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# Managing Innovation Projects versus Ordinary Project Management

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Csaba Deák Ph.D,

Associate professor, University of Miskolc

e-mail: [deak.csaba@uni-miskolc.hu](mailto:deak.csaba@uni-miskolc.hu)

## Abstract

What are the differences between managing an innovation project and managing an ordinary business project? The elements of project management have been firmly reinforced: have a good plan, stick to requirements, control costs, provide a schedule margin in high risk areas, etc. In most organizations, there is quite a high level of competence in project management; however, the understanding of how to manage an innovation project is not always so evident. At the same time innovation portfolio leaders must understand how projects that face high levels of ambiguity on many dimensions are managed. The aim of this paper is to clarify the interrelation and contrast between project management and innovation.

**Keywords:** Innovation, Project, Management, Uncertainty

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## 1. Introduction

Numerous articles and books deal with the theory and practice of project management, and plenty of literature can be found on the topic of innovation. Despite this, few theoretical or practical summaries have appeared on the management of innovation projects. This article aims to give an answer to the question of the differences between managing an innovation project and a typical business project.

It is magnificent that transnational companies that are among the greatest innovators of the world, like Robert Bosch or Nokia, have established research and development units requiring serious ‘grey matter’ in Hungary. As a consultant at these companies, I have observed that it is not enough to be innovative – the management of development is also needed.

Actually, project management is a strange combination of science and art, and at the same time the background of the realisation of new ideas. At most companies some degree of competence is applied to the management of projects. However, the understanding of managing an innovation project is not always so obvious. Innovation involves the development of new or improved products or services, the launching of new business models and new manufacturing practices. Innovation management is essential at each stage of an innovation project in order to have a cost-efficient product that performs its planned function.

## 2. Projects on the innovative scale

Research, development and innovation are unique, special and difficult tasks which have specific aims, a more or less determined deadline and general budget. We have to handle these activities as projects, because a project can be defined as a one-time, complex task for the organisation with a determined aim, available budget and time frame for performance (Görög, 2003). We can examine projects in several dimensions, one of which is their innovation level. Every project brings something new, and has some risks as well. The projects vary widely in their degree of innovation. The project and project manager using the best-known solutions, methods and equipment stand at one end of the spectrum. Close to this extreme may be a recurring project, one that a project manager can carry out repeatedly. An example is the building and integrating of a network for a company with experience or under the direction of an experienced project manager, or the installation of computers for a new application. Although we can find these projects at this end of the innovation scale, this does not mean that they are free from risks and that regulations are not needed, as unknown factors can occur in a routine, every-day project as well. In projects of this type, the company, the project manager and the sponsor expect the minimizing

of costs and suppose – on the basis of previous achievements – that a previously elaborated plan exists. At the other end of the scale, where a really innovative application can be found, the realization of a creative idea could be a new phenomenon in the world. The risk of the project and the expected standard of its management will be different where work is project oriented, and it will be different where starting a project differs from everyday tasks.

**Table 1.** Examples of different projects in the light of innovation level

	<i>Low innovation level</i>	<i>Significant innovation</i>
<p><b>„Business as Usual” – (not project oriented) company</b></p> <p>For example, companies working in the field of manufacturing mass electronic products</p>	Relocation of production capacity from another country.	Research project on noise reduction of vacuum cleaners at a vacuum cleaner factory
<p><b>Project oriented organisation</b></p> <p>For example, companies working in the field of computing</p>	IT network installation in a big shopping centre	The development of a new mobile paying service

It is useful to understand the models and differences between projects representing incremental, low innovation level and those expressing radical, high innovation level. This understanding can help in the use of appropriate project management techniques, and can cut down on the time needed for radical innovation as well as reduce cost and uncertainty. A high uncertainty level is the hallmark of radical innovation projects, especially at early stages. A set of criteria to evaluate a radical idea must be distinguished from criteria used at a low innovation level. High innovation level projects are coupled with high uncertainty; examining these from the view of ordinary project management and using traditional project evaluating methods can create a false feeling of safety or lead to the rejection of great ideas.

