practices. Finally, when looking at the function of respondents, managers tend to be more confident about the quality of the processes, whereas project managers are more critical, and end-users the most critical. The main advantage of having all questionnaire results in a single spreadsheet is the possibility to conduct a multidimensional data analysis, with possibility to drill-up and down and to isolate desired components or behaviors. Answers to the questionnaire allow prioritizing Process Areas and/or Specific Goals between them, in order to give an indication of their degree of priority. Observed dysfunctions in the planning and risk management processes are therefore clearly put in front.

Evaluation of the in-house project management methodology

When asked about their understanding and feeling about the in-house project management methodology, the replies deeply vary from one group to the other. Most of the time the methodology is said to be applied in the projects, however, its usefulness is not always recognized by the project manager, and actually looking at produced project documents shows that the application greatly varies between project managers. Regarding applicability, it is not always clear during project initiation phase if the methodology has to be applied or not. For "small" functional enhancements, a full application of the methodology is considered a waste of time and energy; however there are functional enhancements which clearly justify

the use of the methodology. There is no decision process to decide if the methodology has to be used or not. Managers and project managers are the heaviest users of the in-house methodology, whereas infrastructure and support personnel consider only the documents repository system, which allows them to find all project related documentation in a quick and reliable way. Regarding end-users, they are absolutely excluded from the methodology, they are not even aware of its existence.

Benchmark with other organizations

From the benchmarking questions, Fig. 6 shows the positioning of the IS/IT Department (labeled "OIH") as compared with a set of top performing German companies (High), and a set of lower performing companies (Low).

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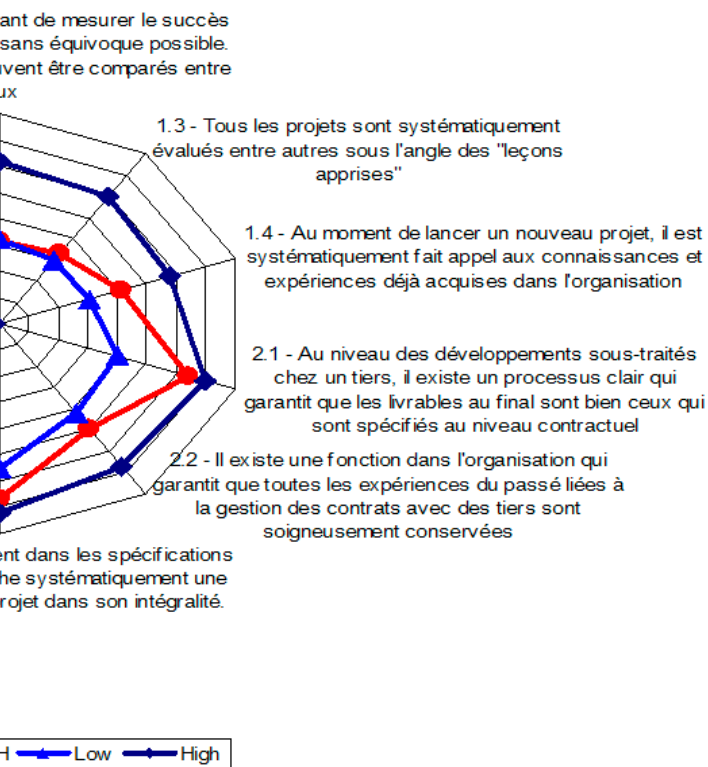


Figure 6: Benchmarking questions

The IS/IT Department scores very well in areas like early detection of problems (6.5), impact analyses during change management (2.3) and outsourced development activities (2.1). On the other hand, it performs poorly for quality management (4.1), project-driven organization (6.2) and experience capitalization (1.3). These results are not surprising as they confirm what has been identified during quantitative analysis and individual interviews.



Figure 7: Graph of dependencies (example)

Problems and improvement questions

When asked about what the main problems are when dealing with projects, most people mention first the lack of legitimacy of the IT project manager when he or she has to manage transversal projects within the IS/IT Department. Dysfunctions in the stakeholder management process come afterwards, followed by insufficient or a lack of commitment by the management. Regarding improvements, a lessons learnt process together with a knowledge base system are mentioned first. A better distinction between project and product management activities follows very closely. Then, training and certifications of projects managers are deemed as significant ways to improve project management processes.

