ICPM

making the complex manageable

international centre for
programme management

Contextual Intelligence in Programme and Project Management: A preliminary framework for configuring resources to meet strategic objectives

Harvey Maylor
Ruth Murray-Webster
Joana Geraldi
Jonathan Lupson
Alessandro Giudici

Additional research, design and data collection was carried out by:

David Partington, Cranfield School of Management
Arnoud Franken, Cranfield School of Management

Contextual Intelligence in Programme and Project Management: a preliminary framework for configuring resources to meet strategic objectives

Abstract

The purpose of this paper is twofold.

Firstly it explores a key development from Operations Management, (Hayes and Wheelwright, 1985) and tests whether it provides insights into the practices of Programme and Project Management (PPM). Through an empirical study, it is found to provide a number of important insights, including that, in general, PPM is limited to a 'stage two' performance aspiration on the Hayes & Wheelwright four-point scale for competitive manufacturing, with a prevailing focus on conformance to standards. The resulting question is, 'how does an organisation develop its PPM capability beyond stage two? Achieving stage three and beyond requires that resources are configured, not to conform to a standard, but to meet the strategic needs as defined by the organisation and any end 'customers' for the work.

Secondly, the paper considers the research question, 'what elements of an organisation designed for programme and project-based working can be configured to meet particular strategic requirements?' It describes the investigation of this question in a field study of 11 cases to determine the nature of the elements of configurability, and hence to generate key decision areas for PPM. The results of this study provide a preliminary framework for determining what would constitute stage 3 - effectiveness in programme and project-based operations (PPOs). The paper concludes that the theoretical insights from Operations Management used in this paper offer a future direction for research on PPOs and sets out a research agenda.

The Management Problem

The point of departure for this paper is the identification of a management problem. There exists substantial advice for programme and project managers on how to manage their work. This advice falls into two categories:

1. Highly generic – statement of some 'good principles' at a high level, but little by way of statement of what needs to happen to gain a particular set of outcomes (e.g. Managing Successful Programme (OGC, 2007);

2. Highly specific – the details are laid out of the precise stages that need to be followed to achieve a generic output (e.g. PRINCE2™ (OGC, 2005).

Both are inadequate as they demonstrate little understanding of what works where and in what circumstances. For example, Pellegrinelli et al (2007) studied six programmes in private and public sectors based on the structure proposed by Managing Successful Programme (OGC, 2007). The results suggest that practices prescribed in the guide were not used consistently although the approach was obligatory in some of the organizations analysed. Practices were driven and shaped far more by programme context. Engwall (2003) arrived at similar conclusions for projects. The author compared two projects, one following practices suggested in such mainstream Bodies of Knowledge (BOKs), and the other using what the author described as a *laissez-faire* approach. The first approach was found to be less successful. The results also suggested the importance of context, both past and future in the execution of projects. Hodgson (2004) contrasted different levels of an organisation, and suggested conflict between the rhetoric of innovation and flexibility, usually attributed to project work at higher levels within the hierarchy and bureaucratised practice based on conformance at lower levels.

However, in some industry groups, we see that organisational aspiration becomes to *'conformance to the norm'*. The power of project and programme management (PPM) standards and the isomorphism of both project and programme practice is evident (Cicmil and Hodgson, 2007). It will be demonstrated that this represents a low level of development, and that organisations could use the way that programmes and projects are managed to seek out competitive advantage.

A Theoretical Perspective

One point of reference for comparison of PPM is the Operations Management (OM) literature. OM is a very well developed subject area and has received considerable attention from academics. It is the 30 years since OM took on the challenges of contingency, moving away from Tayloristic 'one-size-fits-all' approach to operations, and recognised the potential to create competitive advantage through **the intelligent and contextual configuration of resources**. Specifically, the development of Hayes and Wheelwright's (1984)

framework for assessing the competitive contribution of manufacturing has the potential to provide some insight into Project and Programme Operations (PPOs).

The concepts of **strategic fit** implicit in Hayes and Wheelwright's (1984) work has been progressed by academics from other fields, but is consistent with several different approaches to strategy, including the resource-based view of the firm (Barney, 1991; Barney, 2001), dynamic capabilities (e.g. Teece et al., 1997; Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M.A., Singh, H., Teece, D.J., Winter, S.G., 2007;) and Porter's idea of strategic fit in optimising organisational effort (Porter, 1986). The strategic fit literatures argues that aligning strategic content with the structure, culture and other resources of the firm within the prevailing environmental/contextual conditions will lead to high performance (e.g. Drazin and Van de Ven, 1985).

