MANAGING PROJECT PORTFOLIOS – THE NEXT STEP

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ABSTRACT
Designing the portfolio management process for your projects in a complex environment is a task that puts all your capabilities on the line. The steps that need to be taken all stems from having a sufficient knowledge of your planned and ongoing projects. If you don't, the output will be irrelevant. The use of methods in arranging information and analyzing it is so far only presented on a conceptual level or as a top-down selection method, this article presents the actual output of a case that will be used as input to a larger and forthcoming study of how a process for project portfolio management develops with the use of dependency structure- and domain mapping matrices.

Keywords: Project portfolio, complexity, PPM, DMM, Domain Mapping Matrix

1   INTRODUCTION

Complexity within projects of various types has many sources, makes planning difficult and increases the risks. The number of companies and organizations that use some kind of formal process for project work is increasing and has done so for a long time. As a result of demands for change and adaptation to the outside world and the market, project management and project models are constantly evolving (PMI Standards Committee and the Project Management Institute, 2008a). A project can be defined as a temporary organization with a clear and distinct task (ibid). In order to improve the ability of carrying out projects the "right way", different project models have been developed and put into use since the 60s. As the number of ongoing projects are increasing in an organization and moving towards a multi-project environment, project portfolio management (PPM) has become the established managing process.

A portfolio is a collection of projects, programs and other activities that have been grouped together in order to create effective governance and management of business strategies and goals (PMI Standards Committee and the Project Management Institute, 2008b). The introduction of governance and project portfolio management is motivated primarily by an increase in complexity, but it also helps placing projects close to the business – its strategic goals and resources and the management's overview (Filippov et al., 2010). Another reason is to identify the projects' dependencies towards each other and the activities that will affect the outcome (Pickens and Solak, 2005). All these motives, however, require that the organization has comprehensive information on all major current and planned projects (ibid). Much has been written on what the PPM process may look like. There are also defined activities, suitable for each of these different components within the process (PMI Standards Committee and the Project Management Institute, 2008b). Archer and Ghasemzadeh (1999) propose strategic mapping, portfolio matrices and cluster analysis as a way of prioritizing projects. In this article we take it one step further by showing an actual implementation and its practical results.

This article is the first of many on an extensive research project regarding the development and running of a PPM process for a part of the Swedish public health care system. The aim of this article is to report how a DMM approach contributes to a project that is taken from a larger but not yet fully defined portfolio of projects. We will show how to find and identify the underlying structures in an environment that can be used to design a PPM process.

The article presents the collection of planned and ongoing projects and one case where we select one of these projects. We make a DMM analysis of its subprojects and those parts of the organization that are recipients of these results. Our findings demonstrate the high degree of complexity and the need

for analytical approach – which is missing in the available PPM methodology today (Archer and Ghasemzadeh, 1999).

2   RESEARCH RELEVANCE

Within the PPM, as it is often reported in the literature, there is essentially a focus on governance and management of projects based on financial and strategic fit, and the proposed projects are weighed against each other. Some make it above the line and get "green light", others have to wait at "yellow light" or are stopped and given "red light" (PMI Standards Committee and the Project Management Institute, 2008b). The parameters of this decision making are collected from the project plan or equivalent documentation. Within the PPM, the efforts are motivated through the argument that the organization should not only devote itself to performing the projects the right way, but rather to engaging in the right projects. And with the right projects comes additional important one dimensional parameters, namely the projects' interaction with each other and with operations.

In an organization of the kind that is being studied in this project, the responsibility of operations is divided between politicians, administrators and clinical staff, at various levels and locations. Projects or similar work, initiated at various levels, is funded by various budgets. The need to coordinate them is therefore evident. However, no practical tools for this have been developed. In large organizations with many projects run by sponsors at various levels, the consequences of this are often significant, mainly in competition of the same resources and collisions in time for implementation. Portfolio management with a focus on new product development, the need of PPM is often emphasized, but also similar to the conclusion of Cooper that "*Effective portfolio management in new product and R & D Management remains an elusive Goal. Thus, the quest for the right portfolio management method must continue: the stakes are too high and the challenge is too important to ignore*" (Cooper et al., 1999).

2.1   Domain mapping matrix

The fundamental matrix in this field is the Design Structure Matrix (DSM), which is a square matrix (m * m) consisting of fields along a diagonal (Steward, 1981). The same components are in rows as well as in columns, and each pair of elements will return twice, but in different order. DSM allows for sequential groups as well as groups that have been clustered based on their mutual dependency. Domain Mapping Matrix (DMM) has different components in rows and columns (m * n) (Danilovic and Sandkull, 2005). Each pair of components occurs only once. DMM is used to analyze the dependencies between two projects or, as is the case project of this article, between project and operations.

