TAILORING PRINCE2 MANAGEMENT METHODOLOGY TO SUIT THE RESEARCH AND DEVELOPMENT PROJECT ENVIRONMENT

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Abstract

PRINCE (**PR**ojects **IN** **C**ontrolled **E**nvironments) is a structured project management method for effective project management. This method was established by the Central Computer and Telecommunications Agency (CCTA) which was an United Kingdom government agency and initially used for information system projects. PRINCE was originally based on PROMPT (a project management method created by Simpact Systems Ltd. in 1975) and in 1989 effectively substituted PROMPT within Government projects. The Office of Government Commerce (the former CCTA) continued to develop the method, and in 1996 PRINCE2 was launched. PRINCE2 is extensively used by the United Kingdom government, and now is a *de facto* standard widely recognised for all projects not just for information system projects.

For any research and development project is possible to apply a product-oriented methodology as PRINCE2 and guide the project by its principles.The originality of the paper consists in adapting and adjusting PRINCE2 to a pre-established project methodology of an authority which finances projects (such as National Authority for Scientific Research- ANCS). PRINCE2 was tailored to suit that methodology and designed the *adapted process model diagram*.

The aim of the paper is not substitution of PRINCE2 processes and products with those of a default methodology but only according them. Applying PRINCE2

methodology for any research and development project is a guarantee that the project could be kept under control in terms of time, cost and quality.

Keywords: PRINCE2, project management, methodology, process model diagram

INTRODUCTION

The Project. The word *project* comes from the Latin verb *"proicere"* which means "something to put forwards". The word project thus actually originally meant "something that comes before anything else happens". A definition for project is: unique effort that includes risk, with a start date and finish date clearly defined, made towards achieving the targets established, respecting certain parameters related to cost, time and quality.

In agreement with PRINCE2 a <u>project</u> is a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case [1].

The Project Management. Project Management (PM) is a fairly common activity, which many of us do it. Most times we cannot realize that. Instinctively. Project management has been practiced since early civilization. Great Pyramids, the Great Wall of China, monumental cathedrals are just a few examples of projects. But also daily and usually things such as travels and vacations. From the begining the civil projects complexity rised a number of problems. Until 1900 the management of civil engineering projects was done by architects and engineers. Frederick Taylor (1856-1915), for the first time considered the design activity in the work processes. His contribution represents foundations of modern tools of PM such as WBS (Work Breakdown Structure) and resource allocation. As a discipline, Project Management was developed from several fields of application including civil construction, engineering and military operations planning, with contributions of Henry Gantt (1861-1919) in planning and control techniques, and Henri Fayol (1841-1925) with his theory on the five functions of management. Both were students of Taylor. Their work forms the basis of knowledge of project and program management. Before 1950, most of the projects were managed using only Gantt charts and informal techniques and tools. The 1950s marked the beginning of the modern PM era. Many techniques have been assembled into a single coherent system of PM. During this period two mathematical models were developed the project planning: CPM (Critical Path Method) and PERT (Program Evaluation and Review Technique).

According with PRINCE2 the <u>Project management</u> is planning, delegating, monitoring and controling of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits and risks [1].

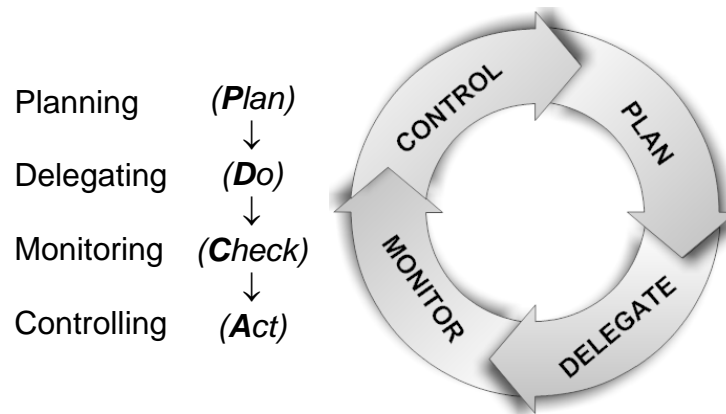Project Management is the PDCA (Plan-Do-Check-Act) of all aspects of the project.

