INTERNATIONAL JOURNAL OF PROJECT MANAGEMENT RESEARCH

PMresearch

Issue 3 2008
10 Euro

Project Overload

Research and development – the backbone of the project management profession

By Brane Semolic, Editorial Board Chairman

According to the Frascati Manual (OECD), scientific and technological innovation may be considered as the transformation of an idea into a new or improved saleable product or operational process in industry and commerce or into a new approach to a social service. It thus consists of all those scientific, technical, commercial and financial steps necessary for the successful development and marketing of new or improved manufactured products, the commercial use of new or improved processes and equipment or the introduction of a new approach to a social service. R&D is only one of these steps. In science we deal with the natural and engineering sciences and with the social sciences and humanities. Research and experimental development (R&D) comprise of creative work undertaken on a systematic basis in order to increase and refresh the stock of knowledge and competence, including the knowledge of man, culture and society and the use of this supply of knowledge and competence to devise new applications, and new methods of working and delivering. R&D activities comprise of three main types: basic research, applied research and experimental development.

Project management involves the integration of different areas of knowledge and draws upon organizational sciences, social sciences and humanities but also may draw on a host of other disciplines. The nature of R&D activities in the field of project management frequently has the characteristics of applied research and experimental development but may also encompass basic research. These approaches may be set against different organizational environments (different types of profit and non-profit organizations), different application fields (production, product research and development, commercial services, government services, marketing, public relations, human resources development etc.) and industries (IT, banking, automotive, aerospace, pharmaceutical, construction etc.). R&D activities may consist of any of these approaches. Researchers may perform their work within industrial organizations, R&D organizations, universities or in other organizations.

The IPMA mission is to be a global integrator and "value space" for researchers and research organizations working in the field of R&D and to provide a framework for sharing and disseminating such knowledge. "Value space" means the place where different demands and needs can meet, and where researchers and international R&D project teams can exchange their ideas, initiate some new R&D activities and so on. Part of described value space is the new PM Research journal. PM Research is a place where we want to publish the latest findings from the field of project management research and development and to support the global growth and recognition of project management body of knowledge.

Project Overload

Part 1: Multi-project settings – too many balls in the air and some on the floor

By Tina Karrbom Gustavsson and Annika Zika-Victorsson

In the mid nineties basic project management courses in higher education focused on the organisation, planning and management of single projects. The educational examples were well known, such as building a bridge for transport between two countries, making a tunnel under a canal and the world's largest spheric building. It was all about big, if not to say monumental projects, often referred to as "the big adventure".

However, the majority of real projects are of a completely different character and organisations rarely run only one project at the time. In most cases several projects run simultaneously and compete about often limited resources. This is why multi-project management has interested so many project practitioners and researchers over the last years.

Multi-project settings

The use of projects has increased as companies are striving to become more competitive, efficient and flexible. This development has been described as a "projectification" of society (Projectification of the firm: The Renault case by Christopher Midler in the Scandinavian journal of project management, 1995). The result is multi-project settings; project based organisations which run several projects simultaneously. These contexts combine a high level of task-complexity with a high level of organizational complexity. They require increased leadership-, coordination- and prioritization skills, strategically as well as operatively, and put high demands on each individual's ability to adapt and prioritize. There a numerous examples of project managers and project workers who are involved in five, ten, fifteen, even a hundred projects at the same time. But being efficient and able prioritize between so many simultaneous projects is not easy.

Project Overload

According to two previous studies on work and leadership in multi-project settings, the constant switching between projects makes project workers feel fragmentised, inefficient and stressed.

> "The constant switching between projects make project workers feel fragmentised, inefficient and stressed.

"The resource allocation syndrome: the prime challenge of multi-project management", by Mats Engwall and Anna Sjögren Källqvist in the International Journal of Project Management 21, 2003 and "Project Overload: An explanatory study of work and management in multi-project settings", by Annika Zika-Viktorsson, Per Sundström and Mats Engwall in the International Journal of Project Mangement 24, 2006. Only but a few project managers get the chance to work with only one project and focus on only one task at the time. On the contrary, the work day in a multi-project setting tends to fragmentize and result in continuous "fire-alerts". Usually, a number of different and unexpected problems must be quickly dealt with at the same time, often with time-consuming reorganization as a consequence. This phenomenon is called Project Overload.

Nevertheless, working with many projects at the same time also has its advantages. It builds networks and enables projects workers to share knowledge with each other and between projects.

Previous research on multi-project settings has focused mainly on the strategic level and so-called project portfolio management. Relations to the mother organisation and responsibility aspects have also been studied. However, the studies of the dynamics on the operative level, from an individual- and group-perspective, are relatively few.

Overload in multi-project settings – a current research project

In the spring of 2007 a research project on work and leadership within multi-project settings, focusing on project overload, was initiated. The project is financed by the Swedish council for working life and social research (FAS) and conducted by researchers at the department of Industrial management at the Royal Institute of Technology, KTH. The project includes three major project-intense organisations, whose development work is mainly project based. The aim is to study and highlight the actual daily working conditions for project managers and project workers in multi-project settings.

The research project is divided into three steps. The first step consists of interviews with project managers and project workers who participate in at least two simultaneous projects. The second step is a longitudinal study of a number of selected individuals' everyday project work and their experiences of this. The final part of the project, carried out in the spring of 2008, consists of a series of workshops together with the participating organisations.

The purpose of the workshops is to compare and elaborate on the results. The ambition is to develop a model for prioritizing between projects and tasks on the operative level, as a support for the individual project worker.