3   METHOD

We have conducted an initial survey of the projects that were being planned or already underway within the organization where such aggregate information was missing. Through a national network, we have also made similar requests to other Swedish public health care organizations, finding that none of them claims to have collected such information.

The project, which stretches to 2016, is anchored by the senior management in the organization, which enables us to discuss the methods of finding and accessing relevant information. The project started by contacting all managers in the organization via email, and by publishing information about the project and this inventory on the intranet. The collecting of data began in March 2011 and will run continuously in order to manage a database of all major projects. The first collection was done via an e-mail query, comprising all 262 managers. They were asked to submit the names of projects or similar work they knew of, and a contact person for each project. Three weeks later, we had a net list of 75 projects and their contact persons. This list was new information to the organization. Each contact person received a personal email from us, with a link to a questionnaire in which they were asked to answer questions about the requested project. For various reasons, eight out of these 75 projects were not current - they were either not projects or they had been discontinued. Out of the remaining 67 projects, 44 have so far been identified. One of them, called VAS+, was chosen as our case. In order to collect data for the array for this project, the head of development and the deployment manager of the organization were contacted. They presented proposals for subprojects in VAS + and those parts of the health care business that are recipients of the results. They also helped putting

together a group that was assigned to perform a four hour workshop in which to identify data dependencies within the matrix.

4   RESULTS

The lack of strategies of dealing with the projects as a portfolio has been evident on several occasions in the organization. Problems arise when a project, almost regardless of complexity and size, is run as if it was the only project in the organization. Here is an example of projects that, according to our first survey, collide with each other. They have been initiated by top management and are high priority, but they lack the coordination as a group. One project started in spring 2011. Its purpose is to establish an improved health care process for cancer patients that will include all aspects of the treatment process and parts purchased by other organizations with specialized skills. Project B is started simultaneously and has the mandate to deregulate specialized care in the region and make it available through private operators. Our chosen case, VAS+, involves development of the health record that is to be available throughout the patient's entire care process. None of these projects, A, B and VAS+, have been coordinated. These three projects affect five health care organizations with a total of some 80 000 employees, and even small positive coordination effects are likely to have significant impact on the healthcare.

Figure 1 shows the situation today. The number of projects exceeds 44, but these are the ones we have identified so far. Each project is run as if it was the only one within the organization. Identifying the projects and the use of DSM and DMM analysis will allow us to create programs such as shown in figure 2. These groups of projects are created through a common output (Turner, 2009). For example, four projects share a common strategic objective. In figure 3, the programs have had a common framework or briefcase. This is the project of a common input - in this case, all resources from the part of the organization that works with health care and health (ibid).
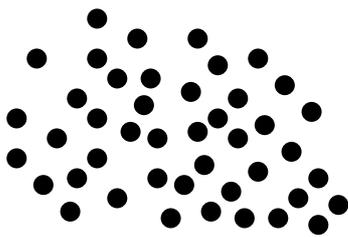

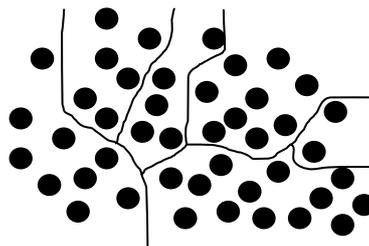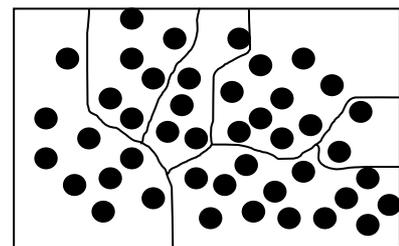| Figure 1.	Figure 2.	Figure 3.
44 individual projects	Example of 44 projects run as 6 programs	Example of 44 projects run as 6 programs in one portfolio

In VAS+ we identified 58 sub-projects including feasibility studies and pilot projects. The project is a development of a relatively newly introduced digital medical record. This journal, VAS, is replacing many legacy systems and enables the transfer and readability of information between different units within the organization. Each contact with a patient leads to a record in this system. VAS+ was introduced in 2009 as a joint project on the development of this software system. It is expected to be completed in 2013 when it is supposed to take effect and be in operation.

