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PM@CH

The Swiss Project Management Journal

“The Beneficial Influence of This on My Personal and Professional Life Was like a Volcanic Eruption” *PM@CH Swiss PM Journal talks to Alexander Matthey, PMP*

Risk Management Best Practices in the IT Industry

The Application of Six Sigma Techniques to Boost the Initiation Phase of a Project

Des difficultés à gérer la connaissance à l’échelle d’une multinationale. Leçons apprises d’un projet global de «Knowledge Management»

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A Word from the Publisher

James Greene
Vice President, Communications
PMI Switzerland Chapter

Welcome to PM@CH, the Swiss Project Management Journal!

The publication that you are holding is the result of many hours of work from a dedicated team of volunteers, who took time out from their busy professional and personal lives to help create a new medium to highlight the state of the art of project management in Switzerland.

In scientific fields, there is the rule "publish or perish". As project managers, we too are expected to constantly pursue professional development, but have fewer opportunities to publish our research results, experiences and knowledge for the benefit of the broader PM community. This new publication has been created to provide such a channel for project managers in Switzerland and Europe.

A bit of history

The idea for a Swiss Project Management Journal began about 1 year ago, as part of the strategic meeting of the Project Management Institute (PMI) Switzerland Chapter Board of Directors. During this meeting, each chapter officer was given the challenge to develop new and innovative ways for our members to earn professional development units (PDUs), and to promote Project Management in Switzerland.

A first call for volunteers and for submissions was published in December 2005. Three people, Dr. Claudia Casciaro, PMP, Beat Dietziker and Rüdiger Geist, PMP, volunteered to work with James Greene, VP Communications, on a newly formed Journal Task Force.

Making it happen

To begin with, we would like to thank **Frank Backes** of Nokia Switzerland for proposing the name for our publication – **PM@CH**.

The team received a number of abstracts and article submissions, covering a wide range of topics – from best practices, success stories, lessons learned and new ideas in project management. The articles you see on the following pages are just a sample of what we received: Several submissions will appear in future editions of PM@CH.

Frank Backes

At the same time, the Task Force discussed the production process: Do we have enough time and, most importantly, the skills to produce a high-quality professional publication? Although this sounds like an exciting challenge, it was quickly clear that we needed professional help. Frehner Consulting in St. Gallen, Switzerland was contacted and agreed to produce PM@CH for us. Another benefit for our Chapter members – the layout and production of PM@CH is 100% self-financing through advertising.

We would like to thank all of the companies who have placed an advertisement in this premier edition of PM@CH! Without an established track record, and with nothing more than a one-page description of our 'vision' for this journal, we still found a number of local and international companies who were willing to take the 'risk' to place an advertisement in this publication. Without their support, this journal could not have been produced. And as a reader of this journal, please take some time to read the advertisements and support our sponsors.

Looking ahead

This is the first edition of PM@CH. The next edition will be published in the 2nd quarter of 2007, with a third edition planned six months later. The publication of the PM@CH Swiss Project Management Journal is intended to become a semi-annual publication. This ambitious goal can only be achieved and maintained with YOUR help!

There are plenty of opportunities for you to get involved! There are volunteer positions available on the PM@CH management team, the editorial and review team, and of course, as author or co-author of an article. Submissions are accepted in English, French and German, and cover the entire spectrum of project management in Switzerland, so our editorial and review team needs volunteers with a wide variety of skills and experience.

If you would like to volunteer to work on a future edition of the PM@CH Swiss Project Management Journal, 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. And of course, if you are a certified Project Management Professional, you earn Professional Development Units (PDUs) for your involvement in the PM@CH team!

James Greene

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“The Beneficial Influence of This on My Personal and Professional Life Was like a Volcanic Eruption”

PM@CH Swiss PM Journal talks to Alexander Matthey, PMP

What is your current job?

A project management consultant and trainer – for the large public. When asked by a peer, I’d say “Project Portfolio, Programme and Project Management enabler and builder, with special emphasis on the practical implementation of Project Portfolio Management (PPS) systems”.

While both of those with a stretch of imagination may include Performance Improvement – Quality, Six Sigma, and/or Organisational PM (OPM3), they still miss one other essential side my current professional occupation: To be a motivator, influencer, organiser, and networker.

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

There was a short 1-2 year period around twelve when I wanted to be a doctor. To understand healing the sick and needy. But probably I was listening to the fabulous stories how much they earn too. It was more like a fashion trend. But my biology note was just very good, while in mathematics in several languages I was rather excellent and I liked economics, loved geography and history.

When applying to the University, I did a choice of reason: Computer Science, major hardware, minor software, thinking that a logic and mathematics based science should feed me better than linguistics in Hungarian – Bulgarian – Russian.

With further studies in management and some other western languages, I’m happy to say I started to do after 18 years full time what I wanted to do. I just did not know then that it was called Project Management.

When and how did you become interested in project management?

Having started in my first job as a programmer, it was the logical progression: Programmer, analyst-programmer, analyst, project manager, department manager. Working for small software companies in the mid 80s delivering complete MIS solutions, I wanted to be the unique interface to our clients. Back then, defining requirements and delivering the overall solution – hardware, software, process adaptation was the role of the professional career of a “techy” person I was. The bigger the project, the more difficult the situation, the less the involvement of the responsible person in the coding part. So I followed the Project Management courses of a professional school in Lausanne in 1986-1987. What amazement! It blew off my invisible hat!

I learned requirement clarification in the form of entity-relationship diagram definitions (stakeholder and scope management), the way of defining and determining future work (process mapping), respect of financial constraints (budget management), conflict solution (HR management), plus establishment of decision making processes, and escalation.

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?

I was lucky to join a Nyon based subsidiary of the world’s second widest consulting network ERP company after SAP, Scala Business Solutions. We had a specially developed methodology for ERP installations (Inspired by PMI, although I did not know it then). A more senior colleague of mine introduced me to a new notion to me: Risk management and mitigation. When I was leaving the company, I was already reading the PMBoK Guide, version 1996. Alone. Fortunately my predestination and experience kept me on reading it, and referring back to it. Professionally speaking, it was hard to decipher, and even harder to translate back into the working environment.

And then the sun came out: Some colleagues contacted me to found a chapter in 2001. The human side, the sharing and networking finally arrived in Switzerland. I / We were not alone anymore. A PMI director-at-large held a speech in Basel at the official opening. It marked me beyond the PM profession. It allowed me to see myself getting involved in the leadership part of the organisation – through volunteering. I’m not exaggerating – the beneficial influence of this on my personal and professional life was like a volcanic eruption – unleashing joy, power, self-actualisation bonds.

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

For the first 3 years I was the only Romandie representative to the Swiss Chapter board. Fortunately my employer at that time, Orange Communications, supported me with the time I was investing in this. I was organising events, often even presenting at them, and representing our chapter at other organisations’ and associations’ events. I was holding lunches and talking about the different aspects of PM and its benefits to just about anybody who came my way.

For the past 18 months, I have had a more outward position – Marketing and Sponsorship role. I still talk about PM and its benefits to external companies, at a higher level in the hierarchy. Once some things become clear, I switch to second gear– to convince some of them to become sponsors and see the value of it remaining it for some years. This increases our (PMI in general) visibility, as well as the understanding of line managers for the implications of project management with their functional role.

The very latest example: While on holidays in Bulgaria recently, I met the most progressive and independent business daily newspaper of the country, and after two hours of discussions, they happily agreed to publish a series of articles on PM for the benefit of their readers, who include most eminent business leaders and young professionals in Bulgaria. Swiss image on the rise. Next year they will join the EU.

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

From the beginning, I perceived it as allowing me to unfold my wings. In fact, the more I put in it, the more I received in return, through acquiring more experience, becoming a better leader and a pacemaker. This is what I was waiting for, without really knowing it. Had I had the opportunity to rise on the corporate ladder, I probably could have had this leadership satisfaction there. The nature of my work – 17 out of 23 years have been in service and consulting companies – made me a strong believer and supporter of “horizontal management” (networking). As there are only two ways – vertical and horizontal, I think PMI’s vocation is of a much higher stature then that of any association. Aren’t we revolutionising management? What could be more elevating than to be part of this?

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

Undoubtedly, the projects which have the most to do with change in people’s habits, ways of working, reorganisations, mergers etc. They are projects too, but their scope is primarily “soft” work.

While software development projects are purely technical (“hard”) and give (only) 26% satisfaction, new MIS system implementations are already harder to deal with, being halfway between the “hard” and “soft” spectrum of projects. When a CEO decides to introduce a new way of management, it’s a “soft” change project, which is actually much harder to successfully implement.

What has been your hardest “lesson learned”?

Good things are not universally seen or accepted as being ‘good’. Progress is not always welcomed, especially if an ill intended person is not benefiting from it. Since Project Management is an alternative way of managing, anybody who stands behind the professional execution of it, which in itself sets precedence, is exposed. This is yet another reason to have the sponsor well anchored into any project. Not only for the success of the project, but for preventing the failure of the Project Manager in general.

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

Get a Project Management mentor for your career.

Find an experienced project manager, who has been there for years, preferably a PMP. Somebody who networks himself, and is ready to help and guide if sees potential and readiness from the young. Listen to his or her advice both professionally and volunteering wise. This can cut out 10 years off the time needed to become a confirmed, respected and happy PM.

And guess where to find a pearl like this? Of course … in the PMI Switzerland chapter.

Lucia Italiano, PMP, holds two Master degrees in Information Technology from the University of Hull – UK, and Languages from the University of Rome – Italy. She has more than 9 years experience in the IT/SW vendor industry. During this period she has covered the roles of Technical Account Manager, Programme and Project Manager for several major SW Vendor companies across Europe. Lucia obtained her PMP certification in 2004. She is currently based in Switzerland, in the Geneva area.

Risk Management Best Practices in the IT Industry

Foreword

The author has more than 9 years experience in software development and solution implementation projects across several industries. Some of the content of this article is specific to the IT industry and IT projects. Risk Management in other industries may vary according to the specific context and contents of the scope of the work.

The diagrams contained in this article are produced by the author unless otherwise stated in the caption. Any similarity to other published diagrams is purely coincidental.

Abbreviations and definitions

This section defines a common terminology to establish understanding for a broader audience than professional project managers.

	Definitions
Stakeholders	the project team members, the project manager, the project sponsors, the subcontractors, your management, end users, business users, etc that are directly and indirectly involved or effected by the project.
Project Lifecycle	different phases or stages a project goes through from start to finish.

A typical project lifecycle would include the following phases or stages:

Pre-Sale	where typical activities would include Proof of Concept, Proposal Development, Contract Development, etc.
Planning	where the project is initiated; typical activities are concerned with developing a detail plan to link activities and deliverables to the schedule, budget and resources.
Execution	where activities are performed and deliverables are produced and tracked against the detailed project plan. This stage coincides with SW product development stages (Design-Build-Test-Deploy).
Closing	where the project is formally closed, activities would include formal sign off of key deliverables, including the contractual agreement for the project, postmortem project reports, customer satisfaction reviews, etc.

	Abbreviations
PM	Project Manager
SW	Software
IT	Information Technology

Introduction

Having worked with IT projects for several years, I realized some time ago that often what seems obvious about managing risks in reality is not. This article is a personal reflection on the risk process and an opportunity to draw some personal conclusions that I hope will be shared by some and constructively criticised by others.