Constant interruptions

A first analysis of 16 interviews from two of the organisations show a high level of experienced project overload. The interviewees describe their working environment as characterized by crisis management, with constant interruptions and switching between tasks and projects.

Accessibility appears to be a central factor behind project overload in multi-project settings. Project members and project managers find themselves being constantly interrupted by questions via phone, e-mail and a number of personal meetings. In one of the organisations in particular, this problem was accentuated by an established "ask-the-colleagues-culture". Asking and answering all sorts of questions and constantly helping each other out were part of the organisation's established working routines. Everyone was expected to let go of whatever they were doing when someone needed help, whether it concerned their own project or another.

For certain, this is something positive, but is comes with a risk of inefficiency and overload. The constant interruptions and switching between tasks and projects made it impossible to leave a task in a condition that would make it quick and easy to carry on with it at the next occasion. It turned out that none of the interviewees were given any kind of support for prioritization on the operative level today, whereas they all said they need it.

An excessive number of meetings

The preliminary analyses also show that lack of competence resources is a problem within the multi-project setting. This obviously increased the workload for the project members, but it also came with a risk of poor competence development. The few experts had no time to discuss problems and thus no chance to spread knowledge within their field.

Another problem was the excessive number of meetings. Naturally, meetings are crucial for sharing information and making decisions. But too many meetings, often with the same participants, lead to slow processes and frustration among the project members who felt that too much time was wasted on meetings. Especially since many of the meetings had overlapping purposes.

Ed Holub/Corbis/Scanpix

A solution that was practiced was so called "slot times". This means that each project member only participates in the part of the meetings when their particular matter is discussed. They make a report and then leave the meeting to carry on with their other work. The project members found this method effective. However, the method also has drawbacks, such as the issue of competence dispersion.

According to the interviews the project members constantly feel like they do not have enough time, partly because they feel time is spent on the wrong things. In addition to the large number of meetings, a lot of time is spent on coordinating, following up and reporting project status, and allocating or even "hunting" resources when the project changes.

Conclusively, the study shows that project overload can be partly explained a strong time focus, lack of resources and an overambitious agenda, and by insufficient routines for decision making, side tasks and meetings.

›

Project Overload

Part 2: Better to run than to fight – the art of survival in multi-project settings

> Project workers usually work with lack of knowledge within turbulent environments, with vague or ambiguous working conditions and expectations.

Many people work in multi-project settings. This means they work as project members or project managers in several projects at the same time. Multi-project settings put high demands on each individual's flexibility, stress tolerance, and ability to adapt and prioritize.

The number of multi-project settings is growing, but they have been relatively little studied. It is therefore relevant to investigate what project workers actually think about their often challenging working situation and how they deal with it.

Working in projects

Project work is often described as challenging, exiting and complex. A high contextual complexity is combined with a high operational complexity. Project workers usually work with lack of knowledge within in turbulent environments, with vague or ambiguous working conditions and expectations. Each individual's ability to handle insecurity and constant changes of plans is challenged. In addition, one must be able to grasp the fuzzy and sometimes chaotic environment with disordered criteria, while working with a number of different actors.

The number of simultaneous projects in which project managers and project members are involved can vary drastically. In our study the number per individual was between two and over one hundred. Over a hundred is obviously an extreme case. Nevertheless, it is an example of the multi-project everyday work life that many people have to face in one way or another. From our perspective it has been interesting to investigate what project workers actually think of their working situation and what approaches and strategies they use to cope with it.

Multi-project work – experiences and survival strategies

Our ongoing study about "project overload" in multi-project settings is financed by the Swedish council for working life and social research (FAS) and carried out in cooperation with Scania, ITT and FMV. It consists of 43 interviews with project managers and project members, mainly within product development at these three organisations. The study focuses on experiences from working in multi-project settings and ways to handle everyday work life in these settings. We are now going to account for some of our conclusions.

Fragmentation and overload

An earlier article, "Project Overload: An explanatory study of work and management in multi-project settings" (Annika Zika-Viktorsson, Per Sundström and Mats Engwall), published in the International Journal of Project Management 2006, describes how work in multi-project settings is often characterized by fragmentation, inefficiency and stress as consequence of the constant switching between projects.

We have seen similar patterns in our study. Almost all interviewees experienced the same high levels of overload. Many of them describe their work as characterized by constant changes, fire-alerts and crises management instead of planned and structured work. The reasons given for this are primarily too many different tasks, too many projects and constant interruptions in the work resulting in constant switching between tasks and projects. Other reasons for overload are an excessive number of meetings, unrealistic time plans, vague objectives, lack of formal priority standards, constant changes of plans and not enough time for reflection. Moreover, they mention an information overflow that negatively affects the possibility to get an overview.

Free and inspiring

This article has so far put multi-project work in a considerably bad light. But is it really that bad? It should be mentioned that almost all interviewees also describe their work as existing and inspiring, which to some extent explains the high attraction factor of project work. Most of them also talk about a great sense of freedom and development possibilities. It should also be mentioned that only a few say the work a lot of overtime.

The art of survival in multi-project settings

So what do people working in multi-project settings do to cope with their overloaded multi-project workdays? Traditionally, structuring work and time planning have been a central part of project research and project practice, and the most important tool of a rational project has undoubtedly been the time-plan. In our study, however, it is the task-list that appears to be central. On the individual level it seems to have replaced the time-plan as support for actions.

Because of the constant changes in multi-project settings the time plan must be continuously

updated. Keeping it updated is almost impossible according to the interviewees, which is why they use a list instead. Tasks are written down as they come up and ticked off when they are done or handed over to someone else. However, task-lists also need some work. The challenge is to prioritize between the tasks by continuously updating the list, which most individuals do daily.