### 3. The shaping of the scope of the term innovation

Though some years ago innovation was considered an activity controlled by the development of technology and science, today it covers a much wider area. Innovation may be best defined as the exploration and exploitation of new things during the search of competitive advantage. The Oslo Guide defines innovation in the following way: “An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organisation or external relations” (Oslo Manual, 2005). Figure 1 shows the types of innovation according to this approach. It can be seen from the definition above that, although many organizations – those cooperating in R&D tenders are among them – still can’t accept it in Hungary, the world of innovation projects has moved beyond the innovation of product and technology. This was formulated by Matthias Kaiserwerth, director of the IBM research laboratory, Zurich in the following way: “We’re moving from developing product functions to developing value for customers, and moving our business from information science to services science. This means moving from a proprietary intellectual property (IP) model to a well-balanced IP model, and from product-focused innovation to multifaceted innovation.” (EIRMA, 2007)

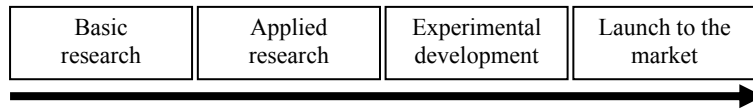
**Figure 1.** Types of Innovation

Product Innovations	Process Innovations
Marketing Innovations	Organizational Innovations

Source: *Oslo Manual, 2005 p. 34*

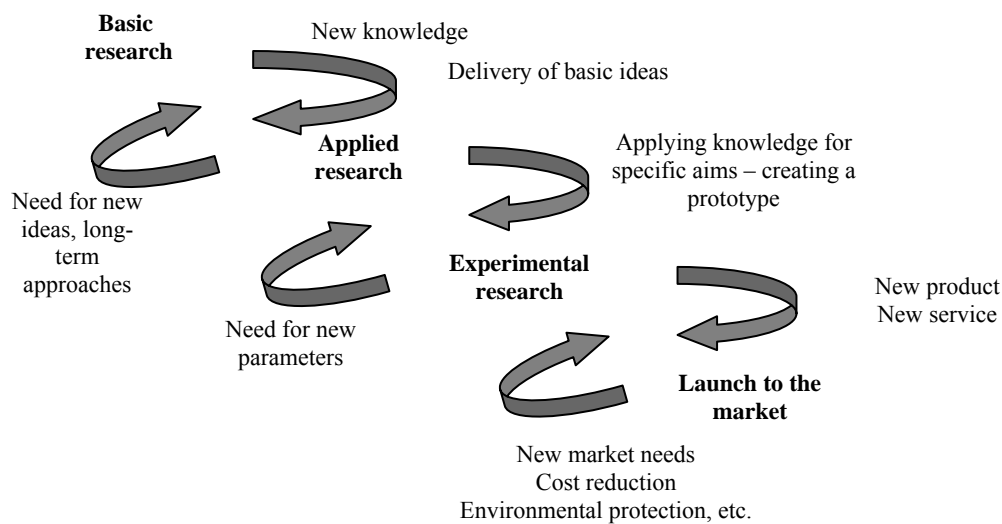
Earlier the experts of innovation management demonstrated innovation with a linear model, as shown in Figure 2.

**Figure 2.** The linear innovation model



The process of innovation is changing as well. While it was once a clearly defined project process in which companies developed their knowledge and used it to create products for sale, today it is a complex network which connects companies with their competitors, practice with theory, businesses with academic approaches. Therefore, a non-linear innovation model can better demonstrate innovation.

