

21ST CENTURY PROJECT MANAGEMENT = OPEN SOURCE BODY OF KNOWLEDGE

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S. Jonathan Whitty BEng(Hons) PhD
Faculty of Business, University of Southern Queensland, Springfield, Australia

ABSTRACT

By considering the literature relating to the application of evolutionary principles to the practices and artefacts of modern project management, this paper sets out an argument for an open source body of knowledge for project management.

Practitioners and academics alike are challenged to rebuild and develop their profession by rethinking project management in the light of evolution. Whilst acknowledging that we in the Western corporate environment are inextricable from the project management practices and artefacts we are driven to produce, this paper argues that it is imperative that we intervene in the developmental process of the project management body of knowledge and engineer it to become more open, equitable, and domain specific.

Keywords: Body of Knowledge, Open Source,

INTRODUCTION

The ideals of the reformation and the enlightenment still influence the values of modern project management (Whitty & Schulz, 2007). In the 19th Century evolution was seen as 'potential' and regarded to be the unfolding of a predestined outcome (Comte, 2002; Maine, 1861; Morgan, 1877). Today modern project management still takes this predestined 'follow the Gantt chart' approach to work. With their origins rooted in the late 19th Century, the Eugenists of the 1920s took their better baby and fitter family contests to country fairs to promote the biological and social traits that they believed should be endorsed and allowed to progress (Pernick, 2002). Today in a similar manner, almost every project management professional association presents their awards for 'best project manager' or 'best project' at their annual conferences and these activities implicitly and explicitly endorse particular behavioural traits and pressure practitioners to conform. Since the 19th century the goals of professional associations have been to monopolise their authority, bestow privileges on their membership, assert their legitimacy to certify a skill or intellectual knowledge base, and expand their boundaries into the domains claimed by other professions or occupations (Gieryn, 1983). Today, one might conclude by observing the behaviours of the various project management professional associations that not much has changed. Even the 19th century myth of the primitive society (Kuper, 1988) has surfaced in the debate of complex project manager vs. non-complex project manager where the former have a greater prestige than the latter (Whitty & Maylor, 2009). We need to move beyond this 19th Century way of viewing and rewarding project work to a way of viewing project management as a process of cultural change, where change in the work realm can be re-engineered through project management.

In this paper I set out an argument that proposes a new philosophy for 21st century project management that is founded on the principle that its body of knowledge (BOK) is open source and domain focused.

I begin by rethinking project management in the light of evolutionary principles. This not only provides a new framework for enquiry, it also provided a basis for re-engineering project management. I then discuss some of the historical drivers that have steered modern project management towards a 'discipline' mindset that has had a significant impact on its body of knowledge (BOK). Finally I offer an alternative philosophy of project management that is compatible with evolutionary principles, more in tune with our present values of transparency and equality, and has more meaning and application to the various domains of work.

BACKGROUND

There is an evolutionary line of argument that is underpinned by some experiential evidence that presents the case that the various practices and tools of modern project management in common use today have come about by reasons more complex than simply because they enable project managers to be productive and deliver projects successfully.

Considering this evolutionary standpoint, modern project management has developed in the way it has for various reasons. Principally among them is that some of its practices, tools, and techniques are easier to replicate (copy and pass on) than others (Whitty, 2005), some

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create a cultural advantage (e.g. secure jobs and contracts) for both individuals and corporations (Whitty & Schulz, 2006), and some create an emotional affect (e.g. feelings of being challenged, organised, and in control) which project managers and their supervisors find appealing (Whitty, 2010).

One might say that we have been duped or perhaps more poetically speaking romanced by some aspects of modern project management, and as such there are two matters I believe we should be concerned about.

1. That modern project management still teaches us to view and reward project work in a very 19th Century manner.
2. That the present project management bodies of knowledge are evolving in a particular manner that is unchecked, and this has significant consequences for our work, our organisations, and us as individuals.

Both these matters provide a platform from which to mount an argument for a fundamental rethink of how we build our evidence-based knowledge of project management.