Best practices

These are some of the best practices that I have experienced during many years of applying Risk Management to my projects:

- Revise your project risks regularly. Regularly is maybe a definition too open to interpretation, it is up to your good sense to decide how frequent ‘regular’ really is. Nowadays I do it unconsciously every moment I am thinking about my project. The risk review should not be done in isolation: Use your stakeholders whenever possible. Effective inspiration can come from many sources.

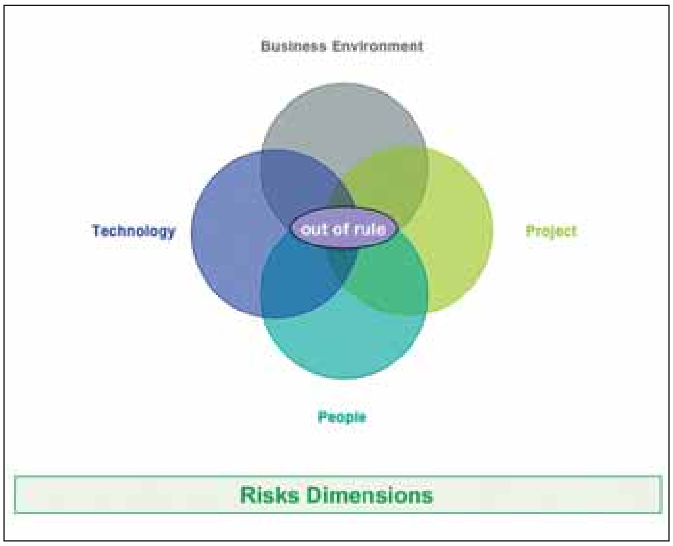
- Build some sort of risk profile for the project, where you capture risks as the project moves along the lifecycle. This list should reflect key project changes, such as a change in client sponsor or key client contact, change of the project manager role, start of a new project phase, or a major change in scope.

- Risk is a major element to be taken into account when estimating. Therefore, the risk list must be current and taken into account when reviewing and revising estimates to completion.

- Risk Management is not a standalone process, and should thus not be dealt with as one. It requires the use of other key processes, such as Communication Management, Expectation Management, Change Management and Issues Management. My tip to you is: understand how these processes all work together and learn to use them together in a bundle.

- Start setting stakeholders’ expectations for collaborative risk management as early as possible in the project lifecycle. I normally include the following concepts in the communication exchange:
  - Every project has some degree of risk.
  - The objective of risk management is to reduce the impact of potential obstacles on delivery of project scope.
  - The most effective way to manage risk is to manage risk collaboratively.
  - The team follows a process that fits the needs of the project.
  - The team communicates about risk at consistent intervals throughout the project life cycle.
  - All project team members (including stakeholders) should be encouraged and rewarded for surfacing project risks.

- Devise common terminology and definitions that are understood by all stakeholders using clear and effective wording. An example of an effective explanation of the concept of the impact dimension could be: “for a given project, the impact of a risk could be expressed as the diminished quality of the end product, increased cost, missed deadlines, reduced functionality, or failure to achieve the goals of the project”.



Risks Dimensions

Multidimensional

The word ‘multidimensional’, with reference to this process, refers to the fact that risks have several dimensions, or sources, and each dimension contains factors that can trigger risk events at any stage of the project lifecycle. Triggers in each dimension can have a varying degree of impact on project elements and a higher or lower probability of occurrence. The junior PM normally only considers the most obvious dimensions, such as Technology. In my experience, the main reason is because the other dimensions are less evident and tangible hence hard to detect. I have come up with four main dimensions, mainly because I found that most of the triggers would fit in nicely:

1. People
– Skills
– Culture
– Professional background
– Hidden agendas

2. Business Environment/Organizational Pressures
– Competition
– Financial health
– Organizational culture
– Mission and goals
– Politics

3. Technology
– Development process
– Development environment
– Product instability and performance
– New technology

4. Project
– Insufficient knowledge transfer
– Lost or incomplete project data or knowledge
– Incomplete or undocumented data
– Unrealistic estimate
– Customer/end user
– Budget/cost/schedule

My advice to you is the following: Awareness of potentially influencing factors is what really makes the difference between effective and defective Risk Management. The more accurate you can predict, the better prepared you will be to manage sticky situations. Having said that, there will still be times where no matter how much experience or knowledge you bring to the table, your project will still go astray (the so called out of rule events). We cannot control everything, nor are we expected to.

This brings me to another point. It is very important to set expectations, not only regarding the processes to be followed, but most importantly, about roles and responsibilities: i.e. what can be expected from yourself as a PM and from each of your stakeholders. This is what I have learned through direct exposure to failure:

General facts about the role of the PM:

1. Generally speaking, a PM is not Superman. I am sure every one of us would love to be like him or like Wonder Woman, but let’s face it: We are only human. As such, no matter how good we are at what we do, we can still fail to achieve our goals as there are always events beyond our control. When I make this point to my management or to the client’s management, I clarify that I am not trying to make up an excuse for future failures, but I am just trying to remind them that even with careful planning, something might not turn out as it was anticipated. What is important is to keep a proactive attitude by collaboratively trying to find a solution or alternative without pointing fingers or placing blame.

2. Projects are not owned by the PM. The PM is a resource crucial for the facilitation of the effort involved. It is critical that the Project Sponsor (own management and client management) understands that it is he or she who has the responsibility of removing roadblocks, because he or she is ultimately accountable to the business. As project managers, we are not supposed to be accountable for decisions we cannot influence.

Facts about roles in risk management:

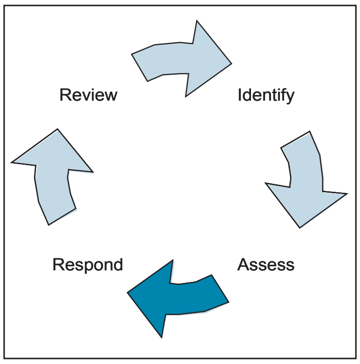
1. Effective risk management involves all stakeholders. Specifically, the project team and the customer play crucial roles in the process, as they are ideally involved in the identification, analysis, response, and communication of risks throughout the project life cycle

2. The PM is accountable for ensuring that risk management occurs in every project phase and at key trigger events such as the initial estimation, a significant change request, or project reestimation.

3. The project manager determines the frequency of reevaluating project risks based on the length and/or rate of change to the project.

Risk process

I will not linger too long on describing the risk process in detail, as there are valid and comprehensive models available on the market as part of Project Management Methodologies. [See **Appendix 1** for a list of most common methodologies]. What I would like to discuss is the importance of roles and dynamics of executing the process. I have worked with very complex processes, only to realize that a complex risk process does not necessarily help to control the process itself. Nowadays, I like to keep it simple, almost stripped to the core. The benefits to my projects are tangible: It is easy to explain to stakeholders therefore I get a straightforward buy in; it is easy to stick to, and therefore extremely flexible for adjustments when needed.



These are the four basic steps at the core of any risk process model:
1. identify
2. assess
3. respond to and
4. review risks

In addition to these four steps, effective risk management demands the sustained communication of identified risks.
These steps are initiated at the start of the project life cycle, where typically the focus is on financial risks, and then continuously repeated throughout all phases of the project, with focus on risks to the project objectives. All risks are carried forward through all project phases to be dealt with until their resolution, or until they no longer pose a risk to the project.

Generally speaking, every project stakeholder is responsible for actively seeking to uncover previously unidentified risks at any time and in any form during the project life cycle. Additionally, everyone must contribute to the delivery of resolution strategies, i.e. the client must be given the opportunity to participate in the management of

those risks which they can control. Especially as they have a vested interest in minimizing, mitigating, or avoiding any potential negative impact on their project. Any conversation, formal or informal, bears the potential to identify risk, so listen for statements or phrases that could indicate a potential risk, for example expressions like:

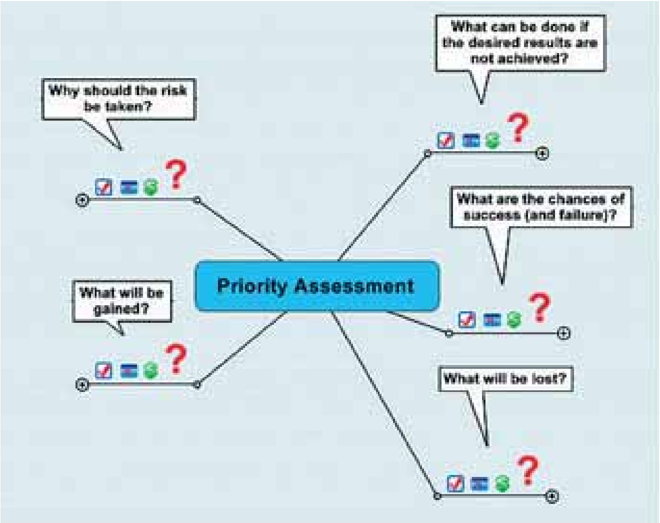
- "That's an issue."
- "I don't know."
- "We assume."
- "I'm not sure."
- "I think."
- "I have no idea."
- "We'll figure it out as we go along."

In order to identify the type of risk events, typically I use brainstorming techniques with the project team to come up with a confident list of risk events. We conduct several workshops, depending on the familiarity with project scope and use the above mentioned risk dimensions to group risks into categories.

Once risk is identified, it is important to determine whether it is within the control of the stakeholders. This analysis should include determining the probability of the risk event occurring and the potential impacts on objectives, in terms of consequences to schedule, budget, scope and resources of the project. The assessment of risk is based on the stakeholders' experience, judgment, and understanding of the project. The risk analysis should be supported by a suitable risk tool. [See **Appendix 2 and 3** for a list of common risk analysis methods and an example of a risk tool]

A word of warning: When it comes to choosing a tool, it is very easy to fall into the trap of buying or engineering the perfect tool with lots of complicated measures and automated features. Try not to spend too much effort trying to reach perfection. If risk is determined to be of medium impact, it does not matter if it is 6 percent or 19 percent, it is just medium. The scale may require fine tuning to fit the requirements of the customer and project environment as well as on the objectives being impacted. As a part of the tracking and monitoring activities of a project, the project team will frequently reassess the probability and consequences of the identified risks.

I often find that many colleagues tend to execute the first two steps (Identification and Assessment) and then stop there. By doing so, they do not actually manage risks; they keep a list, trying to react to events when they occur – a recipe for disaster!


Priority Assessment
Why should the risk be taken?
What will be gained?
What can be done if the desired results are not achieved?
What are the chances of success (and failure)?
What will be lost?

Responding to potential risks is key to effective risk management. Because it is impossible to manage all risks if they all occurred, it is necessary to prioritize. Realistically speaking, some risks are very unlikely to occur and others will have so little impact that your attention should be focused on those risks with higher impact on your project objectives. However, don't to forget to regularly review those 'lower' risks, as a low risk today can evolve to a high risk tomorrow. Keep an eye on the risk triggers as part of your risk process routine. Once the prioritization has been done, decide how to mitigate each risk.

Figure 1: "Communiction" by Isabelle Cardinal

Depending on the risk being addressed, there are several ways to approach mitigation plans.

The first approach is to look for ways to avoid the risk altogether by developing preventive steps. Related tasks are added to the project plan. If there is no way to eliminate the risk with reasonable time and budget constraints, look for ways on how to minimize the probability of occurrence or impact of the risk. Any step taken to minimize probability or consequence of a risk is also added to the project plan. At the very least, you might need to plan a parallel project to be kicked off in case the event occurs.

