Software e-Projects - New Job Opportunities for the Project Management Professionals

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Software e-projects differ from traditional software projects, having an information and communications technologies (ICTs) intensive communication. As the most high-tech projects, the speed of the processes increases, project managers focus on time to achieve aggressive cycle times. The differences between e-projects and traditional projects in software development require a new project management approach and a new project management professional profile. The paper presents new job opportunities for the PM professionals.
Keywords: *software e-projects, information and communications technologies (ICTs), project management professionals.*

1 Introduction

The information and communications technologies (ICTs) are facilitating the delocalization of human activities. There are, of course, limits of delocalization of work through the use of ICTs. The proportion varies depending on the industrial structure of any given economy. The distribution of teleworking varies considerably between different European countries. Also, there are important gender differentiations. Women make up only 19% of regular teleworkers and 38% of supplementary teleworkers.

About 30% of jobs in the developed countries are wholly or partially 'delocalisable' through the use of ICTs, whilst the remainder are largely 'fixed'. Nevertheless, the breakdown in the link between the place of work and the time of work affecting the minority of delocalisable jobs has implications for all jobs, given the common regulatory framework that prevails right across most labor markets ([2]).

2. The Changing Nature of Work in Software e-Projects

The ICTs affects project processes. The work is increasingly customer-driven, complex and creative. Project development cycles shrunk, the globalization is affecting every project process. For example, software designs are developed in an EU country, discovery is done in US, coding is developed in Romania or India and customer support is handled in another EU country. Customer feedback drives software development. For example, the initial release of MS 95 was distributed to over 100.000 people who acted as beta tester ([1]). MS used the quick feedback from this group of customers to finalize the product design before it was formally released.

The skill, methods and tools that ensured success in the past are no longer adequate for success in today e-projects. To ensure success, project management now need to be concerned with defining new project management professional standards.

The software e-projects shift from independent to networked professionals due to the increasing connectivity of distributed workers and the need for synchronous work processes. Concurrent engineering approach requires that most of the specialized activities take place simultaneously. The creativity is the most valuable quality of the work. Creativity is a measure of innovation made by teams in the first place, not by the individuals. Work products are developed by teams working in a collaborative style.

In the software e-projects there are no fixed results. A work process doesn't have a distinct event. Things are constantly being updated and modified based on customer demand. A deliverable becomes a "work in progress" {[1]}. For example, Web pages are modified almost on a daily basis based on customer feedback and changes in markets and business models.

The software e-projects demand project man-

agement skills in order to ensure real time collaboration between project team members, a sense of community and participation and flexible and extensible processes;

3. Project Management Competence Baselines

3.1. A Guide to the Project Management Body of Knowledge - PMBOK® Guide

PMBOK® Guide is structured as follow:

- *PM context* (Detailed descriptions of the project phases and life cycle, project stakeholders and organizational influences and a brief description of the key management skills and social-economic influences);

- *PM processes* (Definitions of 39 processes, allocation of each to a group of processes and identification of their interactions. The process groups are: initiating processes, planning processes, executing processes, controlling processes and closing processes);

- *PM Knowledge areas* (Definitions of nine PM knowledge areas and description of those processes, out of the 39 processes, belonging to each PM area. The Knowledge areas are: project integration management processes, project scope management processes, project time management processes, project cost management processes, project quality management processes, project human resources management processes, project communications management processes, project risk management processes, project procurement management processes);

- *Appendices and glossary.*

3.2. Project Manager Competence Development Framework - PMCDF

PMCDF represents a standard which provide individuals and organisations guidance on defining project manager competence and guidance on how to manage the professional development of the project manager. The figure 1 presents the PMCD framework structure.
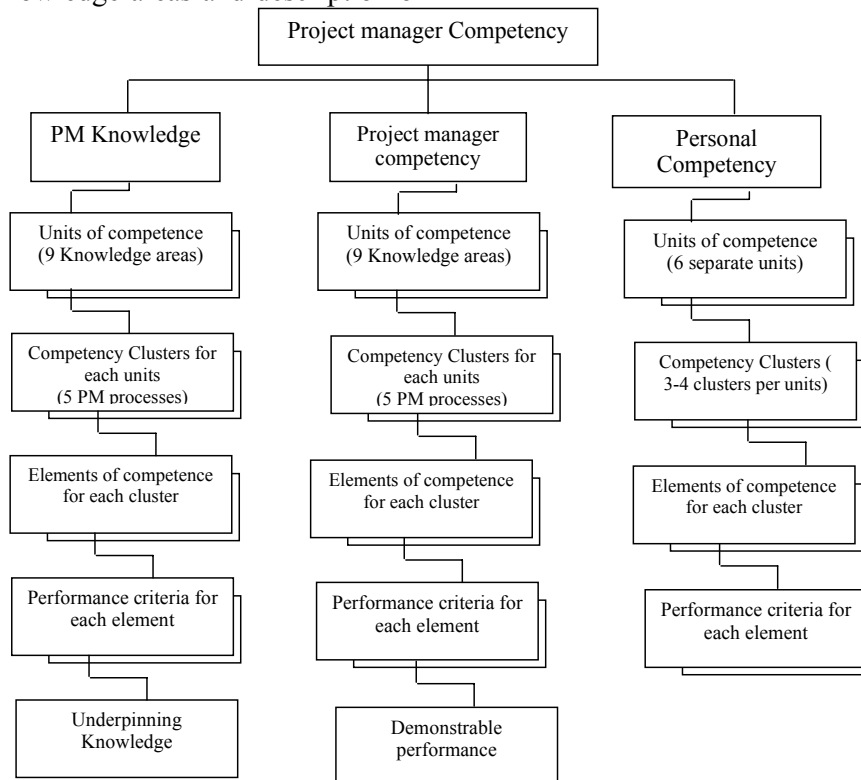

Fig.1. PMCD Framework Structure

3.3. AIPM National Competency Standards for Project Management

Australian Institute of Project Management (AIPM) defines the competency standards for project management. The broad concept of competency concerns the ability to perform particular tasks and duties to the standard of performance expected in the workplace.

