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UPMM – A Full Model for Portfolio Management

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Introduction

What is a project portfolio? May it contain a set of investment project only? But in project-based organizations just commercial projects and their sets are much more important than investment projects. Moreover, in such organizations you may not easily strictly partition projects into investment and commercial. Usually the first commercial project of given type delivered to a customer is to some extent at the same time an investment project as the supplier develops new techniques then. So even the full model of investment portfolios must cover commercial projects.

Should the portfolio management model focus on aligning processes as in PMI Portfolio Management Standard (PMI, 2006) or on executing, controlling, monitoring and closing processes as in Organizational Project Management Model Appendix I (PMI, 2003)? Of course it must cover both of these process groups. After selecting a mix of portfolio components (aligning processes) you have a lot of work to run and maintain a portfolio.

The Unified Portfolio Management Model (UPMM) built over PMS and OPM3 and author's own experience with managing portfolios in a project-based organization gives an answer to both of the above stated questions. It covers both types of projects and full portfolio life cycle.

Portfolio Management Process Groups

Portfolio management processes are divided into five groups:

- Strategy Development

  Processes responsible for developing organization's strategy. Vision, mission and particularly goals to be achieved are defined here. Especially in project-based organizations this process must be considered as an integral part of portfolio life cycle – practically it almost directly defines sets of (commercial) projects to be performed by the organization.

- Portfolio Governance

  Basic decisions made about a portfolio. Activities that lead to portfolio initialization, then its modifications, and finally its closure. These activities are performed by a body that is external to the portfolio, for instance by the management of an organization.

- Portfolio Management

  Work processes of the Portfolio Management Team. For example: building a Portfolio Management Team, developing a schedule of Portfolio Management Team activities, cost management for these activities.

- Directing Components

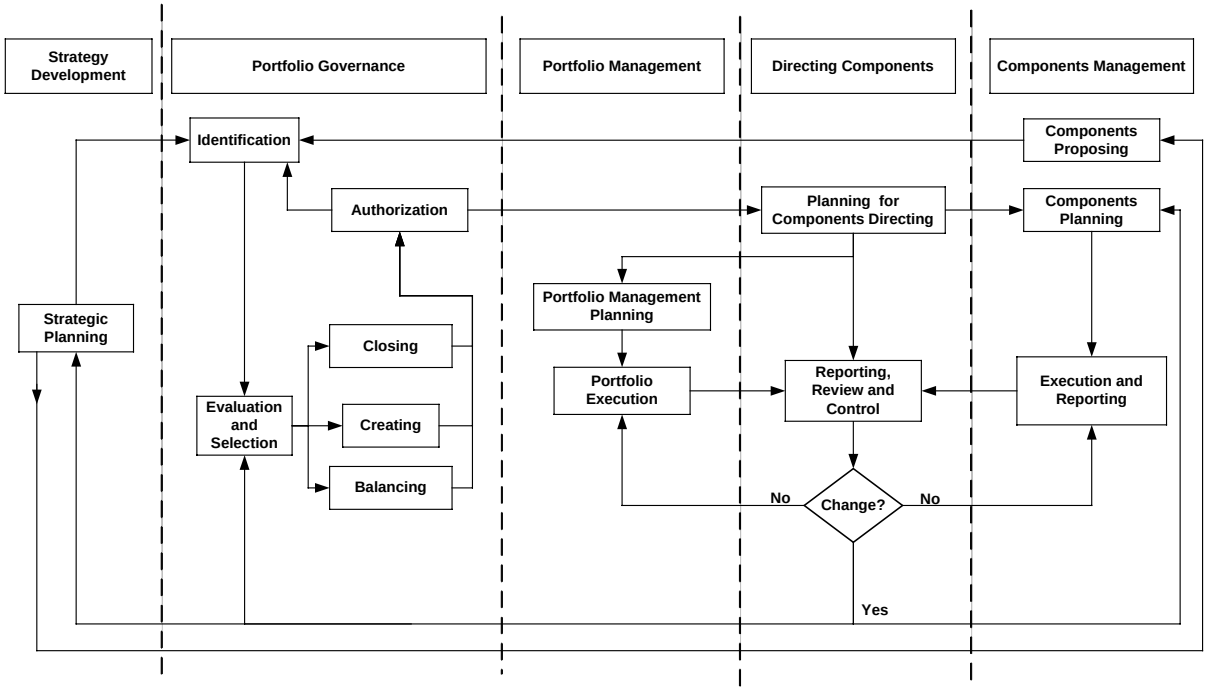
  High level management processes carried out by the Portfolio Management Team that are focused on components of a portfolio and the portfolio as a whole. For example: establishing the budgets of components, setting up reporting principles for components, appointing components managers, managing portfolio level risks.