Revisit your risk mitigation plans frequently and make adjustments to the response plans. Your review activity should look at

- which risks were accepted and whether contingency plans are ready to be executed should the risk occur,
- which risks are being mitigated and their status,
- the potential impact of risks to the project constraints (scope, cost, schedule, resources),
- who is managing each risk.

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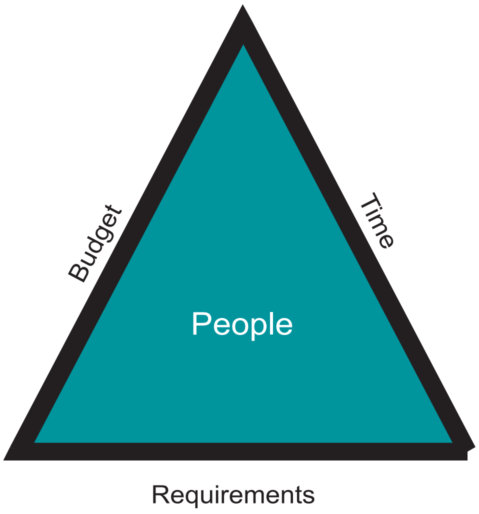
Dynamic approach

Each step of a chosen Risk Management process needs to be performed at all stages of the project life-cycle, but this is especially critical during project planning.

It is paramount to understand which one of the Triple Constraints is the most critical to the executive stakeholders. For example, some clients believe that a 20 percent impact to the budget is of greater consequence than a 20 percent impact to schedule or scope. This information is to be documented. It serves to establish how risk is communicated throughout the project life cycle in terms of what is most important to the customer, him being your most critical stakeholder.



For those of you who are new to the concept of Triple Constraints, here a quick explanation: A project can be thought of as a triangle whose sides (cost, schedule, and scope) determine the quality of the final deliverable. Additionally, resources are also affected by those constraints. Any change to one of the sides has a corresponding effect on one or both of the other sides. This is called the Triple Constraints.

During the presales phase, the risk process typically is used to support business processes to understand the business risks and their effect on the value of potential projects. If you are not directly involved in the presales stage of a project I suggest you strongly promote risk management among your sales team. Defining what may be a risk early in the sales cycle can be difficult, as project information is not complete or detailed enough. However, you should at least use historical data to identify potential risk factors and events.

During the planning stage, the emphasis of risk management is on the establishment of a suitable risk management process to be used throughout the execution of the project and training of the project team, including stakeholders, for a collaborative management of risk.

During project execution you should concentrate on controlling and tracking the mitigation plan against its performance and suitability.
During the closing phase, emphasis should be given to those risks events that could impact acceptance of deliverables and client satisfaction.

Conclusions

Risk Management is a multidimensional, dynamic process that affects all stakeholders and project resources. The biggest challenge in Risk Management is to educate the stakeholders about the nature of the risk process and its continuous application throughout the entire project. The second biggest challenge for a PM is to keep this process alive and on everyone's mind, executing it over and over again, with the same enthusiasm as for the first iteration.

Appendix 01

Methodology	Brief Description
PRINCE 2	Projects in Controlled Environments (PRINCE) is a generic, tailorable, simple to follow project management method. Released in 1996, is derived from the earlier PRINCE technique, which was initially developed in 1989 by the Central Computer and Telecommunications Agency (CCTA) as a UK Government standard for information technology (IT) project management; however, it is also regularly applied outside the IT industry. A PRINCE 2 project has the following characteristics: • A finite and defined life cycle • Defined and measurable business products • A corresponding set of activities to achieve the business products • A defined amount of resources • An organisation structure, with defined responsibilities, to manage the project PRINCE 2 does not cover all aspects of project management, such as leadership and people management skills, detailed coverage of project management tools and techniques.
Rational Unified **Process**	The **Rational Unified Process** (RUP) is an iterative software development process created by the Rational Software Corporation, now a division of IBM. RUP is now included in the IBM Rational Method Composer (RMC) product which allows customization of the process. The RUP is not a single concrete prescriptive process, but rather an adaptable process framework, intended to be tailored by the development organizations and software project teams that will select the elements of the process that are appropriate for their needs. RUP is based on a set of software development principles and best practices, for instance: • Develop software iteratively • Manage requirements • Use component based architecture • Visually model software • Verify software quality • Control changes to software
PMBoK Guide	**A Guide to the Project Management Body of Knowledge** (PMBoK® Guide) is a project management standard developed by the non profit Project Management Institute (PMI). The first PMBoK® Guide was published in 1987 as an attempt to document and standardize generally accepted project management information and practices. It provides a basic reference for anyone interested in project management together with a common lexicon and consistent structure. The PMBoK Guide is an internationally recognised standard (IEEE Std 1490–2003). It recognizes 5 basic process groups and 9 knowledge areas typical of almost all projects. The basic concepts are applicable to projects, programs and operations.

Table 1: Most used project management methodologies in the IT industry.

Appendix 02

As there are several types of risk analysis methods, the following list is intended to give only brief overview of the most widely known across industries and it is in no way exhaustive:

Risk Management Tool	Short Description	Type of analysis
Fault Tree Analysis (FTA)	FTA is a deductive analytical technique of reliability and safety analyses and generally is used for complex dynamic systems. It provides an objective basis for analysis and justification for changes and additions. It consists of a 'tree' like technique to show the cause-and-effect relationships between a single, undesired event (failure) and the various contributing causes. Typically the tree shows the logical branches from a single failure at the top of the tree to the root cause(s) at the bottom of the tree. Standard logic symbols connect the branches of the tree.	Deductive
Failure Mode And Effect Analysis (FMEA)	FMEA is an inductive engineering technique used at the component level to define, identify, and eliminate known and/or potential failures, problems, and errors from the system, design, process, and/or service before they reach the customer. It is based on early warning or preventative technique that is methodical. For each failure, an estimate is made of: • Effect on total system • Occurrence • Severity • Detection	Qualitative Bottoms-up
Probabilistic Risk Assessment (PRA)	It is an analysis of the probability (or frequency) of occurrence of a consequence of interest, and the magnitude of that consequence, including assessment and display of uncertainties. An engineering process, based on comprehensive systems analysis with analytical support, repeated periodically as the design matures and new data becomes available.	Quantitative

Table 2: Most common risk management approaches

Appendix 03

The following examples are simple interpretations of a quantitative risk analysis tool.

Table 3	represents a matrix containing measuring parameters that could be used to measure risk event against project objectives. These parameters are used to assess risk level ratings.
Table 4	contains a simple risk management spreadsheet to track and control risk events.

As a best practice, whenever possible I add extra contingency to my reestimated baseline based on the overall risk profile of the project.

Probability of occurrence	Impact on Project Objectives	Risk Level Rating	Contingency %
Very Likely/Certainty	Significant/Critical 30% – 50% more than baseline	High	50% to 90%
Unlikely/Likely	Marginal/ Significant 10% – 30% more than baseline	Medium	25% to 50%
Very Unlikely	Negligible/ Marginal < 10% More than baseline	Low	0% to 25%

Table 3: Example of risk analysis parameters

*Table 4: A simple risk management spreadsheet template can be downloaded from the **Chapter Publications** area at www.pmi-switzerland.ch.*

www.pmi-switzerland.ch

Claudia Casciaro, PMP, graduated from the Politecnico di Torino, Italy, in Aeronautical Engineering, and received her Ph.D. in Mechanical Engineering from the ETH Zurich. Afterwards, she worked for ALSTOM (Switzerland) in the Gas Turbine Business in applied research and as a project manager in development. Since October 2005, she has been the managing director of the Energy Science Center at the ETH Zurich. She is PMI member and Quality-Focus 6 Sigma Green Belt.

Domenico Bongini, Dr., Six Sigma Black Belt, ALSTOM (Switzerland)

The Application of Six Sigma Techniques to Boost the Initiation Phase of a Project

Abstract

The importance of stakeholder management for a project is well known. Effectiveness in stakeholder management is maximized when stakeholder analysis occurs upon Initiation Phase [PMI (2000)]. This paper shows how to use parts of the Six Sigma techniques for stakeholder analysis during the Initiation phase of a project. In fact, the Six Sigma techniques "Supplier, Input, Process, Output, Customer", "Voice of the Customer" and "Critical to Customer" are well structured for identifying, analyzing and evaluating stakeholders and theirs needs. In this paper, these techniques are briefly discussed, a possible modification to suit the needs of project management is proposed, and finally, an example how this has been applied for a project at ALSTOM (Switzerland) is described.

Keywords

Stakeholder, Six Sigma, Initiation

Introduction

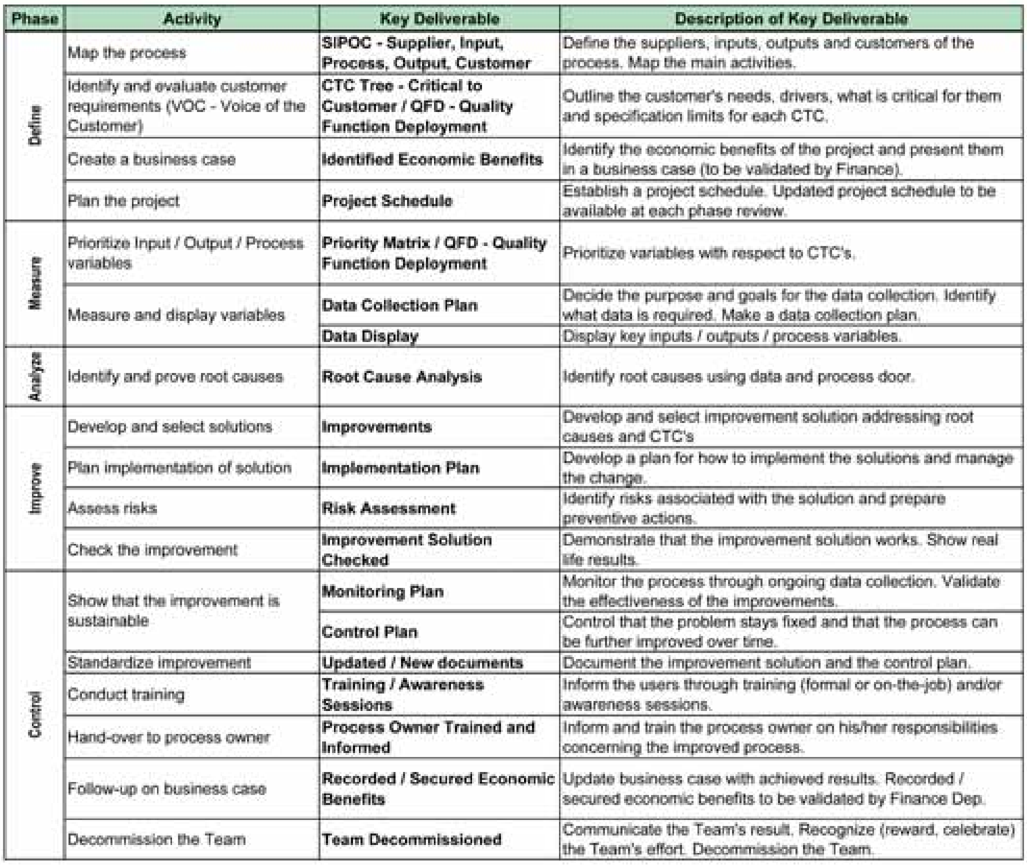
Generally, the project management community focus on Six Sigma has been either on the method itself or on the strategic values for the companies applying it (e.g. Anbari (2002) and Anbari (2003) PMI Knowledge and Wisdom Center – Six Sigma).

