

The trajectory of project management: why EPOS is important[†]

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This paper welcomes the pluralistic knowledge base represented by EPOS, it being particularly appropriate to our efforts to understand the knowledge needed to manage projects and programs effectively.

The paper charts the advances in our thinking about project and program management from the early a-theoretic NASA/DoE days, through a later period reflecting our growing recognition of the importance of managing the Front-End, then to the ‘Third Wave’ of managing the institutional context, whether internal or external, in which the project is embedded. Greater interaction between academia and practitioners is called for. EPOS is well positioned to run with these and similar initiatives.

Keywords: Future challenges, history, project management, theory.

Introduction: the need for an EPOS view

The Engineering Project Organization Society (EPOS) is in a wonderful position. It is young, pan-theoretic, and practical. Just what is needed to help make project management fit-for-purpose and relevant to today’s needs!

There are two major challenges facing project management today that I believe EPOS is particularly well placed to address: one, developing project strategies for dealing with the many complex and difficult societal challenges the planet is now facing—carbon emissions, floods, droughts, demographic upheaval, energy and infrastructure shortages, disease, and so on; two, helping select and apply the theories and tools that can best shape and implement these strategies. In this paper, I want to concentrate on the second of these challenges.

The discipline needs this help, for while it is generally accepted that project management has an important role in assisting business, government, parastatals, and others address what appears to be a frightening array of issues and challenges that are facing us, as a discipline it is still in many respects unsure of its identity and lacking, in a holistic sense, agreement on what its

scope, role and overall set of approaches, its opportunities and responsibilities, are.

For project management is a fractured discipline. ‘Invented not found’, it has been invented in several different forms. A ‘social construct’ reflecting several different social groups and settings, it has several different conceptual constructions. Does it, for example, include managing the shaping and development of the project in ‘the front-end’ or is it just about ‘on-time, in budget, to scope’ delivery; an ‘execution-only’ discipline? Is it just about monitoring or does it encompass a broader ‘managing’ role, and if the latter, what does ‘managing’ mean in practice? Being inherently practical, what is the place of knowledge in it? And, with respect to the knowledge element to it, what is its theoretical basis or are there several? Much of the scholarly work in project management comes from an organizational theory background: should not there be a more pluralistic approach? Why are not the professional societies’ bodies of knowledge aligned?

An academically based, practically orientated society such as EPOS ought to be in a strong position to help address these and similar such issues. To understand why, let’s look at the development of the discipline over the last half century or so to see how different

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theoretical approaches have been applied over the years. I can loosely identify three phases in the development of project management to date.

Phase I: systems thinking and organizational integration

Project management emerged as a formal discipline in the first half of the twentieth century, becoming articulated as a coherent discipline in the US missile programs around 1952–1955, later boosted by the US Department of Defense in the early 1960s and demonstrated with immense elan by NASA on the Apollo ‘Man on the Moon’ program (Morris, 2013). In the mid-1980s, professional project management societies part-formalized the discipline in their bodies of knowledge. (In PMI’s case, this meant outlining process methodologies for nine ‘knowledge areas’ (until the 2013 fifth edition when a tenth, Stakeholder Management, was added: PMI, 2013) rather than signposting or exhibiting any real theoretically based knowledge.)

Up until this point theory could hardly have been said to have underpinned the discipline: it was almost theory-free. What there was (systems thinking, operations research, and organizational integration) may have helped a few, but was not essential to its practice. In fact, most of the discussion about project management in the 1960s, 1970s, and even 1980s was about planning, scheduling, and budgeting. A little bit maybe about human factors, conflict management, and communication, and so forth, but basically, it was about planning or, more broadly, control. These days we hardly discuss planning at all (although many trainers and writers of project management guides still conceive the dominant p.m. activity to be monitoring and control). We have moved significantly on.

In the late 1980s and early 1990s organization theory (Galbraith, 1973; Mintzberg, 1979; Lawrence and Lorsch, 1967a, 1967b ; Thompson, 1967/2003) showed when and how different forms of integration might be required—essentially explaining the theoretical case for needing project management—the ‘single point of integrative responsibility’ as Archibald put it (1976). The early 1990s, however, saw the rise of the so-called Scandinavian School: ‘no project is an island’, ‘projects as temporary organizations’, and the suggestion that we should study the way people actually worked on projects to see what they really were doing rather than what they should have been doing. Rather than looking at the practices that people like me propose should be followed, the Scandinavian School looked instead at what is actually happening in the real workplace (Engwall, 2003; Lundin and Söderholm, 1995; Packendorf, 1996).