- Components Management

  Management activities performed by the Component Management Team, which are vital from the point of view of the whole portfolio. For instance, reporting to the Portfolio Management Team.

These five groups of processes make up the basis for the Unified Portfolio Management Model.

This division of processes is clearer and more adequate for portfolio management purposes than the division presented by the PMS. The groups of processes defined in UPMM have well-defined teams to perform them. The main criterion for division of the portfolio management processes is based on separation of management processes from directing processes.



Processes of the Unified Portfolio Management Model

The portfolio life cycle consists of phases that are delimited by the main Portfolio Governance (aligning) processes: Creating, Balancing and Closing. These processes are usually performed at intervals that depend on the type of organization. They are executed more frequently in project-based organizations than in operational organizations.

The next sections of this paper present the processes of UPMM according to the sequence of their execution in portfolio life cycle.

Strategic Planning

The result of Strategic Planning is the strategy of the organization. The goals defined by the strategy organize all activity engaged in by the organization. All portfolio components should be proposed and developed in accordance with the strategy that the organization has adopted. The strategic goals are submitted to the process of Components Proposing.

Components Proposing

Systematic and organized creation of portfolio components proposals. Proposals must be prepared in alignment with the strategy of an organization. The process offers the detailed procedures and forms needed to proposing a component. In commercial portfolios this process is performed by salesmen. In investment portfolios – usually by authorized representatives of organization units.

Identification

The Identification performs pre-screening of potential portfolio components. The formal correctness of components proposal is verified here. The formally correct proposals together with current portfolio components authorized in previous portfolio life cycle are evaluated against the content of the current strategic plan. The verification of current components is necessary as organization strategy changes over time: components aligned with the previous strategy may not fit the current strategy.

Evaluation and Selection

Evaluation and Selection is a process responsible for defining and maintaining the set of components of a portfolio. The processes of component Categorization, Evaluation, Selection and Prioritization described in the PMS, has been combined to create one process called Evaluation and Selection. Processes of PMS are in fact only a functions. They are executed sequentially, without any conditional or cyclic control flow. Moreover they, as a whole, have one well defined input – a set of identified potential components – and one output – components divided into portfolios. So this is really one process.

Creating

If a process of Evaluation and Selection defines a set of components for a strategic goal which up to that point in time had no components, a new portfolio must be created.

The process of creating a portfolio is particularly important for project-based organizations that usually hold more than one commercial portfolio (where portfolios usually correspond to sets of projects performed by main organizational units). A commercial portfolio is being created when a new market opportunity becomes important for an organization.

In operational organizations there is usually one portfolio of investment projects (in a broad meaning of this term). In the worst case it may be empty. So therefore creating of a new portfolio is not of particular importance there and this was the probable reason of absence of the Creating process form the Portfolio Management Standard, which is focused on investment portfolios.

Balancing

If the process of Evaluation and Selection results in some changes being made to the existing portfolio composition, the process performed on this portfolio is called *balancing*. Some components may be removed from the portfolio and terminated, while others may be added as a result of portfolio balancing.

Closing

If a strategic goal making a basis for creating a portfolio has been excluded form organization's strategic plan then a portfolio corresponding to this goal must be closed. A portfolio may also be closed if after the Evaluation and Selection process a portfolio contains no components. The latter case is meet more seldom, as usually, when a strategic goal is important for an organization, it works intensively for maintaining its portfolio of projects.

Authorization

The results of Creating, Balancing and Closing processes are passed to the Authorization process. There are two main goals of this process. First, a register of current portfolios and their components must be maintained. This register is used, among others, as a source for the Identification process in the next portfolio life cycle. Second, after the decisions are made, they must be authorized in order to allow for necessary decisions on execution (e.g. allocation of resources and budget). These decisions are forwarded to Planning for Components Directing process.

Planning for Directing Components

Now the tour through the portfolio life cycle leaves the group of governance processes and enters the group of processes oriented toward portfolio components directing. These processes are performed by Portfolio Management Team. They are divided into **sub-processes** which follow the **processes** of OPM3 and, indirectly, project management processes described by PMBoK (PMI, 2004), as OPM3 is strictly based on PMBoK. The degradation of processes to sub-processes is due to clarity of the model. It would be too complex to understand if we placed all of the PMBoK processes on the diagram together with governance processes.