The collaborating organizations are the three organizations that currently use the system. VAS was originally developed by one of these organizations but the VAS+ project is done by the three together and aims to meet everyone's need for improved features. Programming work is procured and done by a supplier. Health care operations included in our research projects and the recipient of the VAS+ deliverables is divided into 30 units. These 30 health care units are divided into 128 more specific recipients of the VAS+ result, but we limit ourselves for practical reasons in this analysis to the 30 units. The matrix has 58 rows and 30 columns containing 1730 fields. We let each field be judged on a scale of 0,1,2,3 where 0 represents no dependency between the two components, the number 1 means

information is needed, 2 means that it requires communication, and 3 corresponds to very high dependence and understanding of each other.

The workshop and the following analysis have resulted in that the project now is lead as a program with 5 projects. There is recruited a Program Director that comes from a consultancy group. Each project is lead by a Project manager in close collaboration with the identified recipients of the deliverables.
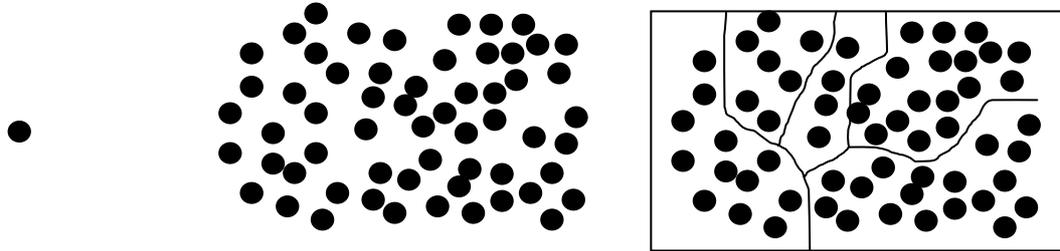
Figure 4.	*Figure 5.*	*Figure 6. VAS+*
VAS+, 1 out of 44 projects	*58 semi-coordinated sub-projects within the VAS+ project*	*as a program with 5 projects including the sub-projects*

5   MANAGERIAL IMPLICATIONS

At this stage of the project VAS+, there has been such a technical obstacle in the development of certain sub-projects that they have had to slow down until the components necessary is developed to continue. Our DMM analysis led to that several sub-projects will be integrated with each other and brought closer to some parts of the operations. We also note that the VAS+ is a program, not a project.

Sub-projects in VAS+ are still driven in some respects independently of each other and independent of the recipients. Moreover, VAS+ is done in cooperation with three other health care organizations that uses VAS and some sub-projects are carried out exclusively by one or two of the three. This means that for some sub-projects you are only recipient of a result, not a part of the development. With a clearer definition of the VAS+ as a program and that the deliverables from the sub-projects is largely the project; you will get a clearer structure, more in line with reality.

6   CONCLUSIONS

Our findings identify a number of problem areas that apparently seem simple to operate for a large organization, but in this case, when we have actual input from the practical work, it gives us a different picture. In the process of setting up a PPM, the task of identifying the projects has been the most critical task to obtain a comprehensive overview. It has proven to be difficult to actually identify all planned and ongoing projects, even more to do so continuously.

There is great uncertainty about what a project is and what the consequences are if you choose to define it as such. Rumours have emerged that top management requires that projects meet all elements of the defined model. This has led to that several projects are being handled as something else than projects, thus lacking the structural support and definition they would benefit from.

When trying to find all planned and ongoing projects we have indications of that there are different views of the value of a project portfolio in which certain individuals in the organization may perceive transparency as a threat to autonomy over their "own" projects within their part of the organization. This implicates an approach of a PPM as a strict information- and analysis support system, rather than a decision support system for the top management.

A multi-project environment as it is operated in this organization means that each project is run as if it were the only project in the organization. The clusters of sub-projects and operating units in the organization that the DMM analysis gave us will have a direct impact on how the project organization is designed and contribute directly to the overall project maturity.