Strategic fit has two key dimensions – *external* and *internal*. External fit describes the relationship between the market / client requirements and the organisations' strategy. Internal fit describes the relationship between the organisations' strategy and the operational configuration within the firm (Hill and Brown, 2007).

Helfat et al (2007) adopted a dynamic capabilities view and proposed the notion of "**evolutionary fitness**" as a proxy for competitive advantage, i.e. "*the capacity [patterned and repeatable] to purposefully [intentionally] create, extend and/or modify [some or all of] the resource based [including processes and their context] in order to achieve evolutionary fitness [a combination of differential technical fitness in the light of market demand and competitive forces]' (p. 4-7)*

In this sense, we understand contextual intelligence as the ability of a firm to search for fit with the environment by mutually adjusting and transforming the environment and their resources, where 'resources' is understood as an overall term encompassing organisational capabilities and routines (Amit and Schoemaker (1995) and Makadok (2001).

It is notable how this thinking has been missing in PPM, despite significant evidence that this has provided significant benefits in OM. The conversation has been started (e.g. Pellegrinelli & Bowman, 1994, Partington, 2000, Shenhar et al, 2007) but has not addressed how the requirements of the customers of a particular programme or project can be incorporated into that thinking.

This combination of the management problem and the adoption of a theoretical perspective from both the OM and strategic management fields of literature provides us with a unique opportunity to generate further insights from research. This paper, through an empirical study, sets out the starting point for further exploration of how practice and theory can be influenced by the integration of the notion of contingency into the configuration of PPM resources. Throughout this discussion, **contingency** is 'the adaptation to

meet requirements', rather than 'buffers' or 'reserves'. The conceptual basis for this work is presented first, then a study described that explored what PPM resources can be configured in practice. The paper concludes with a research agenda for what we will call ***contextual intelligence in programme and project management***.

A View from Operations

Programmes and projects can be viewed from an operations perspective. That is, they can be represented as a business process that has inputs, a series of activities, and outputs. The focus of operations analysis is on what people and organisations do in the transformation of inputs into outputs. For the purpose of this discussion, we will compare repetitive operations (ROs) with PPOs.

Some key differences do exist:

- Performance improvement - there has been significant improvement in the performance of ROs over the past 15 years. Whether there has been any change in the delivery performance of PPOs over this time period is debatable.

- Focus of research: ROs have been the subject of considerable attention from scholars. PPOs as a context, are comparatively under-researched.

- Major influences: for ROs, the most recent influences are from the Toyota Production System. In PPOs, the presence of highly influential national and international BOKs and standards is notable, as is the absence of a benchmark 'Toyota' organisation.

As a subject, OM metamorphosed from 'Factory Management' and 'Operations Research' into one that demonstrated that it could have a major impact on organisational competitiveness, with the development of first manufacturing strategy and subsequently operations strategy. It is notable how such an approach appears to have significant potential to address the well understood shortcomings of PPOs.

For the purposes of this discussion on the development of thinking in PPM, we will consider the development of OM from the point of it accepting the concept of ***focus*** (Skinner, 1974) to the characterisation of operations by Hayes & Wheelwright (reference).

Wickham Skinner

Skinner famously stated that the organisation that focuses on achieving a limited mission will be more successful than the one that attempts a wider mission. The result was focused operations, including the concept of establishing a factory within a factory which further resulted in smaller operating units within a factory, where the resources could be configured to meet the needs of a particular client, market or market segment. The 'focus' would be on meeting particular performance objectives, which are today widely interpreted (e.g. in Slack et al, 2007) as:

- Quality, ranging from 'acceptable at cost' to 'high absolute quality';

- Delivery speed, ranging from 'not a major consideration' to 'as soon as possible;'

- Delivery reliability, ranging from 'not a major consideration' to 'absolutely essential on-time;'

- Cost, ranging from 'not a major consideration' to 'lowest possible';

- Flexibility, ranging from 'not a major consideration to 'must be able to change the product or service, the rate at which it is delivered or to innovate'.

Further empirical work in carried out by Skinner (1986) uncovered a "productivity paradox" within manufacturing, exposing how too much focus on one objective (in this case productivity) had the potential to skew focus away from what was relatively the most important priority (e.g. quality or flexibility).

Within OM, Skinner's seminal work underpinned the development of operations strategy and this is further discussed in terms of the Hayes and Wheelwright model representing stages of manufacturing 'maturity'. Operations strategy is conceptualised as comprising two separate but coexistent and interrelated parts: content and process. The content of operation strategy is *"a statement of the principles and policies which guide the operations activities"*, reference while its process is *"the way in which the guiding principles and policies are developed"* reference. Furthermore, the content of operation strategy is strongly related to the prioritisation of performance objectives and the design of strategies for each decision area. We argue that Skinner's insights are also relevant to programme and project management.