I have to say, parenthetically, that I have problems with this. Projects are obviously temporary organizations, but equally are generally embedded in bigger organizations which may not be temporary, as we will discuss shortly. Clearly, no project is an island: no organization is an island. Focusing on what people are actually doing really misses something vital if it does not identify what our good practice is. For I believe that there *is* a place for normative guidance, identifying what the organization expects good practice to be. One should obviously try and understand what is causing people to not follow good practice when they do not. But equally, one should not ignore this practice or omit communicating its characteristics and the importance of implementing and following it. After all projects may be responsible for the routine management of many billions of dollars; lives may be at risk: this is a serious business area. We cannot afford to work without rules.

Phase II: ‘the management of projects’

If stage one of project management’s development was either theory-neutral or organizational, stage two is more pluralistic, as could be seen from a range of critical success factor studies like the work I did with George Hough in the mid-1980s published as “The Anatomy of Major Projects” (Morris and Hough, 1987), which looked at projects as whole entities to determine what the factors are that cause problems. In the early twenty-first century, several other studies of a similar nature were published such as those by Miller and Lessard (2000), Flyvbjerg *et al.* (2003), Grün (2004), and Meier (2008) as well as the GAO (2006a, 2006b) and NAO (2004, 2005a, 2005b). These led to such an expansion of the field that I gave it a new name—‘the management of projects’ (Morris, 1994). Here, the project (or program) is the unit of analysis. There is more emphasis on the front-end definition phases—the way that the project is set up; the way that it relates to its environment, to the owner’s strategy; and to stakeholders’ interests. And of course with this broadening of scope the theoretical base expanded: no longer just about control and organization, it now acknowledged a place for, *inter alia*, governance, strategy, technology (engineering, HSE), commercial (marketing, contracting, procurement, risk, value, benefits), and people. This was a much more multi-disciplinary view of what one needs to do to shape and deliver projects successfully, with the project’s management providing a holistic, interdisciplinary, integrative role, managing the development, and delivery of the ‘whole’ project, from its inception to its completion.

Phase III: the institutional level

Project management's 'third wave', as Morris *et al.* (2011) and, separately, Morris and Geraldi (2011) have argued, is to address what Talcott Parsons termed the 'institutional' level. It is essentially about aligning projects both with their 'parent' organization and with their external environment. (The external environment may be social, physical, economic, legal, financial, organizational, or anything else.) Amongst the most important actors here are the projects' stakeholders—as we noted above, 'stakeholder management' has just been added as a tenth knowledge area to the PMBOK® Guide—and of these the sponsors is particularly significant. The sponsor—the holder of the business case—may prove to be one of the most influential people on the project yet he, or she, will typically have received the least exposure to the discipline. Supporting the project sponsor, adding value to his project 'business case' is, I believe, a major responsibility of project management.

Influencing, to the extent that one is able, the external context within which projects are happening can prove enormously important. In early 2013, for example, there were regulatory difficulties in Brazil leading to schedule delays on the Minas-Rio project, which led directly to the early departure of the Chief Executive of the Anglo-American mining company. External issues are not just important in large infrastructure projects: they are often critical for software projects, for defense/intelligence projects, and for many other types of project.

Working on the internal ('parent') environment—often called 'Enterprise-Wide Project Management'—can be equally difficult. Heretofore project management as a discipline has been seen as being about managing individual projects or programs. But now we need to be thinking about the capabilities—the systems, processes, training, etc.—that we have in the organization and how appropriate these are to the characteristics of current and up-coming projects. (And the impact of the environment that the project is, or will be, operating in.) Therefore, to develop appropriate project management you have to align variable project characteristics, together with a changing environment, with 'best-practice' models of project management capabilities and competencies which in their turn will need developing and enhancing. Then to complicate an already complex situation, the model is not static. Markets, technology, and people change. Forecasts are, therefore, required: of what the future environment, and future project characteristics are going to look like; of what that is going to do to your competencies and your capabilities; and how the required changes will be implemented so that they 'stick' and become 'Standard Operating Procedures'.

EPOS: a broader base

I want to suggest that this broader 'institutional' domain is one which EPOS members should be mastering. It may feel too unbounded, not robust enough to be a genuine academic knowledge area, with too many different epistemologies, but I contend that though it is complex and multi-theoretical, it is essential to understanding what we need to do to develop and deliver projects successfully. And that EPOS has potentially a special appropriateness in this since, despite this much broader base, contemporary scholarly interest in project management is still likely to come, in large part, from an organizational theory background. EPOS can use its added theoretical breadth to help establish the broader theoretical approach required by modern project management.

EPOS is, at a minimum, involved in 'hard' engineering environments, but is able to address these, as appropriate, from an organizational perspective. This mixing of theoretical approaches, of paradigms, has to be really helpful for the discipline. Engineering and organization theory are not always enough of course: we also need governance, strategy, commercial (e.g. law, economics, finance, etc.) and control, as well as organization, people, technology, design, etc. (Morris, 2013). But EPOS, given its existing theoretical pluralism, can take a lead in promoting this multi-theoretical approach though.