Task lists

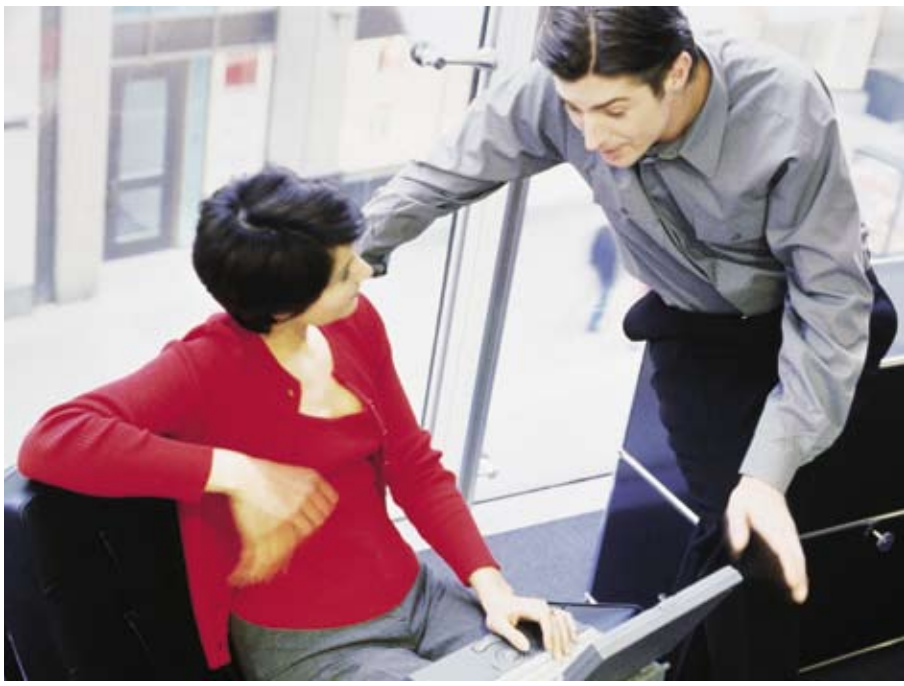
Task lists have several important functions. They give overview and estimation on the size of the work. What is not on the list does not exist. Another function is the visualization and concretization of the individual's productiveness. When a task is finished it can be ticked off and they can see their result on paper. The more tasks they are able to tick off, the more productive they have been.

There is obviously a risk that ticking off becomes the main objective and that the simple, known and repetitive short-term tasks are prioritized as they are easier to do and thus easier to tick off. More complex tasks that demands innovation and a focused mind, tend to end up at the bottom of the list. Moreover, the task list has no time dimension. Unlike the time plan, it shows the task taken out of its time- and organizational context. Connections to and dependencies on other tasks and projects are also missing and at risk of being overlooked.

Free zone

Another strategy that is commonly used in multi-project work life is to shut down the buzz of information and look for solitude. Many of the interviewees say their working conditions would be unsustainable if it was not for the times when they escape and find some space for themselves – a free zone – where they can work undisturbed. Some developed strategies are phone duty (one member of the project group answers the phone while the rest can work undisturbed), earphones (preferably large and visible ones, often without music) and evening work (sometimes at the office but normally in the calm of the home).

The designers in one of the organisations turned out to be the most upset about the constant interruptions and the difficulties to concentrate. Their motivation is based on innovation and thinking new, which is dependent on the possibility to work



M. Thomsen/Corbis/Scanpix

focused and undisturbed. This certainly does not only account for constructors.

The single project is one, the multi-project another A previous study on project work, "The practice of the temporary - on meetings and small talk as organized mechanisms in installation projects" (Tina Karrbom Gustavsson), shows project members who are striving to communicate about their work, constantly seeking out each other and each other's opinions. Looking for free zones was never on the agenda in that particular context – the single construction project. This search for contact and communication should in forthcoming research bee put in relation to the need for solitude in multi project settings, which was described by the interviewees in our study.

For more information and references please contact the authors.

About the Authors

Tina Karrbom Gustavsson, M.Sc., Ph.D. (Tech). Ass Professor at Department of Industrial Management at The Royal Institute of Technology (KTH), Stockholm, Sweden. Tina Karrbom Gustavsson can be reached at **tina.karrbom@indek.kth.se**

Annika Zika-Viktorsson, Phil. D. and senior researcher at Unionen, Stockholm, Sweden. Annika can be reached at **annika.zika-viktorsson@unionen.se**

LENS Living Lab Project

– Laser engineered net shaping, LENS, living laboratory project

By Brane Semolic and Jure Kovac

For building up competition capability of a company our own knowledge, capacities and other resources are not always sufficient. In contemporary business environment companies will restore and keep their competition capability not only by optimizing their own potentials, but mainly by utilizing capability of foreign resources and their connection to complete business process in so called network organizations.

The urgency of linking into network organizations particularly applies to SMEs. Virtual organizations are a special form of network organizations based on modern information and communication technology and on project working method. Among virtual organizations so called Living Laboratory takes its place. In the article an example of Living Laboratory is shown in the field of introducing up-to-date laser technology LENS by means of project approach.

NEED FOR A DYNAMIC, NETWORKED AND AGILE SMEs

Modern companies are permanently analyzing their business activities and the global market and are searching for business opportunities to improve their competitive capacities. New forms of network organization appear which organize the individual business activities in the regions favourable from the business point of view with respect to the prices of manpower, special know-how as well as raw materials etc. Trans-national research, development and production networks are being formed. The formation and development of these networks are influenced by the extent of development of the business environment of the involved countries, regions, national and regional government rules and regulations, social and cultural conditions etc. The world becomes a more and more intertwined network consisting of a series of different trans-national networks and specialized economic entities, working in different parts of the world, included in it.