Programmes and projects are 'temporary organisations,' reference and for the purposes of this discussion, we will re-designate them as 'temporary operations.' For the purposes of consideration of focus, we can then use Skinner's principle, and adopt the proposition that the programme or project that attempts a narrow mission will be more successful than one that attempts a wide mission. That mission (that came to be known as the *operations* strategy) can be considered not just in terms of the specification of the brief

for that work, but in terms of prioritisation of key performance objectives. Further, Skinner's work on the productivity paradox suggests that giving priority to one objective over another, e.g. delivery on time on a consistent basis will result in sub-optimal performance.

In project management, the performance objectives and the notion of trade-off between them are well established in principle. Within projects, the trade-offs between time, cost and performance (scope & quality) are typically referred to as 'the iron triangle' that although popular, is recognised as having limited value in practice (Atkinson, 1999). Within programmes the iron-triangle is superseded by the concept of benefits mapping (Ward and Daniel, 2006) based on the premise that strategy can be articulated as measurable beneficial outcomes, and that the many and varied requirements and expectations of stakeholders can be reconciled to align with strategic benefits. Although there are limitations with these approaches, there is still considerable benefit from this kind of 'relative priority' and trade-off thinking. In OM, Schonberger (1986, 1990) suggested that modern approaches to operations had removed the trade-offs present in operations, (the 'T-word' as he termed it). This has not been held up either in theory or practice. Trade-offs still exist and we maintain it is a key function of programme and project managers to design or configure the resources available to meet the particular requirements.

Hayes & Wheelwright

Competing through manufacturing represented a breakthrough in OM and the resultant framework is still part of mainstream OM teaching over two decades later. The background to this work recognises the emerging importance of the consideration of the manufacturing function (cf. marketing, strategy, finance) and the statement that:

"What managers still lack, however, is a powerful descriptive framework for understanding how their manufacturing organisations are contributing to overall strategic goals, as well as the other kinds of contribution those organizations could be asked to make." (Hayes and Wheelwright, pp.99)

Hayes and Wheelwright describe their continuum of the development of the role of manufacturing in providing competitive advantage for an organisation:

"At one extreme, production can offer little contribution to a company's market success; at the other it provides a major source of competitive advantage. Understanding the possibilities along this continuum can help managers identify both their company's current position and the transformations in attitude and approach that will be necessary if it is to advance to a higher stage of competitive effectiveness." (Hayes and Wheelwright, pp.99-100)

It is interesting that the words 'manufacturing' or 'production' could be replaced by 'PPM capability' or similar and the statements would be relevant to the consideration of PPM today. Such transference of concepts has been attempted with apparent benefit in other areas of business activity.

The Hayes and Wheelwright continuum is a four-stage model of manufacturing effectiveness and a description of manufacturing's strategic role in each stage, as shown in Table 1.

Stage	Description	Characteristics
Stage 1	Minimize manufacturing's negative potential: **"internally neutral"**	Outside experts are called in to make decisions about strategic manufacturing issues. Internal detailed management control systems are the primary means for monitoring manufacturing performance. Manufacturing is kept flexible and reactive.
Stage 2	Achieve parity with competitors: **"externally neutral"**	Industry practice is followed. The planning horizon for manufacturing investment decisions is extended to incorporate a single business cycle. Capital investment is the primary means for catching up with competition or achieving a competitive advantage.
Stage 3	Provide credible support to the business strategy: **"internally supportive"**	Manufacturing investments are screened for consistency with the business strategy. A manufacturing strategy is formulated and pursued. Longer-tem manufacturing developments and trends are addressed systematically.
Stage 4	Pursue a manufacturing-based competitive advantage: **"externally supportive"**	Efforts are made to anticipate the manufacturing- potential of new manufacturing practices and technologies. Manufacturing is involved "up front" in major marketing and engineering decisions (and vice versa). Long-range programs are pursued in order to acquire capabilities in advance of needs.

Table 1: Stages in Manufacturing's Strategic Role
(Based on Hayes and Wheelwright, 1984)

In PPOs, the stage 1 (internally neutral) organisation would have the aspiration 'not to mess up'. For PPM, this would refer to organisations characterised by largely ad-hoc processes, with correspondingly low levels of both performance and consistency in performance. The move to stage 2 comes with the aspiration to be 'as good as everyone else' with the adoption of accepted practices (BOKs) and assessment not by performance, but by the degree of conformance to a set of process criteria. Stage 2 can be argued to be commensurate with CMMI Level 3 (being pursued my many PPM organisations

currently) and more generally with specific models to improve PPM such as OPM3® (PMI, 2003) and P3M3™ (OGC, 2008).