It is clear that the Six Sigma way to run a project is integral to Project Management standards and vice versa. Therefore, when a project manager works on a Six Sigma type of project, the project management standards will also need to be applied. At the same time, every project manager applies the Six Sigma Define, Measure, Analyze, Improve and Control phases at least unconsciously (PMI Knowledge and Wisdom Center – Six Sigma).

Parallels notwithstanding, Six Sigma projects differ from general projects because:

- They are limited in time (three to twelve months), whereas a general project timespan is defined at project start;
- Its techniques are known to few Green and Black Belts within an organization. A Black Belt supports the Green Belt with the data collection and analysis and with the use of tools. Whereas generally a larger number of project managers work within a matrix organization and are familiar with project management tools and techniques.
- A Green Belt candidate must close two projects prior to certification (ALSTOM (Switzerland) standards).

Yet, it could be worthwhile for more than just a few employees within a company to know the Six Sigma method, because it applies well-defined techniques which can be used independently from the process itself and because of its quality focus. Thus, as these techniques can be useful to project managers, we believe it is valuable to share and discuss some of them and consider their application within project management standards, especially with respect to stakeholder analysis. It is known from real project management experience, as



Phase	Activity	Key Deliverable	Description of Key Deliverable
Define	Map the process	**SIPOC - Supplier, Input, Process, Output, Customer**	Define the suppliers, inputs, outputs and customers of the process. Map the main activities.
	Identify and evaluate customer requirements (VOC - Voice of the Customer)	**CTC Tree - Critical to Customer / QFD - Quality Function Deployment**	Outline the customer's needs, drivers, what is critical for them and specification limits for each CTC.
	Create a business case	**Identified Economic Benefits**	Identify the economic benefits of the project and present them in a business case (to be validated by Finance).
	Plan the project	**Project Schedule**	Establish a project schedule. Updated project schedule to be available at each phase review.
Measure	Prioritize Input / Output / Process variables	**Priority Matrix / QFD - Quality Function Deployment**	Prioritize variables with respect to CTC's.
	Measure and display variables	**Data Collection Plan**	Decide the purpose and goals for the data collection. Identify what data is required. Make a data collection plan.
		Data Display	Display key inputs / outputs / process variables.
Analyze	Identify and prove root causes	**Root Cause Analysis**	Identify root causes using data and process door.
Improve	Develop and select solutions	**Improvements**	Develop and select improvement solution addressing root causes and CTC's
	Plan implementation of solution	**Implementation Plan**	Develop a plan for how to implement the solutions and manage the change.
	Assess risks	**Risk Assessment**	Identify risks associated with the solution and prepare preventive actions.
	Check the improvement	**Improvement Solution Checked**	Demonstrate that the improvement solution works. Show real life results.
Control	Show that the improvement is sustainable	**Monitoring Plan**	Monitor the process through ongoing data collection. Validate the effectiveness of the improvements.
		Control Plan	Control that the problem stays fixed and that the process can be further improved over time.
	Standardize improvement	**Updated / New documents**	Document the improvement solution and the control plan.
	Conduct training	**Training / Awareness Sessions**	Inform the users through training (formal or on-the-job) and/or awareness sessions.
	Hand-over to process owner	**Process Owner Trained and Informed**	Inform and train the process owner on his/her responsibilities concerning the improved process.
	Follow-up on business case	**Recorded / Secured Economic Benefits**	Update business case with achieved results. Recorded / secured economic benefits to be validated by Finance Dep.
	Decommission the Team	**Team Decommissioned**	Communicate the Team's result. Recognize (reward, celebrate) the Team's effort. Decommission the Team.

Table 1: Phases and key deliverables of the Six Sigma method. ALSTOM (Switzerland) standards.

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[1] This article has been originally written when Dr. Casciaro was working as a development project manager at ALSTOM (Switzerland).

well as numerous papers, that stakeholder analysis is very important, because stakeholders' mismanagement can jeopardize a project. As we know, the stakeholder ability to influence the final characteristics of the project's product and the final costs is highest at the start of the project and gets progressively lower as the project progresses [PMI (2000)]. Therefore, it is important to understand and document stakeholders' needs early in the project, during the Initiation Phase [PMI (2000)]. Several contributions state the importance of communication with stakeholders. Communication is a two-ways street where both parties are interested in clarifying their standpoints. In project management, it is the role of the project manager to proactively identify the stakeholders' needs and expectations, as well as to communicate strategy, goals and performance to them.

We cite hereafter some papers which seem relevant to the discussion, without the aim of presenting a complete literature research.
Hartman and Ashrafi (2002) show that stakeholders' management is critical to success of IT projects. They, as well as Christenson and Walker (2003), discuss the importance of a well communicated project vision to project success. The latter ones identify four core characteristics of the project vision: "it must be understood", "it must be motivational", "it must be credible" and finally "it must be demanding and challenging". Especially the fact that the vision has to be communicated in such a way that it convinces stakeholders and it is credible to them, i.e. it is aligned to their needs, means that the project leaders need a clear view on real stakeholder culture and values. In particular the subjective stakeholders' feeling about risk could be decisive. This is shown by Piney (2003), who discusses how to apply the utility theory to risk management.

Well structured balanced scorecards have been often proposed to serve the scope of communication to and alignment with the stakeholders, e.g. Stewart (2001), and Norrie and Walker (2003).
Notwithstanding the uncontested importance of stakeholders' management, fewer contributions actually approach the theme of identification. One of these is Mead (2001), who suggests the use of Social Network Analysis (SNA). SNA is a way to measure communication effectiveness and Mead suggests using it to identify project stakeholders and visualize project communication to stakeholders.

Six Sigma techniques

Six Sigma is a method used to analyze processes and to improve their quality. The name of the method sets at the same time the target: To reach a yield of 99.9997% or 3.4 defects per million opportunities, also showing how data driven this method is.
The Six Sigma method is divided into five phases: Define, Measure, Analyze, Improve and Control. Although it is not the purpose of this paper to discuss the whole method, the main steps for each phase and the key deliverables are shown in Table 1. The method is shown here as it is applied at ALSTOM (Switzerland), a company that has used Six Sigma as standard improvement method since 2002. A general description of the Six Sigma method can be found on widely available literature, e.g. Pande et al. (2000).

One of the Six Sigma key characteristic is the customer focus, where "customer" is "the person, group or process that receives the output", as stated in Pande et al. (2000). The basis of customers' management is set at the beginning with the key deliverables of the Define Phase (Table 1):

1. **The SIPOC: Supplier, Input, Process, Output, Customer Analysis,** where a high level picture of the process is created; the scope of the SIPOC is to create a clear picture of the process that the involved parties are living. It is important to stay simple, focusing on core inputs and outputs, and represent the "high level" project configuration (see Pande et al. (2000) pages 172-173).

2. **The CTC: Critical to Customer,** where customers' needs and expectations are mapped and transformed into measurable quantities. It is relevant for the requirements to be as specific as possible, where the required target performance of the product is specified as well as acceptable deviations. These are called "specification limits".

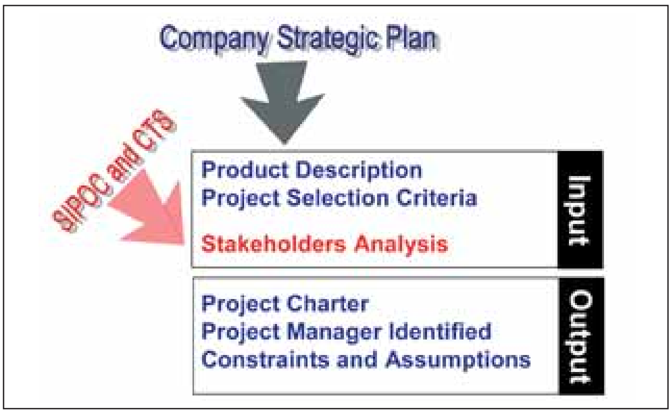


Figure 1: Actual initiation phase used for the project.

These two steps serve the scope of creating an explicit definition of the customers' requirements as means to their satisfaction. They are generally coupled to tools from the change management theory in order to understand the influence of the various stakeholders and the type of support or resistance to be expected.

The initiation phase and stakeholder analysis

For a project, the stakeholders are not only the customers, but, as from PMI (2000), all *"Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or project completion. They may also exert influence over the project and its results".*
From definition, the stakeholders represent a more extended community than the suppliers and customers. In fact, besides the active involvement of individuals and organizations, the project manager needs also to consider an immaterial and/ or indirect type of involvement.
Thus we need first to modify the Six Sigma techniques to allow for a broader roles' definition. The CTC shall be called CTS (Critical to Stakeholder) and a modification of the Initiation Phase, as described in PMI (2000), as shown in Figure 1 is suggested.
How to apply SIPOC and CTS is described hereafter, followed by a practical example.

Use of SIPOC and CTS for project managers

Project management focus must be all on stakeholders. This means that the SIPOC needs to be extended beyond its material, high level description in order to include any kind of involvement of material as well as immaterial type, with:

- A primary contribution in terms of creation, direct use of final project product, direct consequences by the final project products.

- A secondary contribution in terms of creation of subparts critical to the project, indirect consequences as results of project execution.

It is important not to neglect, in name of simplicity, any secondary or side product which might exert a negative or unexpected influence on the final product.

The use of the extended SIPOC allows the project manager:

- A complete identification of steps where all the stakeholders are involved.

- A clear representation of stakeholders' explicit needs, because of their clear link to inputs/outputs and/or project steps.

Once the stakeholders have been mapped, the Six Sigma method suggests transforming their matters at stake into measurable quantities. In order to do this, two tools can be used: the VOC (Voice of the Customer) and CTC (Critical to Customer), which we will rename

VOS (Voice of the Stakeholder) and CTS (Critical to Stakeholder). Experts should also be involved in the VOS, as a form of supplying expert judgment.

The VOS can be collected with a variety of tools – typically tailored questionnaires and interviews. It is important to define the questions as specific as possible in order to identify measurable quantities. Interviews can be used to investigate expectations (non-explicit needs). The evaluation of the questionnaires and interviews allows both the baseline to be measured, if needed, and the collection of the issues which are most important to the stakeholders: **the Critical to Stakeholder**. It is also useful to identify these critical, yet measurable, issues because this facilitates the definition of project scorecards.

A practical example of application

An example of the application of this type of analysis is shown hereafter taken from a project, run at ALSTOM Power Turbo-Systems by the authors. The project described is the development of a database used to track hardware modifications and their costs. The description has been kept superficial for simplicity reasons and also for not disclosing proprietary information. Furthermore the whole stakeholders' analysis has been simplified for discussion reasons. The high level and simplified version of the SIPOC is shown in Figure 2.