Great need for the concentration of resources resulted in the creation of network structured integrations as one of the most appropriate solutions. One of the major features of creating network organizational structures is the integration based on rather loose and temporary association of particular resources in order to obtain the objective of competitive advantage. Projects and project management represent the fundamental tools for controlling the development and adjustment to changes within the business setting of a modern company. Analysis of global trends indicates that the expertise related to projects and project management represents one of the key components of success of any modern business organization.

The "Agile Workplace" study report was recommending moving beyond alignment towards work-centric agile work places (Joroff, Bell, 2001). It concluded that agile workplaces were representing the next important step in workplace evolution an alignment of space and work was considered innovative, if not radical, only a decade ago but then became a mainstream practice.

> "Analysis of global trends indicates that the expertise related to projects and project management represents one of the key components of success of any modern business organization.

LIVING LABORATORIES – SPECIFIC APPLICATION OF NETWORK VIRTUAL ORGANIZATION

Network organization – organizational concept of the 21 century

There is no doubt that the so called network organizational integration represents one of the most popular organizational concepts at the turn of the century. It is equally possible to argue that the expansion and importance of network organizational structures will further grow in the future. Inter-corporate integration is expected to gain importance and assume different form and dimensions compared to the ones we are familiar with today.

In professional literature the term **network integration** may be found in different fields of activities, namely in the area of information science, linguistics, psychology, sociology, etc. In the area of organization we also speak about network connections at various levels and fields. The appearance of network organization may be defined as a particular level in the development of organizational structures.

Anna Peisl/Corbis/Scanpix

Multiple forms of network organization have been formed in actual practice. There are several criteria for their classification. However, irrelevant of their origin or design, network organizational structures tend to display the following common features:

- they represent a specific model of inter-corporate collaboration
- they outline collaboration between particular participants (individuals, groups, corporations and corporate groups)
- reciprocal harmonization (consolidation) is carried both by means of hierarchic and market relationships
- reciprocal connection is present
- participating corporations may be economically independent
- complex reciprocal relationships in various fields are established (information, human, technological, financial field)
- there are both dynamic and solid connections
- major features are: decentralization, heterogeneity, dispersion of power and deciding authority.

The expansion and development of complex network connections were fuelled by the following:

- development of information and communication technology
- increased importance of time as a competitive element
- increase of competitive fighting (globalization) as a prerequisite for the need to join different resources in corporations
- growth of resources for research and development
- disappearance of national economy framework and creation of global market.

In the conception and maintenance of network business integration between two or more corporate organizations there are two fundamental sets of activities for the management.

The first set comprises specific activities related to the design and maintenance of network integration.

The second set consists of activities related to the traditional managerial tasks, i.e. planning, organization, administration and control.

›

› Activities related to the creation and maintenance of network organizational structures comprise the following:

- **Set-up of network connections** – the beginnings of creating network connections are represented by the search for potential partners. There is by no means imminent that network integration takes place on the basis of existing business contacts. Network integration may arise as a result of systematic search for potential business partners for any particular kind of cooperation.

- **Exchange between partners** – this comprises the participation and requests for the interchange of products, services, finance, know-how, information, experts, etc.
  The exchange is intended to satisfy the requirements of all partners included in the network.

- **Coordination** – the task of coordination is reciprocal consolidation and harmonization of functions of each participant within the network. Coordination of mutual performance of corporations represents the central responsibility in the functioning of network.
  To achieve the required degree of internal harmonization it is necessary to establish certain coordination processes, in order to attain agreements within particular areas.

It was mentioned earlier that two of the most important properties of inter-corporate network integrations are their polycentric and heterogeneous nature. This in other words means the existence of decentralized decision making and joint discussions in regard to the forms and methods of:

- defining objectives (strategies) of development and performance

- realization of set objectives (strategies) and

- carrying out mutual coordination.

Each network inter-corporate association is bound to devise such system of management which is able to take the coordinate role within the network. The coordinate managerial system means implementation of management at the traditional level. There is no doubt as to the existence of differences between the execution of managerial tasks within the traditional corporate concept and the function of management in the coordinate role in network organizations.

VIRTUAL ORGANIZATION AND LIVING LABORATORIES

Virtual Organization

At the base of the established frameworks, the authors Venkatraman and Henderson in the 1998 developed the three gradual model of the business virtuality. According to their views the virtual organizations differ from other organizations by specific abilities and by their "virtual attitude of thinking". The mentioned abilities and virtual attitude of thinking are expressed by:

- products and services that are presented to the customers "virtually", or are "virtually" consumed ("virtual encounter")

- supply processes among the organizations and by the processes inside the organizations, where the continuous processes of searching the synergistic links are carried on ("leverage-effects" and "virtual sourcing")

- knowledge in possession of the organization or among the organizations who, at different levels, connect in a flexible and non-bureaucratic way ("virtual expertise")

Virtual organizations represent a co-operation between formally nonconnected organizations or persons, who establish vertical or horizontal links and present themselves to the customers of their products or services as a single association.

Living Laboratories

We cannot find a unique definition of Living Laboratory in professional literature. Different authors cite various definitions.