Planning   *(**P**lan)*
                   ↓
Delegating *(**D**o)*
                   ↓
Monitoring *(**C**heck)*
                   ↓
Controlling *(**A**ct)*

Figure 1. Project Management according to PRINCE2

PROJECT MANAGEMENT METHODOLOGY

The need of a methodology. The Project management is just common sense [2]. Of course it is. So why many of us do it wrong? A good planning and control not mean automatically a happy ending for the project. Anticipation of an unpredictable event and a risk response plan does not guarantee achieving the project objectives.

One answer might be that most of us doesn't learn from our mistakes. We not use our gained experience to improve the model, do not assemble the techniques and methods of PM in a functional mechanism as a whole. Or we do not have a holistic view of the project.

PRINCE (**PR**ojects **IN** **C**ontrolled **E**nvironments) is a structured project management method for effective project management. This method is based on experience from thousands of projects and from contributions of many project managers, teams and project sponsors, academics, trainers and consultants. This method was established by the Central Computer and Telecommunications Agency (CCTA) which was an United Kingdom government agency and initially used for information system projects. PRINCE was originally based on PROMPT (a project management method created by Simpact Systems Ltd. in 1975) and in 1989 effectively substituted PROMPT within Government projects. The Office of Government Commerce (the former CCTA) continued to develop the method, and in 1996 PRINCE2 was launched. PRINCE2 is extensively used by the United Kingdom government, and now is a de facto standard widely recognised for all projects not just for information system projects.

The main feature of the PRINCE2 methodology is that It is scalable and flexible so it can be tailored to the project environment. A key approach of the method is that it clearly distinguishes the process management and techniques involved in the process itself.

There are many proven techniques for planning and controling used to support PRINCE2. Examples are Critical Path Method (CPM) in the planning process and Earned Value Management (EVM) in the progress control.

However PRINCE2 develops own techniques such as Product-based Planning (PBP) or Quality Review Techniques (QRT).

PRINCE2 Principles. The purpose of PRINCE2 is to provide a project management method that can be applied regardless of project scale, type, organization, geography or culture. This is possible because PRINCE2 is principles-based. The seven PRINCE2 principles are:

1. Continued business justification
2. Learn from experience
3. Defined roles and responsibilities
4. Manage by stages
5. Manage by exception
6. Focus on products
7. Tailor to suit the project environment.

PRINCE2 Structure. There are three parts to the structure of the method itself (figure 2):
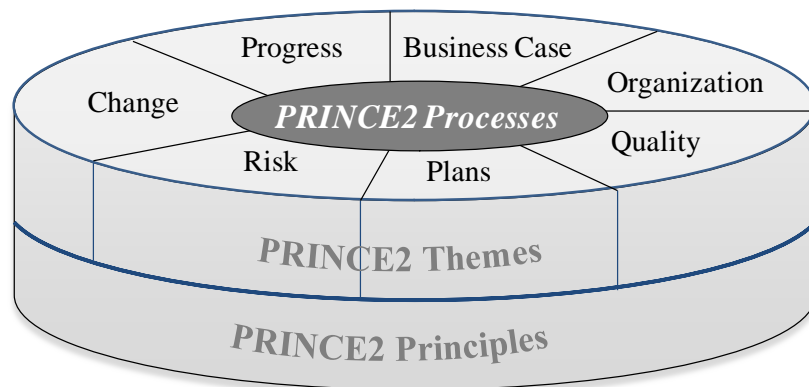

Figure 2. The structure of PRINCE2

- *Techniques* (Product-based planning and Quality review techniques)
- *Themes* (Business Case, Organization, Quality, Plans, Risk, Change, Progress)
- *Processes.* PRINCE2 is a process-based approach for project management. There are seven processes in PRINCE2 (figure 3):
  1. Starting Up a Project (SU)
  2. Directing a Project (DP)
  3. Initiating a Project (IP)
  4. Controlling a Stage (CS)
  5. Managing Product Delivery (MP)
  6. Managing a Stage Boundary (SB)
  7. Closing a Project (CP)

Each management process is a structured set of activities designed to accomplish a specific objective. It takes one or more defined inputs and turns them into defined outputs.