RETHINKING PROJECT MANAGEMENT IN THE LIGHT OF EVOLUTION

Evolutionary thinking is still rather radical when compared to the mainstream disciplines of psychology and sociology of today, which still appear to ask for a special exemption for humans. Dennett (1995) calls evolution “Darwin’s Dangerous Idea” because it was such a monumental shift in the way people would see the world.

At its core, evolutionary thinking requires one to invert the traditional top down approach to human social structures. Traditionally, social structures are considered with meaning and purpose at the top, with design, structure and artefact below. Evolutionary thinking requires us to invert this structure with a bottom-up approach that argues that as social structures and artefacts emerge, the human brain attributes meaning, purpose, and design to them.

If one applies evolutionary thinking to the phenomena of project management, human social structures and artefacts (e.g. organisations and project management processes and tools) emerge as a consequence of the process of biological and cultural selection (Whitty, 2005), and these have been attributed meaning and purpose by the human brain which consequentially further drives project management behaviour (Whitty, 2010).

The underlying ethos of project management appears to be a relatively stable concept which has bootstrapped itself to our hardwired traits to organise and our Western cultural values, and utilised various Western cultural mechanisms (e.g. professional associations) to replicate (Whitty & Schulz, 2007).

The behaviour we observe to be modern project management is more than a cultural whim as the fundamentals of its organising techniques have been part of our cultural practices for many thousands of years. In a sense, as I discuss next, we humans are literally built (by various methods of selection) to manage project work. To add to this complexity, some of us are drawn to the various experiences involved in managing projects (Whitty, 2010). Furthermore, the particular techniques, practices and artefacts, which could be associated

with modern project management today, do not remain in use only because of their work production capabilities. Some remain in use because they are easy to replicate and quick to explain, some because their use can create a cultural survival advantage for individuals and organisations, and some because they enable those who are exposed to them to obtain a physiological 'fix'. To complicate matters further, in their quest to develop a professional discipline, the project management professional associations have canonized these techniques, practices and artefacts into their various BOKs. And there they remain; their legitimacy unchallenged and their doctrine imposed on all who wish to manage projects.

Built for project management



Figure 1: Beaver Dam



Figure 2: Human Dam

Animals are inextricable from the artefacts they produce (Hansell, 2007). This point, I suggest, should be clearly extended to humans and their work, particularly projects and project management. Consider Figure 1 and Figure 2. On the left, a dam built by Beavers, on the right a dam built by Humans. Just as the log dam is an extension of the Beaver as the dam is encoded in the Beaver's genes (Hunter, 2009), so too is the modern dam an extension of Humans as the dam is encoded genetically and memetically across our genes and culture. We humans, given certain environmental and geographical circumstances, have a propensity to build. Our culture, values, ideals, and technology, powerfully influence the nature of what we create and build and the manner or methods we adopt to perform those tasks. Modern project management is a product of Western cultural values and ideal, built on top of a predisposition to create and build (Whitty & Schulz, 2007).

Drawn to project management

Extant project managers from various domains of work appear to be drawn to aspects of project management (Whitty, 2010). Not only do they find enjoyment in some parts of their role as project manager, but they actually seek out or forage for project work because they receive a physiological 'fix' from it (Whitty, 2010). What is particularly interesting about these findings is that there are many parallels between the emotional affects of project work and the emotional 'flow' affects one receives from computer gaming (Whitty, 2010). I suggest that the addictive nature of these moments of flow in project management will necessarily impact on how the field evolves in the future, as practices and tools have the potential to be selected more for their 'fix' value rather than their ability to deliver projects successfully.

The topic of projects and project management features modestly across all the major scholarly management and organisational journals (Söderlund, 2004). One might say that there is an addiction to project management across all business sectors and geographical regions. Until recently, but some might argue this is still the case, the most prevalent body of knowledge proposed for project management was that of the Project Management Institute (PMI), which it sets out in the institute's self-published *Guide to the Project Management Body of Knowledge* (PMBOK® Guide) (Project Management Institute, 2008). Other project management associations have produced their own versions of a body of knowledge for project management. See (Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006) for a summary on how the small variety of BOKs have emerged from the various project management professional associations. However, if one is to apply evolutionary thinking to the emergence of these BOKs one must consider the question - what drives BOK creation in project management?