If you want to summarize: Living laboratory is not a traditional research platform but rather an "innovation platform", that brings together and involve all stakeholders such as end-users, researchers, industrialists, policy makers, and so on at the earlier stage of the innovation process in order to experiment breakthrough concepts and potential value for both the society (citizens) and users that will lead to breakthrough innovations.
www.ami-communities.eu/drupal/node/28

CASE STUDY – LENS LIVING LAB

What is LENS Living Lab?

Lens Living Lab is a real-life research and operational laboratory with the focus on a Lens new technology applications development and operational use. The LENS Living Lab creates a base for inventing, testing, prototyping and marketing of new LENS technology applications. The major advantage of virtual organization is creation of pools of innovative organizations and experts from different research and end user areas who are collaborating and cooperating in this virtual environment.

The LENS Living Lab members are business partners who have long term interest for such a co-operation. Those organizations and individuals are from research and industrial sector.

The areas of LENS Living Lab application research and operations are:

- Tool making and niche machines production
- Automotive
- Aeronautics
- Medicine

The participating organizations are divided in groups:

A. Material science

B. Mechanical Engineering

C. Laser and Electronics

D. End Users

E. IT and Networking Technologies.

They have been involving in three operational and research frameworks as follow:

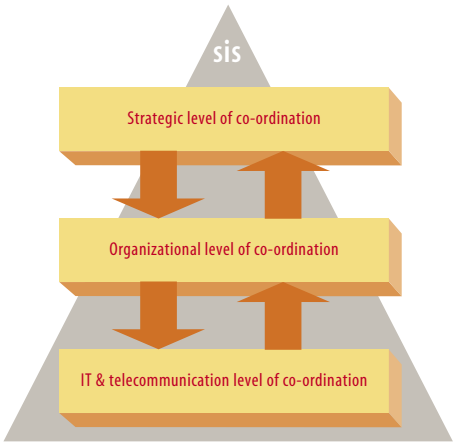
- Technological and Innovative Centre (TiC LENS)
- LENS Living Lab
- Laser Collaboration Platform (AA LaseR)

FRAMEWORK	ROLE	PARTNERS
TiC LENS	LENS Operations	LENS Consortia
LENS Living Lab	LENS Application Research and Use	Membership
Laser Collaboration Platform	Wider laser community collaboration	Open

Co-operation and Collaboration Frameworks

Organization and co-ordination of LENS Living Lab

The LENS Living Lab is open network organization having three levels of inter-organizational co-operation and coordination. The first level deals with the strategic business issues. At that level, the participating partners sign the long-term co-operation agreement. This agreement defines the areas of cooperation and management of LENS Living Lab. The second level deals with the inter-organizational issues (joint and support operation and project management). This level is related to the coordination of agreed business activities and connected organizational processes. The third level of co-ordination is related to the definition of IT and telecommunication platform of co-operation.



Levels of co-ordination in LENS Living Lab

LENS Living Lab Development Project

The conceptual framework of the LENS Living Lab project is presented on the figure in the next page. The SMEs existing need to increase their competitiveness by the LENS and related laser technologies present the main input to this project. This existing need present the platform for the further exploration of specific problems and related needs within all SMEs.

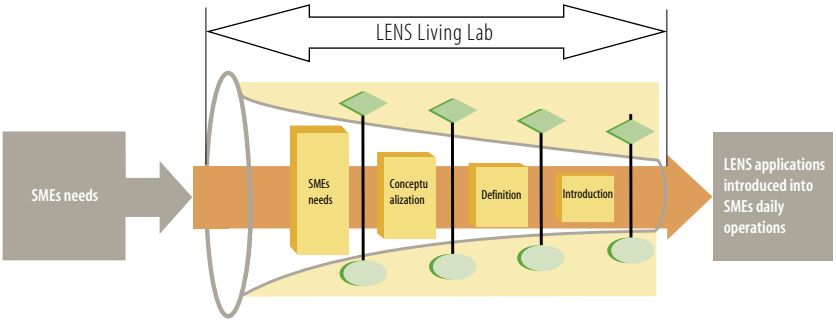
This project has nearly twenty different actors. The focus is on SMEs and RTD performers. Project partners are from Slovenia, Austria, Germany, France and USA.

The main objectives of the LENS Living Lab research project are:

- To support a new LENS application research and operation activities by use of innovative organizational and IT tools
- To develop, test and start-up the new applications – applied research of LENS technology

›

- To introduce the most advanced research topics and related applications of LENS technology
- To establish the system of long-term cooperation and collaboration between the project partners which will secure the sustainable application research and collaboration between partners, etc.



LENS Living Lab Project Conceptual Framework

CONCLUSIONS

In the modern business world, the networked organizational connections tend to become prevailing organizational form. Virtual organizations are a special form of network organizations based on the modern information and communication technology and having various configurations.

Methods and forms of organizing network virtual organizations are based on modern and flexible business models. Project approach is undoubtedly most frequent form and working method for managers in network virtual organizations. By means of project management we can successfully and effectively combine and manage resources of individual companies that integrate into network connections.

Living Laboratory represents one of many forms of virtual network organizations. The article presents an example of introducing up-to-date laser technology by means of the Living Laboratory concept. From the example shown it is evident that the development of Living Laboratory is based on the use of project work.

For more information visit:
www.cdt.ltu.se/projectweb/4421cddc626cb/The%20concept.html
www.ecolead.org
www.toolmakerscluster.net
www. slovenialivinglab.eu/en/
www.vinnova.se/

For references please contact the authors.