Synthesis of problems and interdependencies

Combining data collected and synthesized through different ways (CMMI, benchmark, problems and improvement, culture, organization, etc.) in order to give a consolidated view is best performed graphically using a causality graph. Due to the number of nodes and the dependency links, it is not simply possible to display the resulting graph here, however for illustration purposes Figure 7 shows how such a graph can be elaborated in order to allow further exploitation of its contents. The symptoms are at the heart, and causes are grouped into concentric circles until root causes are identified in the most external circle. Causes are clustered depending on their domain or underlying Process Area (e.g., Risk Management, organization's culture, etc.).

Recommendations

Based on the results of the evaluation step of the process improvement methodology, recommendations are structured according to the quadrant in Figure 8.

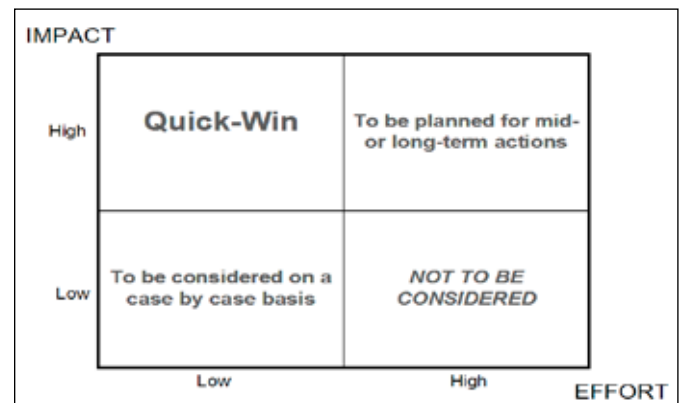


Figure 8: Structure and hierarchy of recommendations

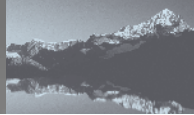
With the highest priority, quick-wins should be considered first in order to practically demonstrate improvements and show the willingness of the management to tackle problems.

Hereafter a selection of proposed quick-wins:

- Enhance the methodology: This could be done either by extending the in-house project management methodology already in place, or by a well-accepted and well-documented market methodology like HERMES [1].
- Training and certification for project managers: Based on the new methodology, this would contribute to using a common terminology around project issues throughout the IS/IT Department.
- Better definition of the project manager's role: Today both the term and the function "Project manager" are misused. Now, many project managers have the title, not the underlying role.
- Effort on communication: Whether internal to the IS/IT Department, or towards "clients" within the hospital, a communication plan could help promote the services offered by the IS/IT Department.

Hereafter a selection of mid- or long-terms recommendations:

- Set-up of a project management office (PMO) within a project governance function: Such a PMO function will help managing a portfolio of projects, from initiation until closure. Benefits and pitfalls when attempting to implement PMO's within organizations can be found in [4].
- Deployment of tools: Project management or portfolio management tools deployed under responsibility of PMO will help structure activities around projects.
- Quality guidelines: These will allow overcoming the quality issues encountered within projects, and make transition to operations a smoother process.



Implementation and next steps

IS/IT Department's reorganization

Soon after the completion of the evaluation phase as described in this paper, a significant reorganization process was announced within the IS/IT Department. Rationale for the reorganization was that the functional organization which contributed to construct the main bricks of the information systems in the previous decade had become insufficiently agile when dealing with consolidation and integration of these same bricks. The previous organization was not prepared to deal efficiently with an increasing number of transversal projects, spanning "traditional" functional group borders. Also, the ongoing deployment of ITIL processes as well as the arrival of a newly-appointed CIO triggered the reorganization. Although the project presented in this paper certainly cannot take all credit for the subsequent reorganization, some elements certainly contributed for a number of key reorganization issues that are described hereafter. These elements are mainly the exhaustive organization's picture of its capability to start and deliver projects and the discussion and prioritization of the identified problems. Obviously, the reorganization process goes further than only project related activities. These aspects are not further considered in that paper.