On this matter, Morris et al. (2006) argue that the various BOKs play a supplementary role in promoting the field, and that all of project management's professional associations, consultants, gurus, consumers (those who buy into project management services such as consulting, training, standardisation and certification), and academics and researchers all have a self-serving vested interest in creating and maintaining a body of knowledge for project management. If 'bottom-up' evolutionary thinking is applied to this situation, one sees that it is the BOKs that are now creating the project management associations, consultants, gurus etc (Whitty, 2005). Furthermore, akin to the dams in my previous example, artefacts of project management such as the PMBOK® Guide are inextricable from the domains of work from which they were born. As an example, consider artefacts such as the PRINCE2 model and Agile development. The former is an approach to deliver projects that is born out of the highly structured environment of the UK Government. The latter is a developmental approach pioneered by programmers (who are notorious for disliking documentation) that more closely relates to their emergent work patterns.

In summary, although project work is literally a part of us both biologically and culturally as it gives us real survival advantage in a particular cultural environment, and can provide those involved with various physiological 'fixes', we must acknowledge that each domain of work (e.g. health, arts, sciences, education) is capable of evolving its own methods for managing projects if given the freedom to do so. I suggest there is a moral obligation on all scholars and practitioners of project management to enable these domain specific methods to emerge.

Furthermore, an emergent property of allowing the professional associations of project management to be the conservators of the BOKs and methods for managing projects is that the BOKs become canonised in the pursuit of creating a professional discipline (Morris et al., 2006), and scholars and practitioners become confined by them (Whitty & Schulz, 2007). Practitioners and scholars should be equally enabled to continuously and transparently contribute to the project management BOK.

So how could each domain of work be enabled to develop its own BOK for project management? Before answering this question and suggesting a return to a domain focus, it is important that we understand how project management has become a discipline.

DOMAIN VS. DISCIPLINE

The story of the modern manager begins in America at the beginning of the 20th century as businesses expanded into complex corporations. As corporations became larger and more complex, so did the ranks of middle management. At that time there were possibly three career tracks for upper level and senior managers (Jacoby, 2004).

1. To come up through the ranks of the organisation
2. To come from engineering as there was a boom in engineering education and graduates in engineering schools made the transition into management
3. To attend some undergraduate college and major in business.

This was the era of 'the company man' as most managers at this time tended to stay in the same company, or at least stay within the same industry (Jacoby, 2004). One of the strengths of this behaviour is that people obtained domain knowledge (Sennett, 2006).

Businesses today are run by 'professional' managers. But it has long been argued that we should return to the days of where managers of businesses had some domain knowledge (Hopper & Hopper, 2007). That is to say that to run an engineering business, one doesn't need to be an engineer, but one does need to know a lot about engineering. At some point a shift from domain to discipline took place, and to find out how this shift was made it is necessary to understand a brief history of management education which can be divided up into three eras (Jacoby, 2004).

1. The earliest business schools in the United States such as the University of Pennsylvania and the Harvard business School all had curricular that were extremely engineering-orientated and based on ideas from industrial engineering at that time. This education was about a systematic method of management and coordination.
2. Later on from the 1930s to the 1950s, other subjects were introduced such as personnel psychology, human resources management, and marketing. A lot of what was taught was practical knowledge as there was not a lot of research being done, and business education did not have a very high status on University campuses.
3. In the late 1950s, MBA curricular were revamped and business schools increased their research output. To that end, business schools took a more rigorous approach to management research and directed that research should be founded on the principles of economics, statistics, and operations research which could be considered to be a form of applied engineering, a precursor to project management. These principles were applied to discipline areas such as accounting, finance, and marketing, which made them less practical and more research orientated.

A by-product of this last era is that whilst intellectual output increased, the relevance of research to companies diminished (Harmon, 2006). Another by-product of this behaviour was that managers became more specialised and more intellectualised than they had previously been (Jacoby, 2004). Rather than being 'a jack of all company trades',

increasingly managers saw themselves as a marketing or finance person. Moreover, these new intellectual managers had greater career mobility because a detailed knowledge of one's company business was not necessary, and it was easy to move from company to company and climb the corporate ladder at greater speed than before (Dewhurst, 1991). Simply put, the modern MBA structure that emerged from America is based around the idea of teaching engineers general business skills, and this 'disciplined' management thinking was further fuelled by the rise of management consulting firms (Hilmer, 1985).