Future challenges

Finally, I would like to touch on three challenges, may be four, which I see facing today's world of the management of projects—of p³m (project, program, and portfolio management). The first two build directly off the 'third wave' discussed above: the institutional level.

Context

The first one is context and contingency. As we have just seen, project management professionals often need to influence the project's environment; shape, to an extent, the stakeholders, the regulatory regime, the choice of technology, and the project strategy. Gone are the days where we can say simply that organizations are affected by their environment and technology and that we need therefore to adopt a reactive contingency view of organizational design. Theoretical approaches such as Giddens' structuration theory (1984), institutional theory (of several researchers but see Scott, 1995), and Geels' transition theory (2004), for example, add to these knowledge areas to help us understand how we can do this. The work that Ray Levitt has

been doing with his computer modelling of organizational design (1999) is another example of how we can approach the manipulation of our context.

Value

Second, I am completely convinced that project management ought to be working so that projects add value to the sponsor's business proposition. There is a view of project management—the traditional view—that it is essentially singularly about project control. Simply define the targets, develop a project plan, and deliver against those. But really we ought to be doing much more. We ought to be bringing our professional insights to bear to find the most innovative, value-adding approach to improving the bang-for-the-buck for our client, the project sponsor: shaping the smartest strategy, getting the right technology, bringing the best procurement route to bear, and selecting and getting the most out of the best people.

Impact

That brings me to the third of the new directions that I think project management should now be taking. That is, we should be linking our practices much more explicitly to the performance of business. We should be looking at the impact of our projects' management on our sponsoring organizations' outputs. Too much of our work fails to be related to what its benefits should be: what the impact of project management is or will be on society's problems or on business performance. It has been all about means, not about ends; all about techniques, tools, and concepts. And while this is understandable, we should be aware of the dangers of reductionism and of an overly inward-facing orientation. We should not forget that we are doing project management for a reason—for the sponsor's benefit. Now, it can be very hard to track the impact of various project management actions on performance, but it is possible and it seems to me morally right that we should be doing this. Performance management and risk management, in particular, could and should be tied much more often directly into the sponsor's benefits expected on, and after, project completion.

I say 'morally' because the world at the moment is entering difficult and dangerous times. Global warming, big demographic shifts, energy shortages, water shortages, massive fish extinction, and a big need to upgrade our infrastructure all paint a bleak picture. It is not all bad news though for, on the other hand, there are developments in robotics and information technology, in medicine and social engineering, which will change the nature of project management: it will become more agile with much more networked forms of organization; more intelligence being brought to bear

in the way that we design and set up projects. But this said, the reality is that the planet—our society, global, regional, national, or local—is facing serious challenges. So that morally we ought to be asking, as John F. Kennedy said in 1960, not what this country can do for you but what you can do for this country. What can project management do for the world? I think hardly anybody is explicitly addressing this.

So if you look at what these days have been increasingly termed p^3m —I think we can see a role for the discipline which is increasingly important. First, there are issues of prioritization. Many countries or regions, Southern Africa, for example, have a huge number of infrastructure projects in the pipeline: what will be the need for resources; what kind of competencies and capabilities are going to be needed? This is absolutely a portfolio challenge. At the program management level, the kind of work of Geels noted above on managing innovation in a more proactive way (Geels, 2004) is extremely promising.

And projects? I said just now that the future in project management probably includes a move towards more agile, networked organizations. Part of this will I believe be driven by developments in Information Technology such as Building Information Management Systems and their equivalent, but I think in fact there is the potential for much more development in delivery: what I would call 'educated instinct'. People need to be educated on the principles of project management so they can form their own judgements in a considered yet almost instinctive way. We have to be careful though in designing how to do this. For, as Kahneman has shown (2011), our instinct for 'quick thinking', while in certain times and places is essential, in others results in the wrong answer: we need to think about some things more carefully, allowing cognition to work out the answers. Cognition is shaped more by education than is instinct, which is shaped more by one's genes, upbringing, and training. Managers are going to require re-education if we want to create new, interdisciplinary ways of thinking that is fit for tomorrow.

Role of academia

The problems we face in the world of projects, and the ways to address them, are often intensely practical. Project management is a 'doing' discipline. Yet, academics too rarely experience the reality of really managing projects. As a result, hardly anyone is seriously researching or developing the discipline as a whole. Instead, driven partly by research assessment and by tenure and promotion criteria, academics typically opt to disaggregate the discipline and become expert in one or more of its elements (such as risk management, knowledge management, etc.); or else 'problematize'

aspects of it and critique what knowledge or practice has been built up. Thus, practice becomes the handmaiden of theory rather than theory of practice. As a result, academics are in danger of being like the priesthood: a conscience; useful, to an extent, for reflection but possibly not for the real business of living (doing).