About the Authors

Dr. Brane Semolic, professor and head of the Project & Technology Management Institute at the Faculty of Logistics, University of Maribor, president of the TCS (Toolmakers Cluster of Slovenia) Experts Council, and visiting professor at several foreing universities. Dr. Semolic has 30 years working experience as expert, researcher, consultant, manager, CEO and project manager. He is also a member of the EU Ecolead Program Industrial Advisory Board and a member of EU Strategic Advisory Board on Competitiveness and Innovation. Dr Brane Semolic can be reached at **brane.semoli@siol.net**

Dr. Jure Kovac is associate professor of organization and management at the Faculty of Organizational Sciences, University of Maribor. His teaching and research interest are: organization theory, organization design, management and project management. Dr Jure Kovac can be reached at **jure.kovac@fov.uni-mb.si**

How to Provide Enterprise Project Management Solution?

By G.P. Sudhaka

The discipline of Project Management is gaining importance in the corporate world. Hundreds of projects are getting executed in the world, every year. The maturity of project management area is growing in the organizations across the world.

Many organizations are going for the deployment of Enterprise Project Management Solution in their organizations. Everyone wants to use the project management methodologies and techniques across the organization for the benefit of the organizational success and profitability. How to provide Enterprise Project Management Solution to the customer organization? What are the steps involved in providing such a solution? What are the drawbacks? What are areas need to be concentrated in providing Enterprise Project Management Solution? This articles tries to answer these questions.

Finding the enterprise needs

The process starts with finding the enterprise project management needs. To find the customer requirements, the best way is to interview the senior management, like portfolio managers, program and project managers, CEO, VP (Technology), and Director (Technology) in the organization. The interview discussion needs to be documented. It is better if the customer gives an objectives statement, which includes what needs to be achieved, to the consultant providing the solution. Otherwise the consultant has to come up with the requirements document.

In the interviews the consultant should try to find out the project management needs of the organization, which include project, program, portfolio management capabilities, needs of the project managers, team members and resource managers in the organization. The project management needs of the top executives of the organization are also found out. It is important to know the number of the users of this project management system and the stakeholders of the projects in the organization.

Collect all projects' information

Next step is to collect information about all the projects currently running and projects to be started in the near future. The project details to be collected include project name, business objectives, duration of the project, estimated costs, number of resources working on the project, return on investment, and business benefits. All these details about the projects are to be gathered in the organization. These details are very much required to project prioritization and project selection processes, which are needed to be documented in a tabular form.

Prioritize the projects

Once projects data collection is over, it is time to prioritize the projects based on certain factors. Here there are tools available to prioritize the projects of the organization. One such tool is Weight Impact Matrix. The factors, which effect each project include productivity, customer satisfaction, employee satisfaction, risk, profitability, and return on investment, etc. In prioritizing the projects, first step is to assign certain weight (between 0 and 1) to each of these factors, which effect the projects. For each project against each factor assign a score ranging from 1 to 10. 1 being the minimum and 10 being the maximum. For example, the weight of customer satisfaction is 0.8, and the impact of this factor for project X could be 8 on a scale of 1 to 10. Then multiply the weight with impact and sum all these values for all the factors, which results in numeric figure. The project with maximum value of this figure is the top priority project for the organization. An example for Weight Impact Matrix is given below.

Impact Area	Weight	Project 1	Project 2	Project 3
Customer Satisfaction	0.9	8	9	7
Employee Satisfaction	0.9	6	8	8
Productivity	0.8	7	7	5
ROI	0.7	7	8	6
Profitability	0.8	8	7	7
.....				
.....				
.....				
Total Weight Impact Score		29.5	32.1	27.3

> What are the steps involved and what are the drawbacks providing Enterprise project Management Solution?

Masterfiel/Scanpix

› As shown in the table, on page 13, Project 2 has got the maximum score in Weight Impact Matrix. Hence, we need to give top priority to Project 2. Like this we can prioritize our portfolio of projects so that the senior management can concentrate on top priority projects, can provide the funding and resources to the top priority projects in the organization.

Provide resources to top priority projects

Once we identify the top priority projects in the organization, it is time to invest resources and money on them. We need to collect the risks foreseen for the projects as well while collecting the projects details and prioritizing them.

Maintaining a resource pool

The first thing, in planning for an enterprise wide project management solution is to build the resource pool in the organization. We need to gather all the human resources, which are eligible to allocate to projects, needs to be gathered and stored in the database. The resource pool should consist of information like names of the employees, their department or group, e-mail ID, their manager, and their role in the organization, etc. details needs to be gathered and stored in the database.

This resource pool is useful to create individual project plans and task assignments. The project and portfolio managers should have access to these resource pools in the organization in addition to the resource managers. The resource pools are useful to get the weekly timesheets and to find out the task engagements of the resources.

Evaluation of the EPM tools

Next step is to evaluate the Enterprise Project Management (EPM) tools, which are available in the market. Some of them are Microsoft Enterprise Project Management Solution, Computer Associates's Clarity, and Primavera, etc. Microsoft's Enterprise Project Management Solution comes with Microsoft Project Server 2007 and Microsoft Portfolio Server 2007 with their respective clients including Web Access and Microsoft Project Professional 2007. The evaluation can be done based on the parameters such as reliability, effectiveness, and easy to operate, etc.

After evaluation of the EPM tool, one can suggest a suitable EPM tool to the organization.

Pilot run

Once it is decided to use a suitable EPM tool for the organization, first step is to install and configure the enterprise project management tool for the organization. Once installation is done, we need to create the resource pool of the organization in the tool. This will be stored in the tool's underlying database. Then it is our job to have a pilot run. Take one project in the organization and upload the project details into system. It is the responsibility of the respective project manager or the project lead. Let this team use the system on a pilot run. Based on the needs of the team, we may have to modify the configuration settings in the EPM tool. Then it is live for the entire organization. Using the current day EPM tools, one can even maintain the timesheets, risks, issues and project documents in the EPM system. The portfolio managers can get the dashboard of the projects.