**Figure 3.** The non-linear innovation model



Source: Balogh, 2007

## 4. The Features of Innovation Projects

### 4.1. The Possibility of Failure

Working in projects demands real teamwork, but each individual performance, no matter how excellent, does not necessarily lead to the required results at the organizational level. Projects always carry uncertainty in themselves. Though risk analysis is an important tool of project management, several unforeseen problems can occur during the project. Innovation project teams have high responsibility, as there is a possibility of failure while discovering new areas. So the teams are involved more actively in risk management with the existing possibility of failure. "Innovation teams are more actively involved with risk management and need to learn to fail fast and fail smart in order to move on to more attractive options." (Wycoff, 2003).

### 4.2. "Dolphin Projects"

Many enterprises start an innovation project because of external or internal pressure, and there is no prepared organizational basis for innovation. Such projects "die" many times; they typically restart before ending up successfully. Martin Navratil, chairman of Synpo, calls them 'dolphin projects', since they keep re-emerging. So

most of these ideas are not new, but the background needed for these projects is not available the first time, second time, etc.

#### 4.3. The Frequent Change of Project Scope

Similar to shooting running wild animals, innovation projects often face the problem that dynamic markets and innovative thinkers induce changes in the extent of projects as they progress. In addition, innovation projects usually start in a less defined way, occasionally with distant aims which crystallise with the progress of the project. Such capacity is needed for an approach applied to innovative projects which is able to accept – even encourage – the idea that at the start of the project the required product can stand dynamism or risk, and both the product and manager are able to adapt to the changing requirements.

#### 4.4. Internal Project Marketing

Innovation projects should be sold to the stakeholders within the company and to those who are supporters in other cases, for example to sponsors or to the members of the committee supporting the project. This task is not as essential for normal project teams.

#### 4.5. The Problem of Life Cycles

A basic mismatch of life cycles can happen between R&D projects and companies. “Average lifetime of an R&D project is 10 years, and of a company in the S&P500 listing is 12 years – so, on average, new R&D projects cannot be expected to finish within the lifetime of the company that funds them.” (Christoph Rytz, in EIRMA, 2007). This also means if the innovation project can be connected with SME, a new R&D project cannot always be finished by the same company. It is typical of larger companies that, if the manager has been staying in his/her position for three years on an average, and if he/she was the leader of the innovation project, work could slow down or stop.

#### 4.6. Conflicts of Interest

It is frequent that conflicts of interest can be found in innovation projects because of the participants’ mentality. This is especially true if full-time researchers of academies, universities and research centres work together with corporate innovators. These interests and conflicts of interest are shown in Figure 5. Nevertheless, in the case of industrial and academic sectors, a connection is formed and strengthened through cooperation, for example through common research or spin-off companies. This leads to financial and professional pressure not only for universities, but for both parties. Because of this pressure, the attitudes of researchers and entrepreneurs will become more similar in the future.

**Figure 5.** Interests and Conflicts of Interest in Research Projects

<b>Researchers’ Interests</b>		<b>Companies’ Interests</b>
Basic research or applied research takes priority	↔	The need for experimental development and launching on market
Meticulous, thorough research	↔	Quick market appearance
New research result	↔	New product or service
Publication of new research results	↔	Monopolizing new research results and keeping them secret
Meeting academic requirements	↔	Compliance with official regulations
Excellence, fame	↔	Market share and making profits
Researchers’ freedom	↔	Influencing the way of research

#### 4.7. The Conflict of Time and Creativity

Creativity cannot be planned but can be forced into time limits. When writing a piece of software or designing a system; the time and space necessary for creative thinking is difficult to predict, but a time limit 'sharpens the mind' and provides that the brainstorming ends at a given point and the development of evident output starts.