EPOS can, and should, I contend, not only help broaden project management's theoretical base, but also help make the work of academia more practically relevant. Engage with real projects in a practical and helpful way, possibly in offering reviews, coaching, or action research.

Given academia's predilection for theory at the expense of practice, does this not mean we should look to the professions to be guardians of 'the true discipline'? Unfortunately, this is difficult since PMI's 'body of knowledge', though it has changed in the right direction in the 2008 and 2013 editions, barely represents the knowledge needed to manage projects. The *PMBOK® Guide* is a 'monitoring and control' Phase I model (PMI, 2013), missing almost totally project management's role in the front-end, technology, commerce, value, and even a lot on people—Phase II knowledge. Universities have a responsibility to argue this criticism, to offer alternatives, and to teach the more enlarged, relevant framework.

EPOS is in a fantastically good position to do just this. You have the field at your feet. So reach out, work the vision, make a difference! And for that I will drink to EPOS!

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References

- Archibald, R.D. (1976) *Managing High-Technology Programs and Projects*, Wiley, New York.
- Flyvbjerg, B., Bruzelius, N. and Rothengatter, W. (2003) *Megaprojects and Risk: an Anatomy of Ambition*, Cambridge University Press, Cambridge.
- Galbraith, J. (1973) *Designing Complex Organizations*, Addison-Wesley, Reading, MA.
- Geels, F. (2004) From sectoral systems of innovation to socio-technical systems: insights about dynamics and change from sociology and institutional theory. *Research Policy*, 33(6–7), 897–20.
- General Accountability Office. (2006a) *Improvements Needed to More Accurately Identify and Better Oversee Risky Projects Totaling Billions of Dollars*, GAO-06-1099, GAO.
- General Accountability Office. (2006b) *Assessment of Major Weapons Systems*, GAO-06-391, GAO.
- Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*, University of California Press, Berkeley and Los Angeles, p. 283.
- Grün, O. (2004) *Taming Giant Projects*, Berlin, Springer.
- Kahneman, D. (2011) *Thinking, Fast and Slow*, Allen Lane, London.
- Lawrence, P.R. and Lorsch, J.W. (1967a) *Organisation and Environment: Managing Integration and Differentiation*, Harvard University Press, Cambridge.
- Lawrence, P.R. and Lorsch, J.W. (1967b) , The new management job: the integrator. *Harvard Business Review*, November–December, pp. 142–51.
- Levitt, R.E., Thomsen, J., Christiansen, T.R., Kunz, J., Jin, T. and Nass, C. (1999) Simulating project work processes and organizations: toward a micro-contingency theory of organizational design. *Management Science*, 45(11), 1479–495.
- Meier, S.R. (2008) Best project management and systems engineering practices in pre-acquisition practices in the federal intelligence and defense agencies. *Project Management Journal*, 39(1), 59–71.
- Miller, R. and Lessard, D.R. (2000) *The Strategic Management of Large Engineering Projects*, MIT Press, Cambridge.
- Mintzberg, H. (1979) *The Structuring of Organizations*, Prentice-Hall, Englewood Cliffs, NJ.
- Morris, P.W.G. (1994) *The Management of Projects*, Thomas Telford, London.
- Morris, P.W.G. (2013) *Reconstructing Project Management*, Wiley-Blackwell, Chichester.
- Morris, P.W.G. and Hough, G.H. (1987) *The Anatomy of Major Projects*, John Wiley and Sons, Chichester.
- Morris, P.W.G. and Geraldi, J. (2011) Managing the institutional context for projects. *Project Management Journal*, 42(6), 20–32.
- Morris, P.W.G., Pinto, J.K. and Söderlund, J. (eds.) (2011) *The Oxford Handbook of Project Management*, Oxford University Press, Oxford.
- National Audit Office. (2004) *Major IT Procurement: the Impact of the Office of Government Commerce's Initiatives on Departments and Suppliers in the Delivery of Major IT-Enabled Projects*, Report to the Comptroller and Auditor General HC 877: session 2003–2004, TSO, London.
- National Audit Office. (2005a) *Improving Public Services through Better Construction*, Report by the Comptroller and Auditor General HC 364-I, session 2004–2005, TSO, London.
- National Audit Office. (2005b) *Driving the Successful Delivery of Major Defence Projects: Effective Project Control is a Key Factor in Successful Projects*, Report to the Comptroller and Auditor General, HC 30, session: 2005–2006, TSO, London.
- PMI (2013) *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* Fifth Edition edn. Project Management Institute, Newtown Square, PA.
- Scott, W.R. (1995) *Institutions and Organizations*, Sage, Thousand Oaks, CA.
- Thompson, J.D. (1967/2003) *Organizations in Action*, McGraw-Hill, New Brunswick, NJ.