Easily identified from the Suppliers and Customers columns are the four main stakeholders: the engineers involved in design; the experts; the people from logistics and the development project managers.
Before approaching them to define their critical issues, an involvement analysis was performed, as shown in Table 2:

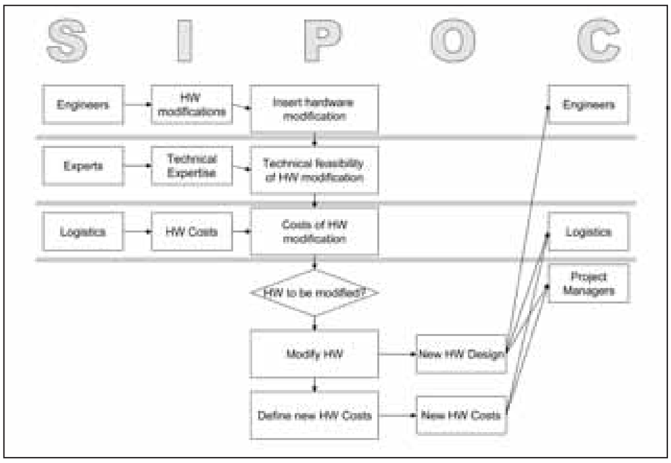
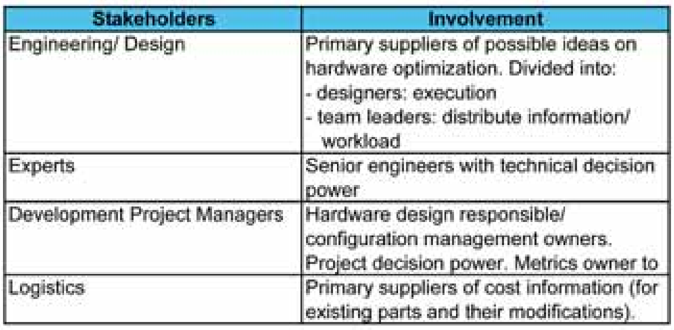


Figure 2: SIPOC analysis of the actual process applied to modify hardware

Once the stakeholders are known, a first round of interviews/ tailored questions can be prepared. We agree with the statement of Mead (2001) that this method, as any other based on interviews and questionnaire, can be quite time consuming. Yet, we believe this time is better invested in the initial phase of a project that in rework activities later. The time invested can be limited through an appropriate stakeholder classification and an appropriate choice of questions.

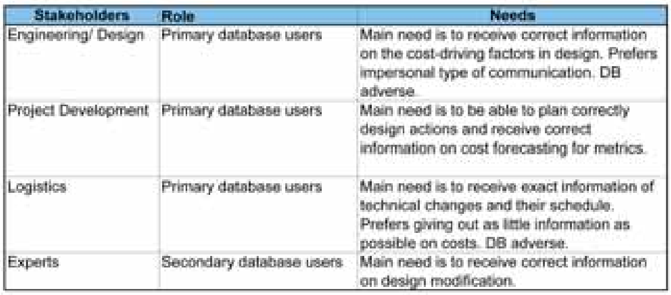
As already mentioned, care has to be taken to obtain measurable quantities, which means that the VOS probably needs a couple of iterations, with a first informal one suggested, before requesting a statement of written requirements. For example, after the first round, the stakeholder analysis can be extended as in Table 3:

From this first analysis, it can be seen that the users are both suppliers to and customers of the database. The stakeholder community is extended to Expert and Senior Management.
Once the needs are known, the specification limits can be expressed in a measurable manner. In a second round of questions, these values can be defined.



Stakeholders	Involvement
Engineering/ Design	Primary suppliers of possible ideas on hardware optimization. Divided into: - designers: execution - team leaders: distribute information/ workload
Experts	Senior engineers with technical decision power
Development Project Managers	Hardware design responsible/ configuration management owners. Project decision power. Metrics owner to
Logistics	Primary suppliers of cost information (for existing parts and their modifications).

Table 2: Stakeholders analysis



Stakeholders	Role	Needs
Engineering/ Design	Primary database users	Main need is to receive correct information on the cost-driving factors in design. Prefers impersonal type of communication. DB adverse.
Project Development	Primary database users	Main need is to be able to plan correctly design actions and receive correct information on cost forecasting for metrics.
Logistics	Primary database users	Main need is to receive exact information of technical changes and their schedule. Prefers giving out as little information as possible on costs. DB adverse.
Experts	Secondary database users	Main need is to receive correct information on design modification.

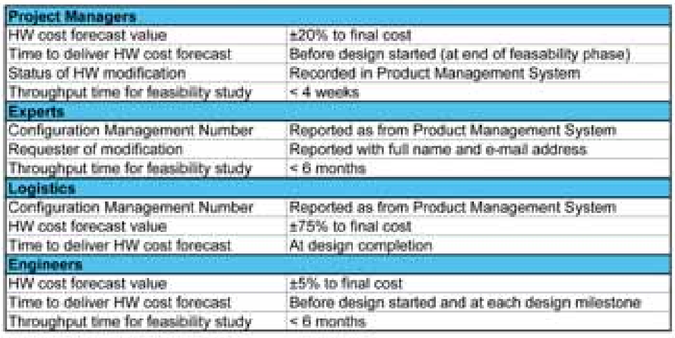
Table 3: Stakeholders analysis (2)

Statements like the following ones are poorly written and not specific: "The experts wish that the *hardware modification is well described* (not measurable), in order to be able *to provide a fast* (not measurable) answer about the technical feasibility to both design and project manager". The questionnaire should be structure such to provide measurable values:

- Hardware modification is well described – what are the terms of a "good description"? E.g. configuration management number of part written, hand-drawn modification attached, tolerances mentioned and so on;

- To provide a fast answer – which waiting is acceptable and what happens by a delay? E.g. technical feasibility should be evaluated within two weeks from application. If delayed, project manager and engineer need to be notified and so on.

The final CTS requirements also show quite clearly any conflicts of interests which will need to be worked out through skillful negotiations. Based on this investigation, the following CTS is derived (Table 4):



Project Managers	
HW cost forecast value	±20% to final cost
Time to deliver HW cost forecast	Before design started (at end of feasability phase)
Status of HW modification	Recorded in Product Management System
Throughput time for feasibility study	< 4 weeks
Experts	
Configuration Management Number	Reported as from Product Management System
Requester of modification	Reported with full name and e-mail address
Throughput time for feasibility study	< 6 months
Logistics	
Configuration Management Number	Reported as from Product Management System
HW cost forecast value	±75% to final cost
Time to deliver HW cost forecast	At design completion
Engineers	
HW cost forecast value	±5% to final cost
Time to deliver HW cost forecast	Before design started and at each design milestone
Throughput time for feasibility study	< 6 months

Table 4: Critical to stakeholder (HW = Hardware)

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The stakeholder analysis is finally completed with the power/ influence and the type of resistance, taken from change management theory, as summarized in Table 5.

Conclusions

The stakeholder analysis used in the Six Sigma method has been described and modified to suit the needs of project managers. Its application allows stakeholders' expectations to be documented and agreed upon in a measurable manner during the project initiation. Conflicting interests can be clearly identified prior to definition of the Work Breakdown Structure, resulting in reduced rework during the successive project phases.

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Stakeholder	Impact of Chance	Perceived Attitude to Chance	Level of Influence	Anticipated Issue	Participation Strategy		
					Pre-Development	During Development	After Development
Engineers/ Designers	Traceable impact of HW modifications. Primary users	Negative	Low	Will not use the unless requested from higher management	Opinion collected during VOS – needs integrated	Testing of tool by selected designers during development	Coach and facilitate use during roll-out
Head of Engineering	Traceable impact of HW modifications.	Neutral	High	Has own vision – not shared by own staff	Opinion collected during VOS – needs intergrated – aprover of tool specifications	Extended presentation before release	Coach and facilitate use in own organization during roll-out
Development Projekt Managers	Improved capability of cost forecasting. Primary responsible and users	Positive	High	Will have to push use with own staff	Opinion collected during VOS – needs interated	Information on main phases	Coach and facilitate use during roll-out
Experts	Traceable evaluation of HW modification. Secondary users	Neutral	Low	New toll might be perceived as administrative burden	Opinion collected during VOS – needs integrated	Information on main phases	Coach and facilitate use during roll-out
Logistics	Improved transparency on hardware modification. Primary users	Neutral	High	Will not use the tool unless requested from higher management	Opinion collected during VOS – needs integrated	full involvement during development	Coach and facilitate use during roll-out
Head of Logistics	Traceable impact of HW modifications. Not a user	Negative	High	Has own vision – not shared by own staff	Opinion collected during VOS – needs integrated – approver of tool specifications	Extended presentation before release	Coach and facilitate use in own organization during roll-out

Table 5: Stakeholder analysis final summary

Yannick Jolliet (PMP) is working in the Center of Excellence of Japan Tobacco International (JTI), as Knowledge Management & eBusiness IS/IT Director. Previously, he setup and lead the Strategic Governance & Program Management Office (PMO) for JTI. He has a solid experience of managing large scale Projects/Programs, but also of managing Project Portfolios to ensure strategic alignment. Yannick also set up and lead three Internet start-ups, and a networking club («Geneva Lake Executive»).
Yannick is very active in the Project Management field as a member of professional associations (PMI, SMP, SMaP) and co-founder of the «Swiss PMI Quality SIG», but also as a public speaker, a professional trainer and a researcher (currently pursuing a PhD).
His academicals background includes a certification at the EPFL in Lausanne, a Master in Economics & Business Administration (HEC-Lausanne), as well as multiple management trainings in business schools such as INSEAD, IMD, Cranfield School of Management.

Des difficultés à gérer la connaissance à l'échelle d'une multinationale. Leçons apprises d'un projet global de «Knowledge Management»

Résumé:

L'étude du cas «ECM – Enterprise Content Management» chez «Global Company» (*), montre que derrière les modèles et cadres conceptuels du «Knowledge Management» se trouve la complexe réalité de projets concrets.

Ce programme global est un cas intéressant de projet de gestion de la connaissance, dans la mesure où il est stratégique, de grande envergure et radical. En soulignant en particulier les écueils rencontrés et les erreurs commises, nous dégageons ici quelques éléments clefs de meilleures pratiques dans le cadre de tels projets, et ce pour les différentes dimensions du projet: humaine et organisationnelle, structuration de l'information, aspects techniques.

Les résultats obtenus et les leçons tirées nous forcent à rester humbles et à réaliser que ces types de projets sont éminemment difficiles, car ils bouleversent en profondeur et simultanément beaucoup de dimensions fondamentales de l'entreprise.

Abstract:

The analysis of the «ECM – Enterprise Content Management» case at «Global Company» (*) shows that behind the conceptual Knowledge Management frameworks resides the complex reality of real projects.

This global program is an interesting case of a knowledge management project, as it is strategic, of a large magnitude and radical. By highlighting especially the errors and pitfalls, we identify here some key best practices for such projects, for different dimensions of the project: human and organizational, information organization, technical aspects.

The project results and the lessons learned force us to stay humble and to realize how much this type of project is difficult, in the sense they deeply impact most of the enterprise dimensions.

Mots clés

Gestion de projet, partage d'expérience, leçons apprises, gestion de l'information, gestion du savoir.

Keywords:

Project management, experience sharing, lessons learned, information management, knowledge management.

Introduction

Nous nous proposons dans cet article de partager un retour d'expérience structuré d'un projet global de gestion de la connaissance dans le cadre d'une société internationale. Nous soulignerons en particulier les écueils rencontrés et les erreurs commises, afin de dégager des éléments clefs de meilleures pratiques dans le cadre de tels projets.