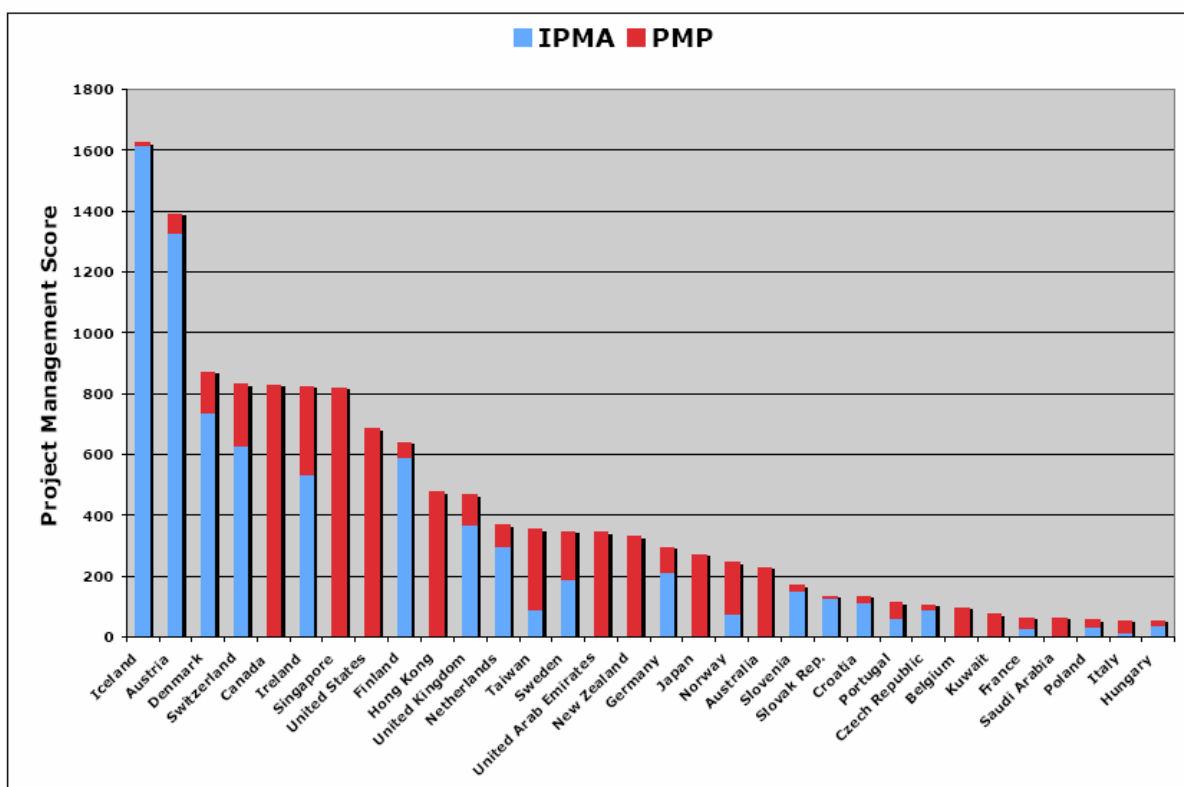
#### 4.8. Financing Questions

It is a feature of the financing of innovation projects that, aside from internal sources and bank credits, there is an opportunity in European Union to involve external sources, like risk capital or grant sources. Currently we can rarely meet risk capital companies, but in the near future there may be such companies and sources in greater numbers. Enterprises are often wary of financing projects partly from grants due to the difficulties of winning them, the occasionally illogical bureaucracy connecting to their realization, the difficulties of drawing on funds and the possible project financial imbalance arising from this. So they leave these sources to full time 'l'art pour l'art' applicants.

### 5. The Relation of Project Management Culture and Innovation Performance

We can ask the question: is there a relation between the level of project management and innovation performance? In their article Kavanagh and Naughton analyse the relation between management culture and innovation level (Kavanagh-Naughton, 2009). They correlate the number of inhabitants of the examined countries to those who have PMP and IPMA (International Project Management Association) certification given by PMI (Project Management Institute) to measure the project management culture of the countries. The ranking created in this way can be seen in Figure 6.