Making it operational

Once configuration, upload of resource details, project details are completed, the enterprise project management tool is operational and the entire organization can make use of this project management tool organization wide.

Pedro Coll/AGE/Scanpix

Tracking the projects progress

Then it depends on the project manager's knowledge, skills and experience in estimating the tasks and project. The project managers will be able to track the progress using these EPM tools. Usually they provide percentage (%) complete of the tasks and projects. The portfolio manager gets a dashboard of all the projects and their status. He can even see the cost estimated, the actual cost spent on the projects, the schedule and the cost overruns of the projects.

Conclusion

The steps involved in providing the Enterprise Project Management Solution to the customer are discussed. It is a challenging task for the organization, however, with the benefits it gives, it is an interesting exercise for the organization. It improves the way we plan, execute and track the projects.

(This article is written based on the authors experience in providing Enterprise Project Management Solution at a medium size enterprise in hyderabad, India)

About the Author

G.P. Sudhakar, PMP with over a decade of experience in IT industry is currently working as Consulting Editor at ICFAI Research Center, ICFAI University, Hyderabad, India. He have worked in USA, UK, Ireland, Finland and India. He has Bachelor of Science, Master of Computer Applications, Master of Technology and Executive MBA. He is currently pursuing his PhD in Business Administration from All India Management Association-Aligarh Muslim University. He is member of All India Management Association (AIMA).
G.P. Sudhakar can be reached at
purna24@hotmail.com

Complex projects require special knowledge and skill

A report of the 2nd Knowledge Sharing Forum of Complex Project Management

By Mathias Scheiblich

> This forum is a milestone in the development of research and training content.

On 04./05. April 2008, the Australian College of Complex Project Managers (CCPM) had its 2nd Knowledge Sharing Forum (KSF) in Frankfurt, Germany.

The background for the conference can explained by the following statement from the invitation to the event by Stephen Hayes, CEO of the CCPM, Australia, and Rear Admiral Simon Henley, Chair of CCPM, Great Britain., which are the organisers of the conference: '"There is a strong emerging body of evidence and academic research indicating that traditional, linear project management tools and techniques, while still necessary, are insufficient to manage the most complex of today's projects through to successful delivery on time and within costs and performance targets. Consequently, Australian, UK and US Government bodies and Defence Industry have jointly supported an initiative to improve the international community's capability to deliver very complex projects across all industry sectors."

In recent years matures the realization by the research results of other scientifical areas but also by practical experience that complex projects are not sufficient to achieve desired results by using the traditional, linear project management tools and techniques. The unpredictable conditions and the actions are to prove and project and product environment are to cross-linked.

Features of the forum

The decision in Europe to go to Frankfurt, was result of active support by the IPMA, with the active involvement of Veikko Väliläin in his function as President of the IPMA, and Mary McKinley, Vice president oft the IPMA, and GPM (German Association of Project Management). Committed were especially Manfred Saynisch, a member of the Research Advisory Committee of the GPM, who has organized the contact with the CCPM in Sydney and Thomas Baumann, a member of the Board of Trustees of the GPM, who has took over the organization.

These forums (1 KSF in Washington, 2007),scrape together experts from different professions, which explore in addition to the definition and content of the management of complex projects topics such as training and certification for project managers of complex projects might be. Therefore the CCPM develops currently a standard of competence "Complex Project Manager Competency Standards (CPMCS)" and corresponding curricula to be able to fulfill acknowledged its task of qualifications and certification of such project manager.

In addition, the CCPM has research for the purpose complex project management on its road-map, which should be pushed ahead together with the international project management community. One decade earlier Manfred Saynisch started the research program "Beyond Frontiers of Traditional Project Management". The main result has been "PM 2nd Order" – a concept which is similar to CCPM-concept newer ways (for "PM 2nd Order" see, Project Management PRACTICE, issue 3, autumn 2007, page 8-11).

Content and lecturers of the forum

The KSF impressed equally in two ways – by the experts as well as by the quality of 11 lectures and discussions. Besides presentation and discussion of the current state of the Competence standards were the focus of interest especially lectures on topics that are a direct or indirect reference to the management of complex projects.

From international talks were at this point notably mentioned which have given a view about all surroundings the complex project management:

- Dr. Terry Cooke-Davies, a world leading researcher to PM, surprised with the statement "Project performance in major transport projects has not improved in the last 70 years." He discussed the past, some poor approaches to managing complex projects and formulated requirements for a future research programme to fill this gap.

J. McLoughlin/Corbis/Scanpix

- Manfred Saynisch with a contribution to results of the research program "Beyond Frontiers of Traditional Project Management", the basic idea of the PM 2nd Order (PM-2) and an approach to the integration of the PM-2 concept with the CPMCS, ICB-3 and the PMBoK .

- Stephen Hayes, in representation for Dr. David Dombkins, Deputy Chair of the CCPM, presented the CCPM-Standard "Complex Project Manager Competency Standards (CPMCS)".

As a selection for special parts is this scientifical area are mentioned:

- Michael Cavangh, representative of the Manchester Business School and British Aerospace Systems, highlighted the systemic thinking on the model of viable systems of Stafford Beer.

- Markus Körner's contribution to a possible input of Luhmann's theory of social systems to improve the management of complex projects.