Notre objectif est de montrer que derrière les modèles et cadres conceptuels du «Knowledge Management» se trouve la complexe réalité de projets concrets, et les véritable difficultés de la confrontation à la réalité opérationnelle. Or, si les échecs sont légions dans ce type de projet, rares sont les entreprises qui partagent de telles expériences.

Le programme «ECM – Enterprise Content Management» chez «Global Company» est un cas intéressant de projet de gestion de la connaissance, dans la mesure où il est:

- Stratégique: 4ème Programme majeur dans le cadre de la globalisation de la société
- De grande envergure: global à l'échelle du groupe, 8'000 «knowledge workers» impliqués, budget total d'environ USD 70 millions
- Radical et complexe: avec des objectifs ambitieux et un périmètre fonctionnel large
- Très actuel: projet planifié sur 3-4 ans, entre 2005 et 2008

De plus, il s'agit d'un projet éminemment transverse qui illustre bien d'une part les liens entre gestion de projet, gestion de l'information et optimisation des processus, et d'autre part les difficultés de «partager et réutiliser un même ensemble de connaissances dans des contextes d'information juste-à-temps et de formation» ([4] Wentland Forte M, 2006).

Conclusion

«La vie est difficile» … c'est ainsi que Scott Peck commence son fameux livre «Le chemin le moins fréquenté» [5] (Scott Peck, 1987). Nous conclurons quant à nous en affirmant que «les programmes de Knowledge Management sont difficiles, voire très difficiles». Et qu'il importe de mesurer toute la complexité de tels projets et d'intégrer leurs difficultés intrinsèques à l'approche mise en place.

En effet, rares sont les initiatives d'entreprise qui impactent aussi radicalement tant de dimensions simultanément: de la culture d'entreprise aux technologies complexes, en passant par le changement de l'organisation et le partage du savoir entre les départements. De ce cas concret, nous retirons quelques enseignements clefs relatifs à ce type de projets de gestion de la connaissance. En premier lieu l'approche adéquate: une stratégie globale mais une implémentation incrémentale et adaptive, accompagnée d'une gestion proactive du changement. En deuxième lieu les difficultés intrinsèques liées à la modélisation et structuration de l'information qui ne permettent que rarement d'atteindre un idéal académique, ou encore la technologie qui se révèle être un facteur plus important qu'il n'y parait de prime abord.

1. Contexte

1.1. S'accorder sur une définition du «Knowledge Management»

Ce partage d'expérience se positionne dans un contexte de gestion de la connaissance, et avant d'aller plus avant, il convient de clarifier ce que l'on entend par là. Les définitions du «Knowledge Management» sont nombreuses et diverses, tel que le souligne S. Gobat [1]: d'une approche de valorisation du capital immatériel de l'entreprise, à la vision systémique du savoir en tant qu'information dans un contexte spécifique, en passant par des angles plus techniques tels que des mises en place d'intranet ou d'outils collaboratifs.

Nous nous placerons ici dans une dimension plus opérationnelle, où la gestion des connaissances a pour objectif d'une part de maîtriser la mémoire de l'entreprise, et d'autre part «d'améliorer la performance de l'entreprise avec la finalité de lui procurer un avantage compétitif» ([2] Meingan D. 2002).

(*) Nom fictif pour conserver l'anonymat de cette société globale, opérant dans le domaine des «Fast Moving Consumer Goods» et réalisant un chiffre d'affaire de plusieurs milliards de dollars américains.

1.2. Les processus de gestion de connaissance

Au travers de l'étude de ce cas, nous couvrirons différents processus impliqués dans la gestion de connaissance. Pour reprendre le modèle du Professeur G. Probst [3] qui découpe ces processus en «building blocks» et souligne leur interdépendance, nous verrons que ce cas illustre en fait essentiellement les aspects «Identification», «Rétention» et «Utilisation» de la connaissance.

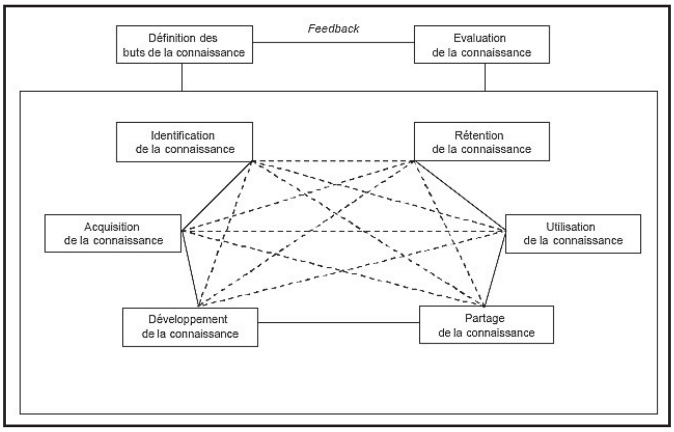
Feedback
Définition des buts de la connaissance
Evaluation de la connaissance
Identification de la connaissance
Rétention de la connaissance
Acquisition de la connaissance
Utilisation de la connaissance
Développement de la connaissance
Partage de la connaissance

Fig. n°1: Les processus de gestion des connaissances, source Probst et al, 2000 [3]

1.3. Information et formation

Enfin, si cet article met l'accent sur les dimensions de gestion de l'information et de préservation de la mémoire de l'entreprise, il nous semble important de souligner que la démarche de «Global Company» doit être prise dans une optique de gestion globale des connaissances et de la formation des employés.

Nous partageons en effet avec M. Wentland Forte [4] la vision que la formation et l'information «just-in-time» ne diffèrent que par leur contexte et leur temporalité, et qu'il existe un parallélisme à tous les niveaux entre ces deux processus.

Ainsi, l'approche de «Global Company» doit être comprise dans une vision holistique: une démarche à long terme vers une gestion intégrée de l'information et de la formation, dans le but de lui procurer un avantage compétitif.

2. L'entreprise, le programme, les projets

2.1. L'entreprise

«Global Company» est une multinationale de grande envergure dans le domaine des «Fast Moving Consumer Goods» (en 3ème position mondiale dans son secteur), réalisant un chiffre d'affaire de plusieurs milliards de dollars américains au travers d'une présence globale dans plus de 70 pays.

2.2. Le Programme ECM

«Global Company» a initié une stratégie de transformation radicale, dans le but de standardiser et de globaliser l'entreprise. Ainsi ont vu le jour une série de programmes globaux tels que des projets d'ERP, de CRM et d'outsourcing. Dans ce cadre, «Global Company» s'est embarqué dès 2005 dans un programme stratégique ambitieux avec l'initiative «ECM – Enterprise Content Management». Ce programme global vise à formaliser, modéliser et mieux gérer l'information au niveau du groupe (documents papiers et électroniques, archives, emails, contenu web, collaboration…).

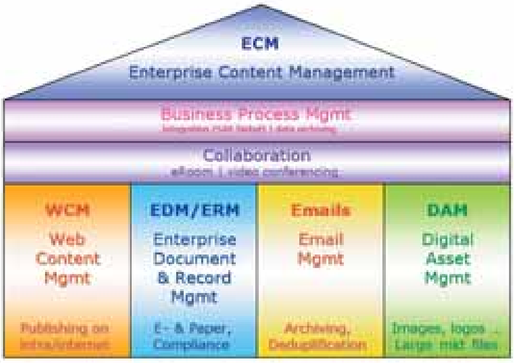
ECM
Enterprise Content Management
Business Process Mgmt
Collaboration
eRoom | video conferencing
WCM
Web Content Mgmt
Publishing on intra/internet
EDM/ERM
Enterprise Document & Record Mgmt
E- & Paper, Compliance
Emails
Email Mgmt
Archiving, Deduplification
DAM
Digital Asset Mgmt
Images, logos, Large mkt files

Fig. n°2: Le périmètre (scope) du projet ECM chez "Global Company", source Y. Jolliet, 2006

La finalité du Programme ECM est double:

- d'une part une standardisation et globalisation de la gestion de l'information pour assurer une plus grande efficience des «knowledge workers», et
- d'autre part – et surtout – de répondre aux pressions importantes en termes de «compliance & corporate governance», développant la capacité à auditer les documents / «records» tout au long de leur cycle de vie[1].

2.3. Les projets

Le périmètre du Programme ECM est extrêmement large et cherche à inclure la plupart des types d'information non-structurée de l'entreprise, et les processus qui servent à les gérer.

La figure 2 ci-dessus représente les divers composants couverts par le programme. Cette vision a servi à le découper en différents projets qui s'enchaînent au sein de plusieurs phases. La première étape, dont nous parlerons ici, vise à adresser les aspects suivants:

- Gestion des documents papiers et électroniques, et des archives de l'entreprise,
- Gestion des emails: archivage et déduplications, et
- Gestion du contenu de l'Internet et des nombreux sites Intranets

Les étapes suivantes intégreront la gestion des objets multimédias, les aspects avancés de collaboration et de communautés de pratiques et de réingénierie des processus métiers.

2.4. Les phases du projet

Enfin, le programme a été découpé en plusieurs phases afin de minimiser les risques et de maximiser les chances de succès:

- Première phase: «Proof of Concept» avec un nombre limité d'utilisateurs (100), couvrant 3 différents départements représentatifs des diverses complexités envisagées (répartition sur 2 sites physiques, scan de contrats papiers, contenu web).
- Deuxième phase: déploiement de la plateforme standard telle que définie lors de la première phase, pour tous les départements du siège (400 utilisateurs à Genève).
- Troisième phase: déploiement global du système à tous les «knowledge workers» du groupe, soit plus de 8'000 personnes.

Nous verrons plus loin dans les «enseignements retirés», (ch. 5) que cette vision globale, couplée à une approche incrémentale et bien découpée, est l'un des facteurs clefs de succès.

2.5. Les choix techniques et impacts du projet

Afin de réaliser la vision ECM, «Global Company» a choisi une suite de produits de gestion de contenu autour de la solution leader du marché. La solution intègre notamment la gestion des documents, des «records», des emails, du contenu Web, des fonctionnalités de scanning et de reconnaissance de caractères, de recherche avancée, de migration de l'existant, etc.

La solution finale implique un impact profond sur la façon dont les utilisateurs vont travailler avec leurs documents et emails. En effet, tous les référentiels et systèmes existants vont se retrouver remplacés par un système unique et central autour de la solution choisie. Les utilisateurs ne vont donc plus rechercher et sauver l'information au même endroit qu'auparavant, les documents seront entièrement réorganisés dans le nouveau référentiel, et enfin les autres applications liées à la gestion d'information devront également intégrer ce changement.

3. Les différentes dimensions du projet

Dans ce chapitre, nous soulignerons quelques points clefs du Programme ECM chez «Global Company», en les regroupant selon les dimensions suivantes: les aspects humains et organisationnels, la structuration de l'information, les aspects techniques, la gestion du changement.

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[1] L'industrie de «Global Company» est parfois sujette à controverse et particulièrement exposée à des procès. Il est donc crucial pour «Global Company» de maîtriser l'ensemble du cycle de vie des documents et «records», afin de mitiger les coûts de recherche et production d'information en cas de procès, mais aussi pour pouvoir prouver une position ou une décision.