Figure 6. Project Management Score by Country

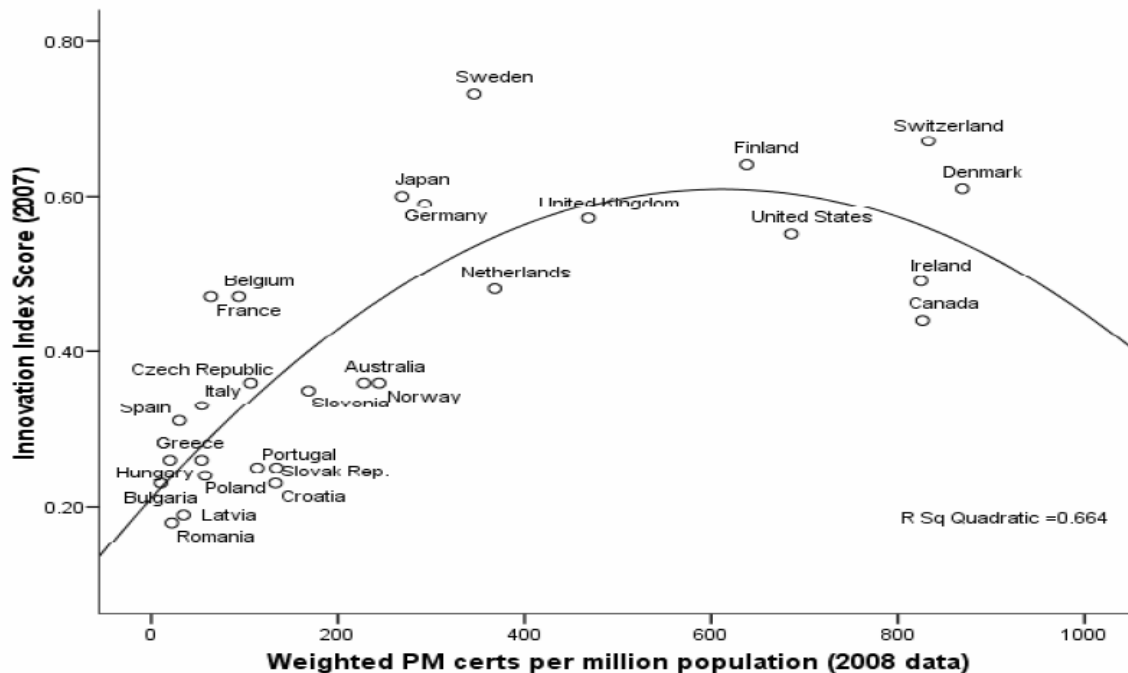


Source: Kavanagh-Naughton, 2009 p.3

In my opinion, the accuracy of measuring the project management developing level only by this indicator can be questioned, because other project management training methods should be considered (if we consider only the

certification and ignore those project managers who have experience without any degree). Still, the relation between the measured data of project management level in development and the Innovation Index, which involves 25 different indicators and was accepted by OECD, is conspicuous in the comparison outlined by the authors. During their statistical analysis, the authors determined a relation mainly described by a U-curve, illustrated in Figure 7.

**Figure 7.** Innovation versus Project Management Score



Source: *Kavanagh-Naughton, 2009 p.4*

It can be seen that the growth value (approximately up to 600 certifications per million population) of project management evaluated in the way is in correlation with the value of innovation index. This relation may suggest to project managers, project management trainers and researchers that their profession has a significant effect on the innovation of the given country, its efficiency and the development of the country.

## 6. Summary

As has been learned worldwide by R&D divisions, innovation is not limited to “the appearance of a genius”, rather it is the result of strict, systematic processes which reliably create new products and services (Freedman, 2009), from nano-technology to the development of new vaccination, or the establishment of new mobile services. Innovation can be involved in a system or run as a project; it promotes creative freedom while it is generating new results. The appropriate management of the projects is essential for innovation. On the other hand, officially accepted project management practice can set back innovation, as by covering the standard techniques it may oppress the creativity needed to innovation. So those features must be considered which distinguish innovation projects from other projects.

If we accept that the competitiveness of a country depends on the increase of efficiency, to which innovation takes us closer, it becomes obvious to us that project management has a key role in the achievement of fundamental changes.

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