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- PPM – project portfolio management
- Research relevance
- Method
- The VAS+ project
- The VAS+ as a case
- Summary

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Introduction

- Project Portfolio Management in public health care - the first in Sweden
- Uncertain amount of projects
- Diffuse initiation process of projects
- Projects are run as if they were the only project
- DSM/DMM methodology is used as an analysis tool
- Case project: VAS+, IT journal system – direct impact

A Complex Organization within Public Health Care

- Region Halland
- Budget 2011, 1,1 Billion USD
- Comprising health care but also public transport, culture, regional development projects
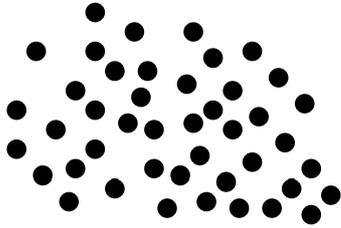
A Complex Organization within Public Health Care

Figure 1.
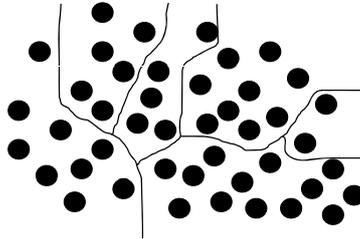*44 individual projects*
Example of figure
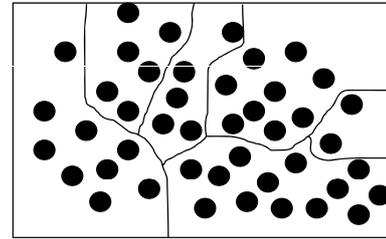
Figure 2.
Example of 44 projects run
as 6 programs

Figure 3.
Example of 44 projects run
as 6 programs in one
portfolio

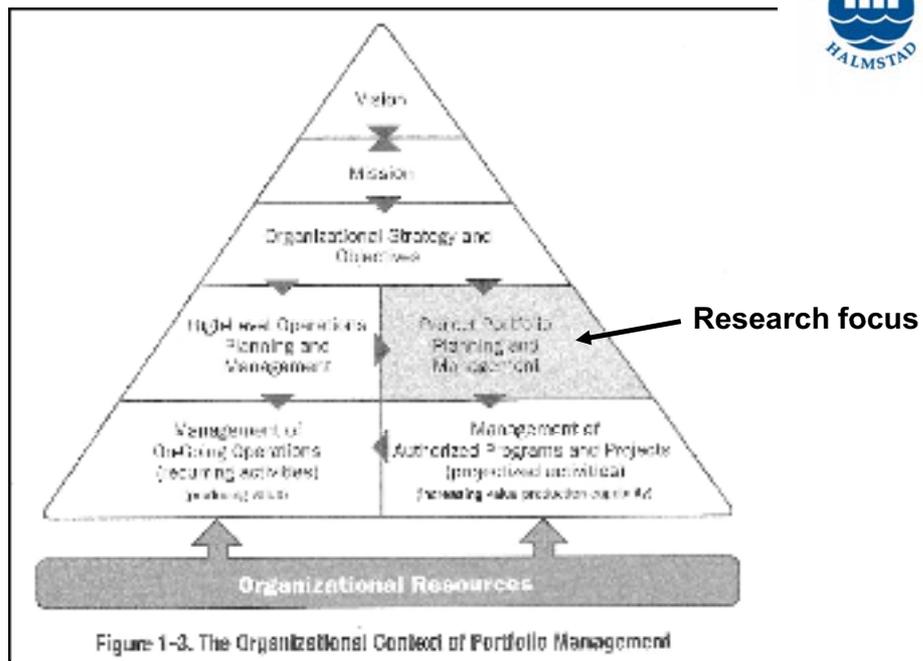# PPM – Project Portfolio Management

Research focus

Figure 1-3. The Organizational Context of Portfolio Management

(The Standard for Portfolio management, Second Edition, 2008, p.9)

Research Relevance

- Increasing amount of planned and ongoing projects increases complexity (Filippov et al., 2010)

- Lack of knowledge when it comes to establishing the process of Portfolio management in practice (Cooper et al., 1999)

- The use of analytical methods to deal with portfolio management is proposed (Archer and Ghasemzadeh, 1999)

Method

- Web surveys
- Phone contact
- Workshop with case project
- DMM analysis using Complex Problem Solver (www.redteam.se)

The VAS+ Project

- VAS – patient journal IT system to keep all information in one place and available
- VAS+ is a project that aims to develop VAS into a more modern, user friendly system
  - Co-operation between three users of VAS, all public
  - External supplier of the programming
  - Set to deliver in 2013

The VAS+ as a Case

- DMM workshop in May 2011 led to:
  - VAS+ defined as a program
  - 58 sub-projects, made to 5 projects
  - Power given one of three collaborating organizations
  - Politicians, citizens and communicators now included in the project

Summary

- The case project is now better in line with objectives and with a structure that can deliver
- DSM/DMM will be needed through out the project to secure implementation
- DSM/DMM is worth trying as analytical tool in a PPM process
- Complexity occurs through both internal and external dependencies
- Many obstacles still to be addressed is not of a rational character

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