

PM WORLD TODAY – FEATURED PAPER – APRIL 2009

Innovation & Project Management - Exploring the Links.

*By Dr. Donncha Kavanagh,
and
Ed Naughton*

If innovation was traditionally seen as technology-led, it now covers a much broader canvas. Innovation is possibly best defined as the exploration and exploitation of new ideas in pursuit of a competitive advantage. The pressure to be competitive drives innovation across the range of business practices, and, conversely, innovation is a key driver of competitive advantage.

Innovation is not necessarily about big-bang, major breakthroughs. More often it is incremental and built on the day-to-day expertise of employees and their thorough knowledge of customers and competitors. For them, innovation is often about making non-technical adjustments that have significant customer impact with correspondingly little cost.

Examples of such “adjustments” include the development of new or enhanced products and services, the introduction of new business models - shorter lifecycles to get product to market - and new work practices. These “adjustments” are in essence projects that must be exploited /managed and brought to a successful outcome. Framed in this way, the proper management of projects, through project management, is vital to innovation.

But from another perspective, formal management practices like project management might hinder innovation by imposing standard techniques that stifle the creativity needed to innovate.

In this article we report on a study into the relationship between project management and innovation. To avoid the problem of trying to generalise from a small-scale survey or from case studies, we took the nation as our unit of analysis. Thus, we asked if nations that use project management are more innovative than those that do not.

Project Management Score Index

We used the level of project management certification as the best available metric of the concentration or intensity of project management practice in various countries. It is important to distinguish between project management education and professionally accredited project management certification. Accredited certification is a reflection of application competence while education focuses more heavily on the acquisition of knowledge. If formal project management methods are applied extensively in a country then that is likely to be reflected in a high number of project management certificates issued.

The two most respected and globally recognised project management certification organisations are the Project Management Institute (PMI) based in the USA, and the International Project Management Association (IPMA) headquartered in Zurich, Switzerland. Together they have certified in excess of 400,000 project management practitioners.

Our analysis examined live and projected certificates on the registers of the PMI and the IPMA for 2008.



IPMA Certification Model

IPMA award four levels of certificate, A, B, C and D and we weighted these as 4, 3, 2 and 1 point respectively.

While PMI has recently also moved to a four tiered certification structure, some 98% of its certificates have been awarded at one level only known as PMP (Project Management Professional) which we weighted as 1.5 points.

Aggregating the weighted number of IPMA and PMI certificates and dividing this by each country’s population gives a good indicator of the intensity of project management certification in a country. This is called the project management score. The higher the project management score, the more project management is practiced in a country

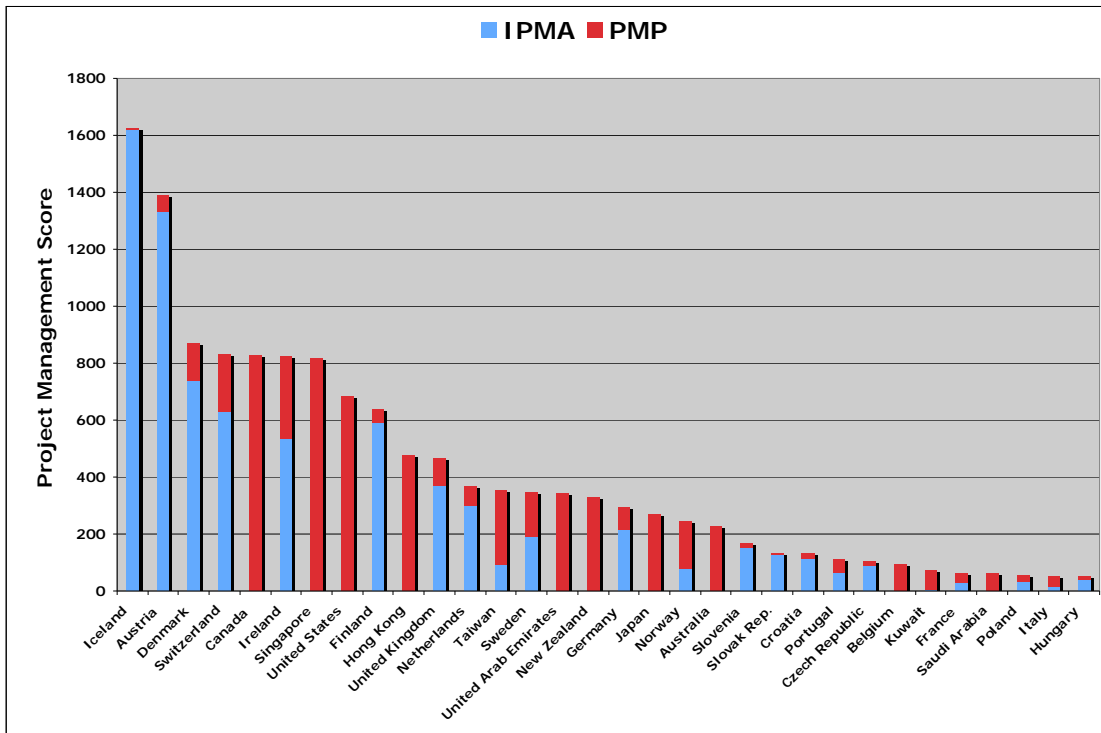
Figure 1. Calculation of Project Management Score for Ireland