Competency requires the application of specified skills, knowledge and attitudes relevant to the effective participation in an industry or enterprise. The key competencies describe the skills and knowledge which are essential for the effective workplace partici-

pation and involve the sorts of capabilities commonly used by employers as selection criteria.

There are three levels of performance defined within the key competencies (figure 2).

Characteristic \\ Level	Autonomy	Responsibility and account-ability	Complexity of skill and knowledge	Context of application	Choice and range of contingencies	Discretion and judgment
"Apply"			The text in the cells defines the different characteristics for the three levels.			
"Guide"						
"Manage"						

Fig.2. The three competence levels applicable to PM

3.4. International Competence Baseline - ICB

The IPMA Competence Baseline (ICB) provides guidelines to define the work of the project management personnel with respect to knowledge, experience and personal attitude (figure 3). ICB is about what a PM should know, have done or be capable of, not about how to do projects.

Each National Association, member of the

IPMA can use the ICB to develop a more detailed National Competence Baseline (NCB) in conformity with local culture and specific circumstances. The ICB is the basis for validation of the national certification programs to the rules of IPMA. IPMA is committed to the continuous improvement and expansion of the ICB, as well as the development of additional standards.
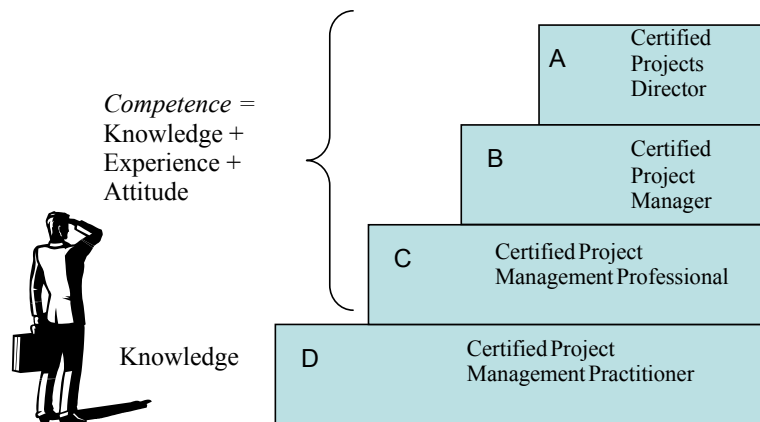

Competence = Knowledge + Experience + Attitude

Knowledge

A Certified Projects Director
B Certified Project Manager
C Certified Project Management Professional
D Certified Project Management Practitioner

Fig.3. PM Career Levels according ICB

4. New Job Opportunities for the Project Management Professionals

The effects of ICTs differ greatly from occupation to occupation. The 'heavy' extractive and metal-based manufacturing industries, the mining, steel production or ship-building are declined in developed economies and created a fall in demand for manual work in-

volving physical strength and endurance. The new service industries, requiring quite different skills, including social skills weren't able to reabsorb the male labor affected. The problem of unemployment is perceived primarily as the problem of the unskilled or semi-skilled male manual worker, older man or a young one leaving education with insuf-

ficient or inappropriate qualifications. For other groups of men – those in white-collar technical and managerial occupations – the new technologies have often presented new opportunities rather than threats.

The EU unemployment rate was 9% in May 2004, as reported by Eurostat, the Statistical Office of the European Communities ([5]). It was 8,9% in May 2003. In May 2004 the lowest rates were registered in Cyprus, Luxemburg and Austria (all 4,2%), Ireland (4,5%), the UK (4,7%) and the Netherlands (4,9%). Unemployment rates were highest in Poland (18,9%), Slovakia (16,4%), Lithuania (11,5%) and Spain (11,1%). In May 2004, the US unemployment rate was 5,6% and the Japanese rate was 4,6%.

In May 2004 compared to May 2003, the unemployment rate for males in the euro-zone grew from 7,9% to 8%, while it felt from 8,4% to 8,3% in the EU25. The female unemployment rate remained the same at 10,2% in the euro-zone and was unchanged at 10% in the EU25. In May 2004 the unemployment rate for under-25s was 17,4% in the euro-zone and 18,2% in the EU25. The lowest rates for under-25s were observed in Austria (6,9%), Ireland (8,1%) and the Netherlands (9,5%). The highest rates were in Poland (39,6%), Slovakia (28,3%), Italy (27,1%) and Greece (27,1%).

Romania should align with the acquis in the field of equal treatment and work permits and should strengthen public employment services with a view to participate in the EURES network. Emphasis should be put on language training for staff and in the field of social security systems. Romania should focus further efforts on the adoption of a new labor code, continued transposition and implementation of the health and safety at work.

Once teleworking became relevant, some political issues arise. One of the most important issue is: should the new technologies be used to move the jobs to the people or the people to the jobs? During the last years, for example, a large numbers of young software engineers have been encouraged to come to EU countries coming from other European countries or from India. In Finland, where many are employed by Nokia, they are typically employed on 1-3-year fixed-term contracts ([2]); in the UK, they may be employed by Indian subcontractors, in the practice known as 'body shopping' ([3])

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