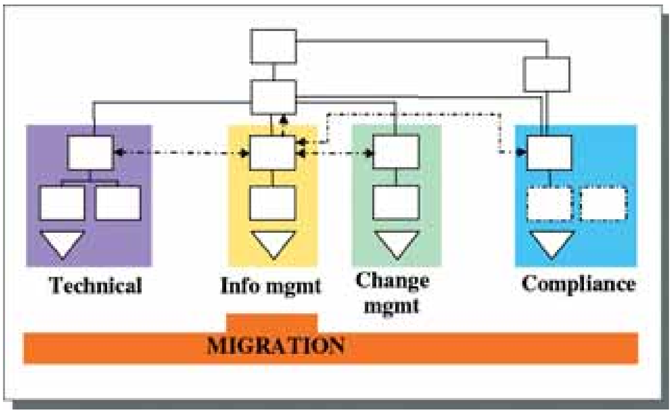

Fig. n°3: Organisation schématique de l'équipe projet, source Y. Jolliet, 2006

3.1. Les aspects humains et organisationnels

3.1.1. L'équipe projet

L'organisation du cœur de l'équipe projet s'est révélée efficace, structurant les expertises en piliers tels que la technologie, la gestion de l'information et des processus métier, ou encore la gestion du changement et la formation. Un groupe transverse, piloté par le groupe «Information Management» s'est occupé de mener à bien les étapes de la migration des informations depuis les systèmes existants vers la nouvelle solution (voir aussi ch. 3.2).

La grande difficulté a résidé dans la coordination de ces différents piliers, rôle qui incombe au gestionnaire de projet, en l'occurrence une personne provenant de l'audit financier n'ayant aucune expérience ni de la gestion de projet en général, ni du domaine de la gestion de l'information en particulier. S'il est typiquement souhaitable que les projets soient menés par les unités fonctionnelles et non pas par l'IT, il s'est rapidement avéré que ces lacunes impactaient sérieusement le projet, nécessitant un sérieux investissement de chacun pour co-gérer l'initiative et palier à ces faiblesses.

Enfin, côté utilisateur, nous avons définis des «super utilisateurs» pour chaque département impacté par le projet. Leurs rôles d'ambassadeurs, de points uniques de contact et de testeurs/validateurs ont été une clef de la réussite du projet. Toutefois, une erreur fut de ne pas avoir assez insisté pour leur donner plus de pouvoir dans ce rôle et de reconnaissance (par exemple en liant leur contribution à leurs objectifs annuels), ce qui nous a conduits à des problématiques de motivation et de disponibilités.

3.1.2. Les consultants

Nous avons choisi de sous-traiter la réalisation du projet à des consultants externes. Par manque d'expérience dans ce type d'initiative, «Global Company» n'a pas fait les bons choix en termes de partenaires, et s'est entièrement remis aux consultants qui étaient sensés apporter à la fois leur expertise et leur expérience pour co-définir comment gérer le projet.

Ce positionnement s'est révélé catastrophique, et nous avons tôt fait de réaliser que leurs compétences se bornaient à l'aspect technique du projet, sans prendre en compte les dimensions organisationnelles ou liées au changement. Ainsi, nous avons été obligés de changer au complet l'équipe de consultants, de réorganiser et re-planifier entièrement le projet, avec évidemment un impact désastreux en terme de coût et de délais, mais également une perte de crédibilité et de leadership de l'équipe projet.

3.2. Structuration et organisation de l'information

3.2.1. Les méta données, et organisation de l'information

Une des grandes difficultés du projet s'est trouvé être la réorganisation de l'information. En effet, si les documents existaient dans des référentiels séparés, accessibles par des technologies différentes, le fait de passer à un vivier unique de connaissance nous a forcés à entièrement repenser la façon dont cette information était accessible et gérée.

Il s'est rapidement révélé utopique de chercher à standardiser une taxonomie globale au niveau de l'entreprise, par contre nous sommes parvenus à une refonte complète et une classification unique de l'information pour chacun des départements, tout en tenant compte des contraintes de sécurité et de partage d'information entre équipes.

Une bonne pratique – et une des leçons du projet – furent de lier la définition de cette structure aux rôles et aux activités/processus, et non pas aux personnes ou à l'organisation, par trop changeantes.

Côté méta données, nous avons bien sûr définit divers profiles de documents pour chaque départements, permettant de caractériser l'information pour mieux la classifier, la rechercher ou même de l'intégrer dans des processus métiers («workflows» automatiques, intégration avec d'autres systèmes). Mais une réussite fut de pouvoir également définir des méta données communes au niveau de l'entreprise, base d'un futur système intégré.

Une leçon à ce sujet: la source de ces méta données et leur gestion est beaucoup plus complexe qu'il n'y parait. Par exemple, plusieurs listes de pays, dans divers systèmes et selon divers standards (ISO, IPO, etc.), se disputent la position de «source véridique et unique». Que dire alors de la maintenance de ces listes? Identifier les propriétaires et définir des processus de mise à jour en cascade s'est révélé un véritable casse-tête!

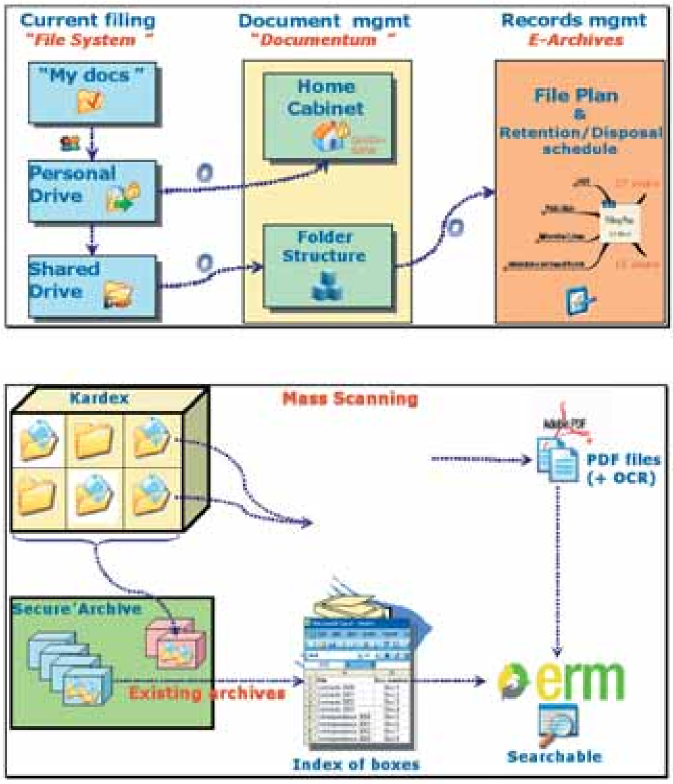

Fig. n°4: Méthodologie de migration des documents, source Y. Jolliet, 2006

3.2.2. La migration de l'existant

De multiples sources d'information ont dû se retrouver réunies dans un seul référentiel commun, soulevant de difficiles questions quant à l'approche de leur migration. Une stratégie de migration, suivie d'une méthodologie détaillée, s'est avérée rapidement nécessaire. De même, il fut vite entendu qu'il ne serait pas possible de complètement automatiser ce processus, l'information devant être réorganisé manuellement au sein de divers dossiers avec chacun une sécurité propre. De même, il s'agissait de définir quelles méta données associer à chacun des documents, et ce dans le cas de documents électroniques, d'emails ou de documents papiers à scanner.

La figure 4 ci-dessus illustre certaines étapes clefs de ce processus de migration, tant pour les documents électroniques (à gauche) que pour les documents papiers qui furent scannés puis archivés (à droite).

Une leçon chèrement apprise fut d'avoir sous-estimé cette étape de migration: elle doit absolument être traitée comme un sous-projet à part entière, car elle impacte non seulement les dimensions techniques, mais aussi – et surtout – les dimensions organisationnelles et la façon dont les «knowledge workers» travailleront à l'avenir.

Enfin, certaines difficultés spécifiques méritent d'être soulevées ici, car malgré tous nos efforts, il reste beaucoup d'exceptions et de difficultés: documents avec le même nom, documents orphelins (sans propriétaire) dont personnes ne sait que faire, grand nombre de duplicata difficile à gérer (lequel garder? dans quel contexte?), partage des documents tout en préservant une sécurité adéquate, travail en mode hybride (certains utilisateurs utilisent le nouveau système, d'autre pas encore), etc.

3.3. Aspects techniques

Sans vouloir nous étendre sur les problématiques techniques des systèmes, nous souhaitons brièvement souligner ici quelques difficultés rencontrées à deux niveaux.

3.3.1. Maturité des technologies

Malgré le fait d'avoir choisi une solution technologique leaders du marché, nous avons été confrontés à de nombreuses limitations et un manque de maturité des produits.

Notamment, l'impossibilité de travailler «offline»: une contrainte difficilement acceptable par les utilisateurs; mais également le fait qu'aucun outil ne nous facilite la phase de migration, ou encore le fait que l'utilisateur perde un grand nombre de fonctionnalités standards de sa suite bureautique («drag & drop», intégration des programmes, tableaux de calculs liés entre fichiers, etc.)

Si au moment de l'achat de la solution tout semblait possible, cela s'est rapidement révélé ne pas être véritablement le cas, et beaucoup d'efforts de développement ont été nécessaires pour offrir des fonctionnalités et un niveau de confort acceptable par les utilisateurs.

3.3.2. Compétences techniques

Nous avons également été négativement surpris par le manque de compétence des utilisateurs, tant au niveau gestion de l'information qu'au plan technique. La grande majorité d'entre eux n'ont en effet jamais eu l'expérience de définir des méta données ou de gérer des versions de documents, ce qui a rendu beaucoup plus difficiles la définition des besoins, la réorganisation de l'information et la formation.

De même, le manque de compréhension des implications et limitations techniques par le sponsor et par le gestionnaire du projet, a souvent rendu les discussions plus difficiles et les prises de décisions plus fastidieuses et souvent aléatoires.

3.4. Gestion du changement et des aspects culturels

Sans rentrer dans les détails, on soulignera ici quelques leçons intéressantes liées à la culture et à la gestion du changement:

- Nous avons été surpris par la diversité des pratiques entre les différents départements impliqués: il semble que chacun gère l'information d'une façon différente. Si certains organisent strictement leur information (par exemple pour la gestion des contrats), d'autres stockent leurs documents en vrac sur un espace non partagé. Certains copient systématiquement tous leurs emails sur un disque partagé, d'autres les impriment et les classent dans des classeurs physiques par exemple.
- L'information ne traverse que rarement les parois étanches du département: les «knowledge workers» travaillent souvent en silo, et réinventent régulièrement la roue. Le degré de collaboration effectif s'est révélé assez bas dans notre cas.
- Il s'est très tôt révélé essentiel d'exposer les utilisateurs au système, puis de les former pour les préparer au changement. Cela n'a pas été facile car le système était en développement et mutation constants, mais ce fût finalement un facteur clef de succès.
- Enfin, malgré le fait d'avoir une équipe dédiée à la communication, il s'est avéré que nous ne communiquions jamais assez au goût des utilisateurs.

4. Les résultats de la phase 1 «Proof of Concept»

4.1. Gestion du projet: indicateurs négatifs

A l'issue de la première phase, les indicateurs clefs de la gestion du projet ne sont pas au beau fixe. La figure n°5 ci-dessous illustre pour chacune de ces mesures les objectifs fixés (en vert) et les résultats obtenus (en rouge), la zone hachurée représentant donc l'écart entre les attentes et ce qui a été réalisé.