The two key features of the modern professional manager are mobility and specialisation (Dewhurst, 1991). They are no longer generalists, rather specialists in marketing, personnel, finance, and projects. Many project managers and their professional associations regard themselves as specialists (Hodgson, 2002). However, other management disciplines have yet to recognise this (Morris et al., 2006). As part of the evolution of the specialist, there has been a knowledge trade off, where previously the managers' knowledge was about a single company or industry sector versus today's situation, where managers' knowledge is about their specialty with little understanding of their domain or industry sector or the particularities of the company and its customers (Sennett, 2006).

The growth of the short-term institutional investors has put more pressure on corporations to improve their share price (Sennett, 2006), and this has driven senior management to be recruited from finance rather than engineering or law. Many recruitment advertisements today require so called 'program managers' to have a sound background in finance. Consequentially businesses are being reconceptualised as a collection of numbers or financial assets, and this new breed of senior managers understand how financial markets work and can co-operate with shareholders to improve the rate of return on the company. This situation has laid the foundation for short-termism where the tenure of both manager and investor is short (Sennett, 2006).

In the 1990s the corporate West was in the era of strategy, and project management was seen as strategic (Fulmer, 2000). Today, we could be considered to be in the era of finance (Fontela, 1998), as all project managers are expected to view the progress of their projects in terms of its Earned Value (Kerzner, 2003).

DEMOCRATISING PROJECT MANAGEMENT

The manner in which I propose a democratisation of the workforce through project management is thankfully more sophisticated than mobilising the workforce to vote on every decision. My proposal involves four basic principles; a bottom-up approach to decision making, a horizontal domain view of project management rather than the current hierarchical 'we strive to attain the one best way' discipline approach as previously described, an open-source approach to building a body of knowledge, and a culture that celebrates anonymous reporting. The bottom-up approach to decision making can be realised by returning to an older style of management that was focused on creating value for the client via an ongoing consultative process (Winter, Smith, Morris, & Cicmil, 2006). The domain view of project management can be realised by reconceptualising project management to be a domain specific activity, and this could be achieved by enabling an openly contributable body of knowledge for project management which includes a

mechanism for practitioners to confidentially share and disclose their project mishaps or near misses.

Domain specific project management

To engineer project management to better embrace the various domains of work and more directly influence the product or deliverable of the project by simply attempting to add more language to the project management lexicon is not realistic. What is needed is a re-conceptualisation of project management into various domains such as health, arts, sciences, engineering, technology, education, agriculture, and so on. Once project management is 'let loose' in domains such as these it will consequentially pick up the terms and language of the domains, which will in turn integrate it better.

Open source body of knowledge (OS-PMBOK)

Open source means so much more than being free to access. The call for the PMBOK to be made free is not new (Giammalvo, 2007). However, I suggest that there can be an Open Source Project Management Body of Knowledge (OS-PMBOK) which can be enabled by collaborative technologies to evolve openly and transparently and be distributed freely. One way of commencing this activity is to follow an example much like that of the software development industry which has collaboratively developed a Manifesto for Agile Software Development (Beedle et al., 2001). This manifesto is a general statement of principles that the industry has informally agreed should underpin agile software development. A variety of representative bodies of the various domains could be involved in directing the development of the new OS-PMBOK. The various domains such as health, engineering, media and so on would develop their own 'knowledge libraries' which capture the concepts and practices that are pertinent to the management of projects in their particular domain. As Figure 3 shows, a knowledge library would be underpinned by its own source evidence which might comprise empirical research or case studies, the purpose of which is to transparently demonstrate the evidence based legitimacy of each of the features of the knowledge library.

Clearly the internet would be a good collaborative tool for distributing and contributing to the OS-PMBOK with elected representative bodies having oversight of the process of building each knowledge library. Everyone would have access to the knowledge libraries and the sources evidence.