Certification Body	IPMA						
	Certification Score	Level D	Level C	Level B	Level A		
		1.0	2.0	3.0	4.0		
Certification Body	PMI - USA						
	Certification Score					PMP	
						1.5	
Country	Ireland (population 4.0 million)						
	No. of Certificates	900	550	50	3	875	
	Score	900	1100	150	12	1313	3475
Project Management Score							869

Conducting this analysis also provides an interesting view of the geographic distribution of the two credentials and their relative weighting by country. While North America (USA and Canada) are dominated totally by the PMI credential, Europe exhibits a bias towards IPMA certification. Countries like China, India and Brazil are experiencing significant growth in certification, but because of their large populations they barely register on the **project management score** index.

Using this metric also illustrates that while the PMI –USA is the dominant brand name in the project management certification market, on a national comparison basis countries such as Switzerland and Denmark have similar project management scores.

Figure 2 Project Management Score by Country



Innovation Index

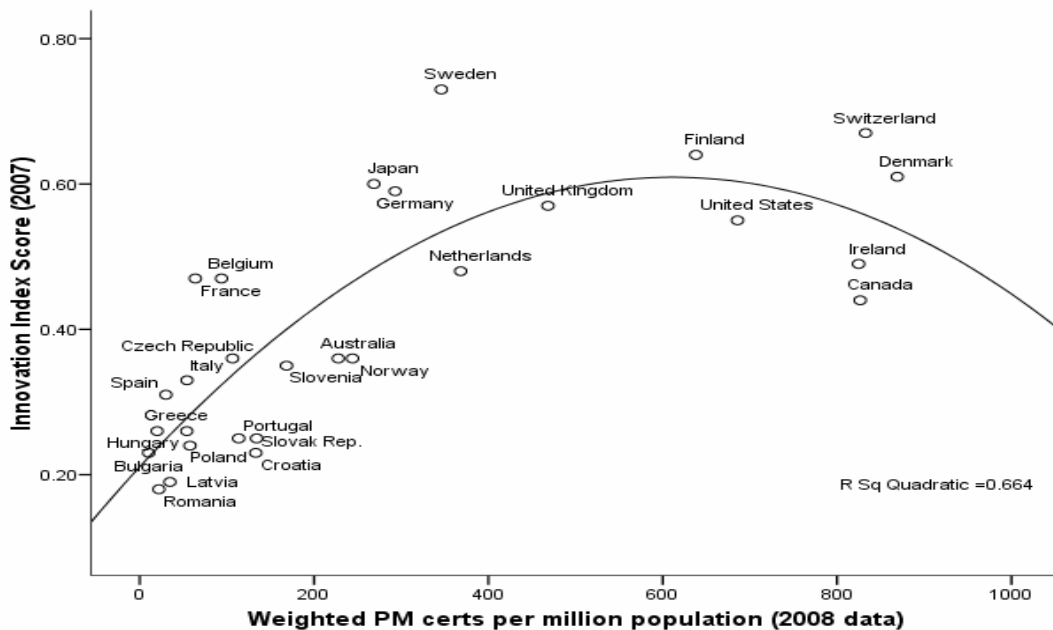
The European Innovation Scorecard (EIS) is a well-known and well-regarded instrument that compares the innovation performance of 37 nations, including the 27 EU member states, the US, Canada, Japan and Australia. The project is funded by the European Commission. Countries are assigned an overall innovation score through aggregating 25 innovation indicators. The scorecard produces a rich source of comparative data. In the latest 2008 survey, Ireland is ranked 12th in a list book-ended by Sweden and Switzerland at the top and Turkey and Romania at the bottom.