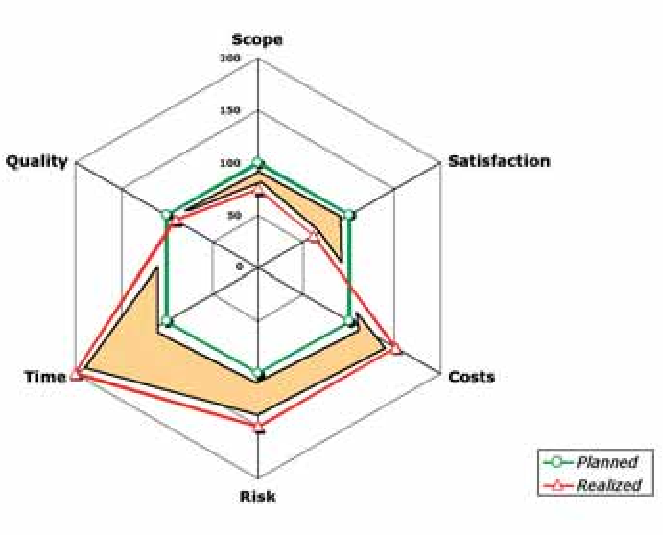

Fig. n°5: «ECM Program Dashboard» à la fin de la phase 1, source Y. Jolliet, 2006

Ainsi, on observe dans la partie haute du graphique qu'aucun des indicateurs n'a atteint les objectifs: le périmètre fonctionnel (Scope) n'a été satisfait qu'à 80% car plusieurs fonctionnalités ainsi qu'un des sous départements d'utilisateurs ont du être supprimés du projet. De même, le niveau de satisfaction n'a atteint que 60% car les attentes en termes de «Business Process Reengineering» et automatisations étaient très grandes.

De plus, les 3 indicateurs de la partie basse ont tous été largement dépassés, impactant négativement le projet: cette première phase aura coûté 50% de plus que prévu et duré 14 mois au lieu de 7 (impliquant au passage le retard d'autres projets connexes). Enfin, les risques liés au projet sont supérieur au plan: en effet il n'est pas encore garanti que la phase suivante puisse démarrer, une justification de ces écarts et une approbation formelle étant de rigueur avant de procéder.

4.2. De bons résultats malgré tout

Au delà de ces écarts entre le résultat et les attentes, il faut souligner que cette première phase était principalement destinée à prouver la faisabilité d'un tel projet pour «Global Company», et à définir comment aborder une telle problématique.

De ce point de vue, le «Proof of Concept» est un succès à plus d'un titre:

- Il a permis à l'organisation d'apprendre énormément, au sein d'un périmètre contrôlé et restreint qui limitait les risques. Ainsi l'équipe projet a pu mieux cerner les erreurs à ne plus commettre et identifier certains facteurs clefs de succès, tant du point de vue organisationnel que technique.
- Un des objectifs de cette phase était de définir une méthodologie pour approcher la suite du projet ECM et le déploiement global. C'est sans doute un des livrables clefs que le projet à produit avec succès.
- Fort de cette expérience, l'organisation est maintenant beaucoup plus à même de planifier de façon réaliste les phases globales suivantes (en terme de temps, de coût, de ressources, etc.).

  De plus, il nous faut également souligner que les résultats obtenus, même si ce fut à grand prix, sont d'une grande importance pour «Global Company» et des pas significatifs sur le chemin ECM:
- Plus d'une centaine d'utilisateurs sont maintenant «live» avec succès sur la nouvelle plateforme, et n'utilisent plus du tout leur

ancien système. Ils sont autonomes comme en témoigne le faible nombre d'appel au «Helpdesk»
- La plateforme technologique est stable et performante: elle est déjà dimensionnée pour supporter plus de 500 utilisateurs à Genève. De plus, elle constitue une base technologique fondamentale qui pourra être capitalisée avec de nombreux projets qui se grefferont sur elle («workflows», etc.)
- Tous les documents électroniques, les emails, et certains documents papiers clefs scannés sont maintenant gérés de façon systématique, de bout en bout de leur cycle de vie (depuis leur création jusqu'à la destruction éventuelle des archives après leur durée de rétention légale). La dimension «Compliance» se retrouve ainsi renforcée.
- Les multiples entrepôts de documents (papiers et électroniques) ont maintenant été fusionnés en un seul vivier, et selon une structure qui autorise une recherche puissante et simplifiée. L'information a ainsi été complètement réorganisée, et restructurée (méta données, système de classification), gagnant en accessibilité.
- Enfin, les utilisateurs ont maintenant accès à de nouvelles possibilités leur permettant de mieux gérer et partager l'information: moteur de recherche unique et performant (même sur les documents papiers scannés), gestion des versions des documents, gestion granulaire de la sécurité, moteur de «workflow», notifications automatiques.

5. Les enseignements retirés

Au travers du bref aperçu de ce projet, nous espérons avoir mis en valeur quelques points:

5.1. Une stratégie globale… mais une approche incrémentale et adaptative avec des retours d'expérience permanents…

La façon d'approcher de tels projets est absolument fondamentale. Une vision stratégique claire est évidemment requise, car les changements imposés seront souvent profonds et ne livrerons leurs bénéfices que sur le long terme. De là, on peut adopter une approche «top-down» pour dériver de la stratégie un Programme de Knowledge Management global, visant à standardiser les processus et systèmes. En parallèle (et ce n'est pas contradictoire), il nous semble tout aussi important d'adopter une approche «bottom-up», découpant le Programme en de multiples Projets coordonnés, et même en laissant émerger des initiatives locales/départementale pour ensuite en tirer les meilleures pratiques à standardiser et globaliser au niveau de la société dans son ensemble.

La gestion des objectifs et du périmètre fonctionnel est elle aussi clef. Il est courant de voir des projets de gestion de la connaissance dériver de leur objectif initial et de les voir s'étendre à n'en plus finir… Un processus efficace de «scope & change management» est des plus importants afin de valider les fonctionnalités et services à mettre en place, et de diviser la tâche en «building blocks» clairement identifiables. Dans cette dynamique, il est évident que le rôle du sponsor est des plus fondamentaux.

5.2. La modélisation/structuration des connaissances est complexe… et n'atteint que rarement l'idéal académique…

Les modèles théoriques de la gestion de la connaissance sont souvent séduisants par leur universalité et leur perfection. Malheureusement, la réalité des projets sur le terrain force souvent à remettre en question les idéaux académiques.

En effet, la vision d'un référentiel commun à toute l'entreprise, et d'un vivier de connaissance unique, intégré et partagé entre tous (Wentland, 1993, [6]) est certes très séduisante et ce vers quoi il convient de tendre; néanmoins des contraintes culturelles, organisationnelles, légales ou sécuritaires par exemple forcent souvent à une approche plus pragmatique et moins intégrée. De plus, la modélisation des connaissances est rendue plus ardue encore de par l'hétérogénéité de l'information et les habitudes héritées dans les différentes unités d'affaires, ou encore la variété de langues et concepts utilisés.

5.3. La technologie n'est pas une fin… mais reste un élément clef des projets ECM

Même s'il est évident que la dimension culturelle et la gestion du changement sont des dimensions clefs, il est fondamental de ne pas pour autant sous évaluer la dimension technique. Les défis technologiques sont en effet extrêmement sérieux et souvent plus complexes que prévus; il importe donc que le gestionnaire de projet ait une bonne compréhension des possibilités mais aussi des limites des systèmes informatiques.

5.4. Les grandes structures bénéficient grandement de projets Knowledge Management … mais sont peu agiles et ont moins de chances de réussir…

Les projets de Knowledge Management ne sont pas forcément l'apanage des grandes structures. De nombreuses contraintes liées aux grandes entreprises rendent en effet de tels projets particulièrement difficiles dans de tels contextes:
- La culture et les habitudes: plus difficiles à faire évoluer que dans des organisations de tailles plus modestes.
- Le fonctionnement en silos: caractéristique négative des grande entreprises, et qui rend plus difficile la mise en place de processus transversaux, mais aussi la mise en place d'une organisation de l'information commune et globale.
- La tendance marquée à travailler en équipe virtuelles et via des sous-traitants: ce qui rentre en conflit avec le besoin de contrôle et de centralisation de l'information.

5.5. La gestion du changement est clef… mais reste toujours sous-évaluée…

Il n'est guère besoin d'épiloguer sur cette dimension fondamentale de toute gestion de projet, mais qui prend tout son sens dans le cadre de projets de Knowledge Management. Si ce n'est peut-être pour souligner combien ce type de projets implique plus que tout autre des changements radicaux qui perturbent en profondeur les habitudes des utilisateurs, et donc qu'il est absolument essentiel de mettre en œuvre une véritable stratégie de gestion et d'accompagnement du changement. Quand les projets de changement sont de plus confiés à des mandataires externes, il s'avère vital de s'accorder au préalable sur les méthodes et systèmes de gestion de projet à mettre en place.

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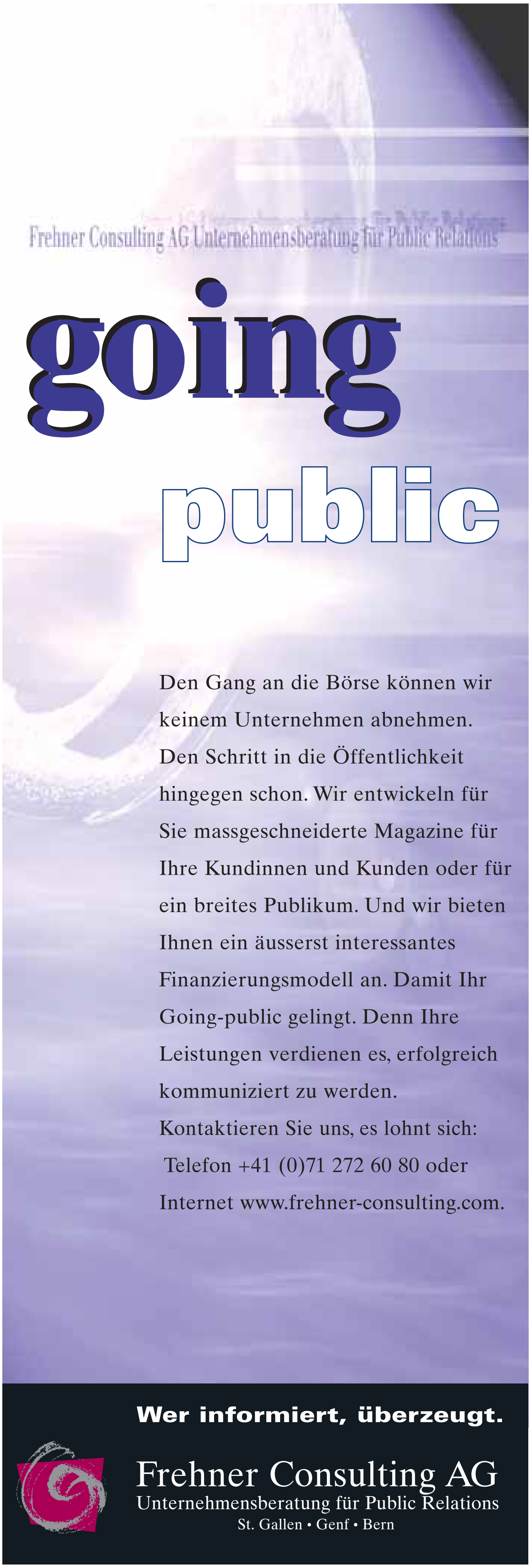

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