The first from this group is the Planning for Components Directing process. For a portfolio to come into being, it must be prepared first – for instance, its management team should be created. This process includes sub-processes that determine the way in which components will be performed, too.

There are three directions of outputs of Planning for Directing Components process.

The first of them is passed to the Components Planning process. The **Portfolio Management Team** makes decisions which must be executed by **Component Management Team**s. These decisions may be further subdivided into two subgroups: direct and strategic decisions. Assigning a budget or assigning a component managers is an example of decisions form the former group. Defining a common approach to quality management or to risk management make examples of processes from the latter group.

The second group of outputs of Planning for Directing Components process defines the way of executing, monitoring and controlling the portfolio as a whole. Portfolio Level Risk Identification is an example of processes from this group.

There is an analogy between projects and portfolio execution. Project work consists of product delivery and project management. Analogically portfolio work may be divided into "product delivery" and the portfolio management processes. Components directing and controlling portfolio as a whole is the product of Portfolio Management Team. Portfolio management processes are analogical to project management processes. All the results of Planning for Directing Components process are passed just to the process of Portfolio Management Planning in order to plan managing a portfolio. The Portfolio Management Planning process is one of the processes from the Portfolio Management Group. The other definition of these process group may be as follows: the processes which are indirectly oriented at a portfolio and its components.

Below you can find some examples of sub-processes of the Planning for Components Directing processes.

Portfolio Quality Planning

Determination of the main quality standards that are valid for all components and the portfolio as a whole. These standards deal mainly with **quality of processes** and their improvements. Maintenance of these standards is verified during audits which may be performed by components quality teams as well as by the portfolio quality team. The standards for product quality are usually developed at the component level.

Portfolio Risk Management Planning

Determination of the approach for risk management for all components and the portfolio as a whole. Specifying the methodology, risk categories, way of defining risk probability and impact for all the components. On the basis of this input each component must perform its part of Risk Management Planning process.

Components Human Resource Planning

Developing characteristics of portfolio managers. Developing a components management team staffing plan containing a description of acquisition procedures, timetables etc.

Components Communication Planning

Determining the way in which the performance of components will be reported. Definition of

standard reporting procedures, including report templates and schedules. Defining other procedures such as exception handling and issues escalation.

Components Cost Budgeting

Assigning budgets to components on the basis of:

- general decisions made by the Portfolio Governance process group,
- detailed budget plans developed by Component Management Teams.

Components Dependency Analysis

Analyzing dependencies between components. Note that here there is no process analogous to Activity Definition from PMBOK® Guide. In the UPMM a component is analogous to an activity from PMBOK® Guide. And including components into a portfolio is performed through processes from the Portfolio Governance group. The dependencies of portfolio components are mainly internal in nature – they are often based upon resources accessibility.

Components Schedule Development

Applying relationships between components to the creation of a portfolio schedule. The process may be recursive in nature, especially if the portfolio contains programs.

Portfolio Scope Planning

Determining the way in which the portfolio content is to be managed – how components may be added or removed **within an existing strategy**. Defining detailed procedures for performing these actions.

Create Sub-portfolio Hierarchy

This is a process analogous to Create WBS from PMBOK® Guide. It relates to the definition of sub-portfolios, if applicable. Dividing a portfolio into smaller, better manageable sets of components.

Portfolio Level Risk Identification

Identification of risks that may be harmful to the portfolio as a whole. There are two groups of risks at the portfolio level:

- external risks, i.e. those which may be identified in the portfolio environment (like change in the market situation of the sector for which the portfolio products are designed)
- internal risk, i.e. major component risks, the results of which may have implications for the portfolio as a whole.

Portfolio Level Risk Qualitative Analysis, Portfolio Level Risk Quantitative Analysis, Portfolio Level Risk Response Planning

Processes analogous to similar processes at the project level, but oriented toward portfolio level risks.

Components Planning

In the portfolio management model this process covers all the processes from the planning group of PMBoK. Components Planning is executed according to the decisions made by the Planning for Directing Components process.

Portfolio Management Planning

Portfolio Management Planning is a process from the Portfolio Management process group. As it was mentioned earlier, this is a process group analogical to project management processes on the project level.

The process of Portfolio Management Planning, added to the PMS model, contains those sub-processes that relate to the work of the Portfolio Management Team.