- Eero Holming, President of the INCOSE-Chapters Finland, showed a process model based on the views of the system on Super systems engineering and complex systems in the global economy today's world civilization, which diversity in the treatment of complex systems must be respected and regarded.

- Prof. Dr. Roth (University Bremen) explains the organization of the brain and the (energy) optimum organization of its processes. Secondly he mentioned options to transfer it to the organization of complex (project) systems. At one point was an impressive Message: 90% of all tasks (reflexes) does the brain with 1% of neurons and 99% of all tasks (reflexes and automated processes) with only 10% of neurons – but 90% of the neurons are ready for 1% complex tasks – one option for organizations?

- Dr. Kroy (Director of the Ludwig Bölkow Foundation and systems theory expert) demonstrated the management approach of complex corporate and project situations. ›

› Speakers statements

The speakers summarized the following reasons for the failure of complex projects:

- The education and training focus and enable special to solve trivial situations and not complex one.
- People tend to act based on known and proven patterns of activity and achieve only incremental improvements.
- People usually think in clearly demarcated, known to them, closed systems.

The listed below points can be seen as success factors for complex projects / situations:

- Understanding and support of the management of complex projects by the top management.
- The development of the ability and application of the "look beyond" and thinking in projects as a holistic systems.
- The competence to use new rapid and fundamental changes to the realization and implementation of "crazy" ideas.

To understand this points is a good example the energy conversion process:

Since the beginning of usage of fire 20-30000 years ago, the principle has only improved incremental and was optimized harnessed for several areas of human life. In the 18th century James Watt went completely new ways with the invention of the steam engine. In combination with the discovery of printing technology through Guttenberg and the patenting of Edison-light bulb the industrial revolution was founded.

High level participants

The presence of many globally recognized experts confirmed the relevance of the subject. Here are mentioned on this issue in particular from the representatives of international and national project management organizations: Veikko Välilä, Finland, President of the IPMA, Prof. Christophe Bredillet, Dean and Director for PM at the University of ESC Lille and editor of the journal PMI for PM, France, and Prof. Nino Grau , a member of the Board GPM, Germany.

That these are also current topics for users from industry, banks and organizations, demonstrated the numerous representatives from industry (Siemens, Volkswagen, Schunk), banks (Hochschule der Sparkassen finance group,) but also the scientific community. All people welcomed out of interest the transfer in the practice and the delivering of solutions for the industry.

All those present were sure in agreement that this forum is a milestone in the development of research and training content. The highly discussions, some emotional expressed statements and the partner-like atmosphere were a pleasure for participants and organizers.

Final statements

Veikko Välilä as President of the IPMA called a continuation of the prevailing way in his final commentary. He proposed the active support of the IPMA, which already signed a cooperation agreement with the CCPM. One step on the way was setting the theme "Management of Complex Projects" at the 22nd IPMA World Congress in November 2008 in Rome and the Stream 12 under the direction of the CCPM. From the German research program "Beyond Frontiers of Traditional Project Management" will be in the same stream presented the results with the focus to complex projects.

Pier Marco Romagnoli (Congress-Management, Rome) informed on the state of the congress. For more information, visit www.ipmaroma2008.it

To summarize in short sentences:

a) The management of complex projects require new paradigms involving new approaches and related sciences.

b) The establishment of the CCPM is an additional impetus in this direction – also to prepare a project manager for such complex projects.

About the Author

Dr. Mathias Scheiblich is a certified project manager (IPMA) and consultant in various companies. Previously, he worked as an IT project manager for several corporations. In the center of his professional work is the practical implementation of (IT) projects into complex organizational processes. His priorities lie in the areas of project management, process improvement, quality management and configuration of technical products. He is also a regular lecturer at various institutions and has written books on these topics and editorial contributions. Dr Mathias Scheiblich can be reached at **mathias.scheiblich@gmx.de**

IPMA Events

October 12-15, 2008

Australian Institute of Project Management Annual National Conference

Canberra, Australia

Keeping the Promise through people, projects and performance

For more information, please visit **www.aipm2008.com.au**

November 9-11, 2008

IPMA World Congress 2008

Rome, Italy

Project management to run – get your projects running! Run safely and quickly throughout the complexity of handling resources, activities, risks and stakeholders. Come to the 22nd IPMA World Congress and meet the best of international project management – Start today and plan your stay in Rome!

For more information, please visit **www.ipmaroma2008.it**

June 15-16, 2009

23rd IPMA World Congress

Helsinki, Finland

For more information, please visit **www.refresh09.com**

Project Management Research is a quarterly magazine and is published by
IPMA (International Project Management Association),
P.O. Box 1167, 3860, BD Nijkerk, The Netherlands.

Tel: + 31 33 247 3430 Fax: + 31 33 246 0470 Email: info@ipma.ch Web: www.ipma.ch

Henrik Jönsson, Vice President IPMA Email: henrik.jonsson@ipma.ch

Frontpage picture: Charlie Dass/AGE/Scanpix.

Get your projects running!

Run safely and quickly throughout the complexity of handling resources, activities, risks and stakeholders.

Get your project results on time, within your budget and with high quality - Now!

Come to the 22nd IPMA World Congress and meet the best of international project management and experience best practice in an innovative way!

Start today and plan your stay in Rome.
Get more information from ***www.ipmaroma2008.it***

Your project dreams will become reality!

Organized by

ANIMP
Italian National Association of Industrial Plant Engineering

ITALIAN PROJECT MANAGEMENT ACADEMY

IPMA
international project management association

22nd IPMA World Congress
ROMA 2008
PROJECT MANAGEMENT TO RUN