ANCS. National Authority for Scientific Research is the specialized authority of central public administration subordinated to the Ministry of Education, Research, Youth and Sport, which performed its duties in research field. This authority is a public institution, funded by the state. Financing is achieved by launching competitions of research projects.

REZULTS AND DISCUSSION

The aim of the paper consists in adapting and adjusting PRINCE2 to a pre-established project methodology of an authority which finances projects such as National Authority for Scientific Research (ANCS).

PRINCE2 was tailored to suit that methodology and designed the adapted process model diagram (figure 3).

The purpose of, is not substitution of PRINCE2 processes and products with those of a default methodology but only according them [3].

Pre-project. Project Mandate is equated with the call for open competition for research projects. ANCS transmits the Information package, Guide for applicants and Annexes. These documents represents the methodology of ANCS for a program competition.

In Starting Up a Project process the project manager (PM) writes a Project Brief (an outline Business Case, a plan, product descriptions, quality, estimates resources, costs, time, risks and tolerances) and fills in Form B (technical paper).

Initiation of the project. In Initiation stage the Project Board (Direction level) decides if the outline Business Case of the project is desirable, viable and achievable, and therefore worthwhile investing in. The Direction makes retouches and aproves the Project Initiation Documentation (PID).

In this stage this documentation for application is written:

- Accompanying documents (Partners collaboration agreement, Project plan and other documents),

- Forms and ANCS templates (Forms A1, A2, B and C).

Initiation Notification is similar to Proposal Submission of documentation to ANCS on written support and online. The Authority evaluates the project proposal and gives the acceptance or not for financing or rejects it. The acceptance ends with a contract signing that means the project is authorized.
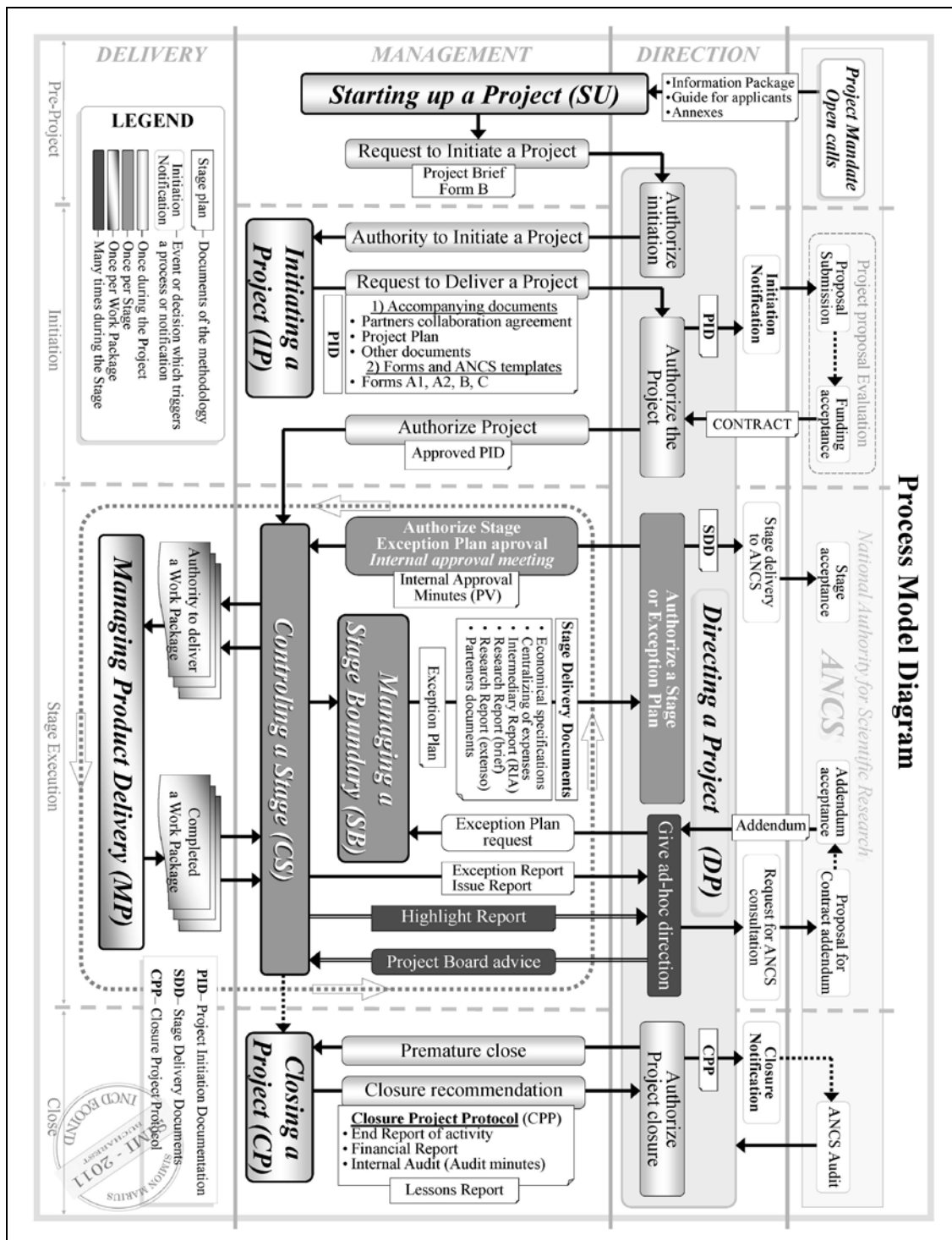
Figure 3. Process Model Diagram