Impacts on the IS/IT Department on-going reorganization

Regarding projects, the reorganization is articulated around keywords that are projects versus products, processes, governance and PMO. Each of these is further commented and concrete activities and thoughts currently ongoing within the IS/IT Department are presented in the next sections.

Projects versus products

Until now there was no clear separation between project and product related activities. There was no formal transition between the end of a project and the start of the product lifecycle. People, especially project managers, had to switch their mind from project to product at some time, generally corresponding to the first go-live of the project's product. Evolution and maintenance activities, which are typically product lifecycle activities, continued to be part of the initial project. Also, functional managers were both responsible for "their project" and "their products". Therefore, projects actually never ended and "uncertain" workload associated with product management activities seriously hampered project activities, especially planning process. In the new organization, project and product lifecycle activities are clearly separated, both from a functional and process perspective. On the personnel level, this leads to specialization of either product or project manager, with different career paths.

Process orientation

With the arrival of ITIL, a more process-oriented approach started to change the paradigm within the IS/IT Department. The evaluation conducted around the CMMI model confirmed that processes were as much required for projects as they were for support activities. Also standards like PMBoK have deep roots into application of structured processes. Within the reorganization, processes are being inventoried and ways on how to deploy and support them are under investigation. In contrary to the previous organization, processes will be under scrutiny of dedicated process owners instead of being shared by a number of individuals without necessarily common objectives and without formal responsibility. Processes are being identified on both project and products dimensions. For products, ITIL is already being implemented and will certainly continue. For projects there is currently no decision on a reference model to be applied, however a number of ways are being explored (HERMES, PMBoK, CMMI, ...). Also, the link or the transition between projects and products will be of very special interest.

Governance

Instead of having various managers responsible for managing client requests, this responsibility is now under a newly-appointed governance manager. Then starting the right projects and constituting a balanced project portfolio are also under governance manager responsibility. Defining what exactly is a project, the right criteria for arbitrating between numerous project requests and communicating the decisions to business managers will be the main challenges of the governance team in the coming months.

PMO – Project Management Office

An international study [2] shows that simultaneously with the increasing number of PMO's that are being put in place now, there are as many different PMO's structures, roles and responsibilities, as there are organizations implementing PMO's. Though being part of the governance unit, the PMO will work in close collaboration with the project group manager when it will deal with defining common project management methodology, tools, reporting, documents, etc. In addition to these, the PMO will address a number of the issues identified during the evaluation, namely

the non-consideration of internal costs, the desire for a more elaborated project management methodology, including checklists, the set up of a knowledge base, etc. Initial responsibilities of the PMO will consist in collecting and consolidating projects progress, installing and maintaining project management tools, managing the projects repository, providing document templates, maintaining a knowledge base and providing support and coaching to project managers.

Conclusion

Increasing efficiency and effectiveness in today's organizations is definitely on the agenda. If delivering value to shareholders is undisputed in the private economy, very similar objectives in the end apply as well to the public sector where shareholders are actually named citizens. There are several ways on how to reach these efficiency and effectiveness goals. The one considered throughout this report is a generic process improvement approach for projects that can be applied in a number of organizations, in different industries. A complete process improvement project could obviously not be executed in such a short timeframe as three months. Nevertheless, the first phase, consisting in the evaluation and the delivery of recommendations, could be completed by delivering an exhaustive assessment of the way projects are initiated, planned, executed, controlled and finally closed. Results of both questionnaires and interviews clearly demonstrated a number of improvement areas. These areas refer mainly to unstructured and inefficient communication between stakeholders, poor planning and therefore a lack of sufficient control on the projects, unclear roles and responsibilities, etc. An attempt to structure all these problems, including interdependencies, has been performed in order to give a helicopter view on the issues to address. The results of the evaluation as well as the provided recommendations proved extremely valuable and exhaustive when management started with the planning and realization of actual improvement activities. This was materialized through the reorganization of the IS/IT Department as announced end of 2006, focusing on projects versus products lifecycles, processes, governance and PMO – Project Management Office. Even if the IS/IT Department does not primarily target a CMMI level in the future, the use of CMMI as a "customizable" tool for structuring both the evaluation tools and the results proved valuable. @

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