Comparison of Project Management and Innovation Indices

This provides two scores for each country - the innovation score and the project management score - which we can plot on a scatter diagram (figure 1). So, for instance, Ireland has a project management score of 869 and an innovation score of 0.49.

Statistical analysis of the data indicates that the relationship between project management and innovation is best represented by an inverted U-curve. The analysis also shows that, when three outliers are eliminated, the U-curve accounts for 66% of the variability in the data. This is a quite remarkable result given that the innovation score is aggregated from 25 different indicators.

Figure 3 Innovation v Project Management Score



Analysing the data shows that increasing levels of project management are correlated to increasing levels of innovation - up to a point (about 600 certs per million population).

Supporters of project management would not be surprised by this finding. After all, project management is a set of techniques to effectively manage change, and change is practically a synonym for innovation. Hence, it is maybe to be expected that there will be a positive correlation between project management and innovation. This, however, is compelling evidence that supports this intuitive expectation.

However, very high levels of project management are correlated with decreasing level of innovation performance. One interpretation of this is to recognise that innovation is both the exploitation of existing knowledge and exploration in search of new knowledge. Formal

project management approaches may facilitate the former and perhaps hinder the latter. One can indeed get too much of a good thing.

Recent studies by the London School of Economics and Stanford also found a remarkably strong relationship between the standard of management in a country and productivity. The management practice index which they used amalgamates practice in relation to operations, the recruitment, development and incentivisation of people, and the cascading of targets and goals throughout the organization – the latter two being at the very heart of project management.

Globally, the research indicates that when the standard of management is rated on a scale of one to five, a one-point increase in management standard is associated with an increase in industrial output equivalent to a 25 per cent increase in labour, or a 65 per cent increase in capital.

If we accept that national competitiveness depends on improvements in productivity, and that innovation is a key component of productivity, then our understanding and response to the key role played by project management has to change fundamentally.

A nation's ability to build and sustain its innovation capacity depends on developing and maintaining project management skills at world-class levels, on high-quality, education (not just painting by numbers) and on the best professional accreditation in the discipline.

About the Authors:***Donncha Kavanagh, PhD****Author*

Dr **Donncha Kavanagh** is Senior Lecturer in Management at University College Cork, Ireland. He has obtained degrees from University College Dublin, University of Missouri, and Lancaster University and has published in the fields of management, marketing, organisation studies, and engineering. His research interests include the history and philosophy of management thought, pre-modern and postmodern modes of organizing, and the sociology of knowledge and technology. Donncha can be contacted at d.kavanagh@ucc.ie. Vita and full list of publications are at <http://www.ucc.ie/en/mgt/Staff/Lecturers/DrDonnchaKavanagh/>

About the Authors (continued):**Ed Naughton***Author*

Ed Naughton, BE, C. Eng., F.I.E.I, IPMA-a, PMP, is the founder and Director General of the Institute of Project Management of Ireland, the leading authority on the PM profession in Ireland. He is also an International Correspondent for PMForum and *PM World Today*. Ed is a former Vice President of the International Project Management Association (IPMA). Ed has researched, published and presented many articles and papers on project management and is the author of the Irish Project Management Competence Baseline. During his thirty year career, Ed has worked as a project manager and/or project management consultant on a large variety of high profile domestic and international assignments. Ed Naughton is a graduate of University College Dublin (BE, civil), a Fellow of the Institute of Engineers of Ireland, a Chartered Engineer (Ireland), a Professional Engineer in Canada, and holds IPMA Level A certification. He is former editor of the quarterly international publication "Project Management Practice". Ed lives in Dublin and can be contacted at info@projectmanagement.ie. Additional information about Ed Naughton can be found at www.projectmanagement.ie.