Stage Execution. From the point of Authorize Project forward the project enters into the PRINCE2 mechanism of stage controling, product delivery and managing the stage boundary as we see in the figure 3.

There is a cyclical sequence of processes finishing with outputs, products which correspond with initially established acceptance criteria. Many

times during this stage project manager sends Highlight Reports or an Exception Report to the Board and requests for advice. These could be followed by request for an exception plan, request for ANCS consultation or an ad-hoc direction given by the Board. It's possible that any overrun of cost, time which cannot be solved in limits of tolerances of project to be proposed for viewing by ANCS for a contract addendum. Tolerance is the permissible deviation from a plan without bringing the deviation to the attention of the next higher authority.

The control of project is achieved through control elements anchored in different moments of time. The purpose of control is to ensure that the proiect remains viable against its Business Case and produces the required products which meet the defined quality criteria. Controls ensure that, for each level of the proiect management team, the next level up of management can monitor progress, compare achievement with plan, review plans and options against future situations, detect problems and identify risks, initiate corective action and authorise further work.

A stage is ending with an Internal approval meeting recorded in an Internal Approval Minutes and delivering documentation to ANCS.

Closing the Project. The purpose of the Closing a Project process is to provide a fixed point at which acceptance for the product is confirmed and to recognize that objectives set out in the original PID have been achieved.

As a result of project closing the Board authorizes the closure through a Protocol consisting of an End Report of activity, Financial Report and Internal Audit.

CONCLUSIONS

Applying PRINCE2 methodology for any research and development project is a guarantee that the project could be kept under control in terms of time, cost and quality.

PRINCE2 ADVANTAGES

- It is now generally accepted as PM Standard in European area.
- It is scalable and flexible so it can be tailored and adjusted to the project environment.
- Product-based orientation will clarify what the project will offer, why, when, by whom and for whom.
- Divide the project into stages easy managed and controlled.
- It has well-defined organizational structure for project management team.
- It is focused on economical justification (Business Case) and implementation of the control should be made relatively to the original purpose and economical parameters established.
- It is a tool for diagnosing, facilitating, ensuring and assessing work done in the project, solving problems and for auditing.
- Promotes learning and continuous improvement in organizations.
- Can be integrated into the organization's Management Quality Sistem.

PRINCE2 DISADVANTAGES

- Writing and maintaining PRINCE2 documents, registries and reports implies a relatively large work volume.
- Managemnent Component of Configuration in earlier versions than 2009, although these versions can be applied in many project fields, they show a clear tendency for use in IT projects. The PRINCE2 2009 version has placed this component in the background, solving this issue.

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