The following sub-processes are examples of elements of this process:

- Portfolio Management Human Resources Planning,
- Portfolio Management Activity Definition,
- Portfolio Management Activity Duration Estimation,
- Portfolio Management Cost Estimation,
- Portfolio Management Risk Management.

Execution and Reporting

Executing a component according to decisions made by the Components Planning process. The most important output of this process from the point of view of portfolio management is information. Produced information may be divided into two types: performance reports and risk, problems or issues escalations.

Portfolio Execution

A process from the Portfolio Management process group. Performing the processes planned by the process of Portfolio Management Planning. The following sub-processes are examples of elements of this process:

- Direct and Manage Portfolio Management,
- Monitor and Control Portfolio Management,
- Portfolio Management Scope Verification,

- Portfolio Management Schedule Control,
- Portfolio Management Cost Control,
- Perform Portfolio Management Quality Control.

Reporting, Review and Control

A process form the Directing Components process group. Processes from the PMBOK® Guide Execution and Monitoring and Controlling process groups performed by the Portfolio Management Team on components and on portfolio as a whole. Below you may find some examples of these processes.

Portfolio Level Monitor and Control Components Work

Monitoring and controlling of components as a whole, from the portfolio level.

Integrated Change Control for Components

Handling change requests at the portfolio level. There may be two groups of sources of such change requests:

- requests generated by the portfolio level Integrated Change Control process for components,
- requests generated by portfolio level management area processes (e.g. Portfolio Level Components Schedule Control).

Portfolio Scope Control

Making decisions related to adding and closing components within a portfolio management life cycle.

Portfolio Level Components Schedule Control, Portfolio Level Components Cost Control

Escalation of change requests resulting from components and related to their budgets and schedules. Generation of change requests defined at the portfolio level.

Portfolio Level Risk Monitoring and Control

Handling of risks that are identified and analyzed at the portfolio level.

Acquire Components Management Team, Develop Components Management Team

Acquiring and developing components managers according to procedures defined in the Components Human Resource Planning process.

Manage Components Teams

Managing all people working in connection with a given portfolio. Developing change requests for shifting resources between components. Note that these actions are usually taken with respect to team members who have not been acquired at the portfolio level.

Perform Components Quality Assurance

Quality assurance activities (e.g. audits) for components processes performed by members of the Portfolio Management Team.

Portfolio Level Information Distribution

Receiving, storing and distributing information produced by components and which is important for the portfolio as a whole, its stakeholder or for other components than the one that is the source of information.

Portfolio Level Performance Reporting

Collection, processing and distribution of information related to the portfolio as a whole. The most important information consists of performance reports and forecasts.

Change

Activities aimed at developing recommendations / conclusions related to changes in the portfolio.

When this process is performed, the following changes are possible:

- Changes in the way the components are performed.

  For instance: shifting resources between components.

- Changes in the portfolio composition

  For instance: closing a component that doesn't have any prospects for achieving the goal for which it was created.

- Suggestions for strategy modification

  For instance: concentration of the organization's activities on one of the strategic goals (portfolio), when this portfolio generates profit that surpasses profits brought in by other portfolios.

A change request is forwarded to the relevant process: Component Planning, Evaluation and Selection or Strategic Planning.

Conclusions

The model presented above fully covers the area of portfolio management and extends the OPM3® model of portfolio management as well as the Portfolio Management Standard. It may be applied for investment as well as for commercial portfolios.

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Stanislaw Gasik received his Master of Science degree in Mathematics from the University of Warsaw. Stanislaw moved to Project Management (PM) after working over 15 years as a software engineer, analyst and consultant in the information technology (IT) sector. He began his PM experience with several years of quality management, after which he started delivering his own projects. He has been a lecturer in software engineering and project management at the Warsaw School of Economics and other Polish educational institutions. He was a member of the team that developed the Guide to the *PMBOK*® 2004 for the Project Management Institute (PMI®). He was active in other PMI standardization projects like the development of the Portfolio Management Standard. Currently he is a board member of the PMI Warsaw Chapter, responsible for education and professional development. Stanislaw headed implementation of Primavera portfolio management tools at ComputerLand, Poland, which was distinguished with the Primavera Excellence Award in High Tech sector in 2006. His professional interests include portfolio management, PMO, maturity models, knowledge management and supplier-customer relationships in project management. Stanislaw can be contacted at sgasik@sybena.pl.