A feature (the component part of a knowledge library) can be submitted by anyone, along with source evidence, to one of the elected committees that has oversight of a domain knowledge library. Following a thorough review of the source evidence and the relevancy of the feature to the domain, the oversight committee reject or accept the feature into the knowledge library collection.

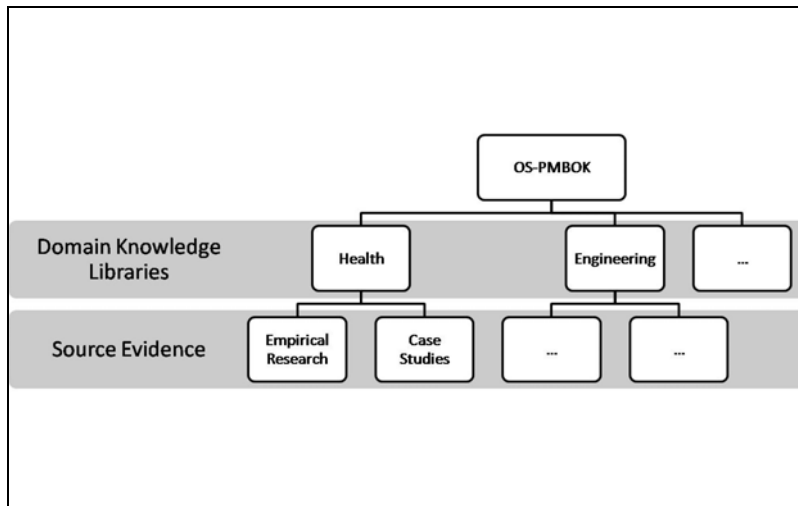


Figure 3: OS-PMBOK Structure

The benefits of developing knowledge material opening and distributing it freely can be found in Eric Raymond’s book “The Cathedral & the Bazaar” (Raymond, 2001) which contrasts the developmental styles of developing materials, software, and knowledge. I liken the closed Cathedral development style (with tight specifications towards specific goals and run in a hierarchical authoritarian manner) to that of the present development style of the PMBOK® Guide. Whereas the development style I am suggesting for the OS-PMBOK could be likened to the peer-to-peer, decentralised, or open market Bazaar style, with constant solicitation of feedback from users and peers.

Culture of anonymous reporting

The honest and frank input from users and peers would be an essential part of the developmental process of an OS-PMBOK. I suggest that a system should be put in place for practitioners to anonymously report project management mishaps or near misses such as those systems that are in place in the domains of aviation and public health. See Barach and Small (2000) for a description on how anonymous reporting has been implemented across various domains. The design and implementation of such a reporting system for project management practices is beyond the scope of this paper. However, such a system would significantly influence the education and engagement of all stakeholders in project management, and perhaps bring the concept and incidences of luck and serendipity to the fore of the discussion that informs the development of a free and open source body of knowledge for project management.

A place for the professional associations

The implications for an open source body of knowledge for project management will be significant for the current project management professional associations who control existing PMBOKs, particularly the PMI who hold the intellectual property to the current Guide to the PMBOK®. The PMI and others will need to abandon their ideals for creating a professional class of project managers. They could take a leadership role in the development and on-going coordination of the human and technological mechanisms that develop and maintain the OS-PMBOK and validate the source evidence of the various knowledge libraries.

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Their role might also be more like that of a vocational skills awarding body. As the various domain specific bodies of knowledge for project management emerge, the project management associations could have a place in developing and administering specific project management certification in conjunction with key industry bodies that represent the various domains. The project management associations will also need to establish new alliances with the academic community and lend support, cooperation, and channel industry funding towards evidence-based practice research.

CONCLUDING REMARKS

When completely embraced, an evolutionary mindset towards project management behaviour is liberating because it provides a platform from which to launch a revolution, to explore project management anew, and provide the foundations for a new transparent, equitable, and evidence-based philosophy of project management that will enable practitioners and scholars to turn management platitudes on their heads, to shift the balance of benefits towards humans rather than professional associations, and ultimately democratise the workforce.

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