The PPM literature (reflected in much practice) has made some inroads into development of some stage 3 thinking but there is little evidence of this being widespread. Characteristics of PPOs consistent with stage 3 effectiveness include a move away from conformance thinking in process to performance in PPOs. This requires a shift in mindsets away from process design based on the notion of one-size fits all, to contingent performance supporting the strategic requirements of the organisation and the context in which PPOs are operating. Stage 3 effectiveness is strategy-driven and is based on limiting what PPOs are trying to excel at and actively managing trade-offs on this basis. The move from process focus to performance will encompass the consideration of behaviours in PPOs and the ability to develop capability through learning, adaptation of 'good ideas' (cf. stage 2 adoption) and continuous innovation.

Stage 4 effectiveness is concerned with strategy being driven by the evolving capabilities of the organisation as it redefines expectations in the markets in which they operate. Innovation becomes forward looking with proactive steps taken to generate enhancements to the offerings as a systemic ability evident throughout the organisation. Process is applied intelligently – with in-depth understanding of 'what works where' in the organisation – hence **contextual intelligence**.

A summary of the application of Hayes and Wheelwright's framework to PPOs, is shown in Fig.1.
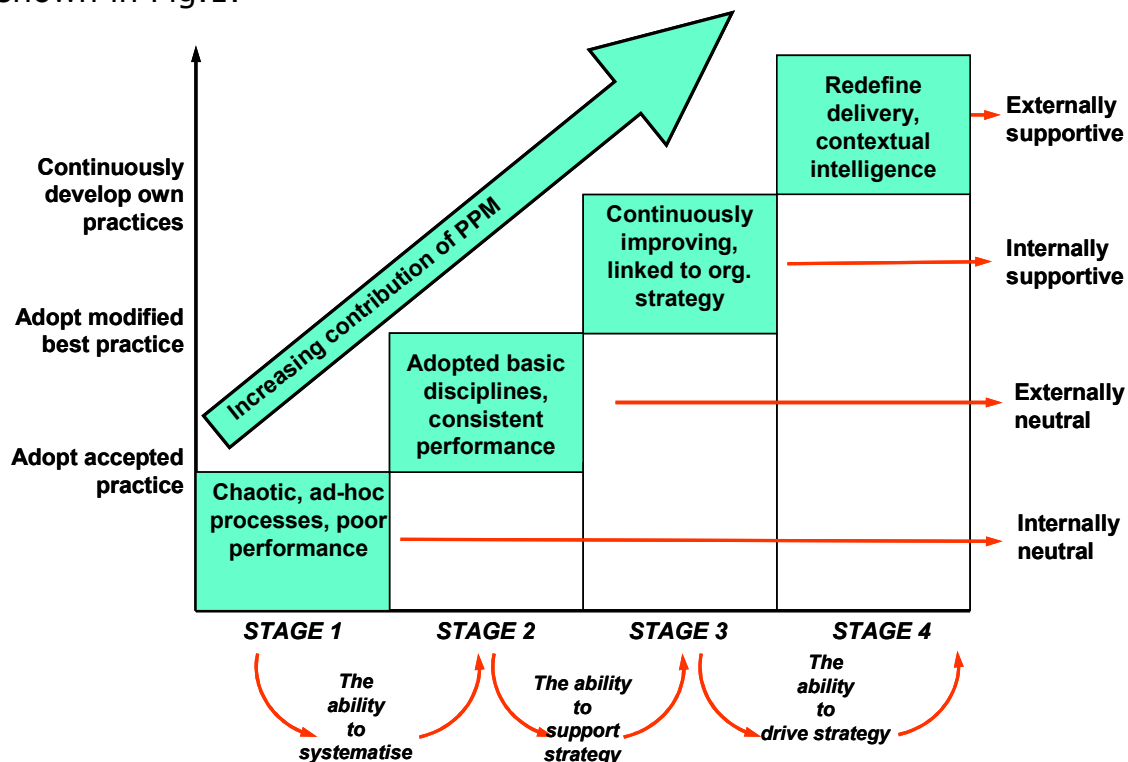
Figure 1: Application of Hayes and Wheelwright's Framework to PPOs

The breakthrough for OM was to consider the role of operations at a higher level of abstraction than had previously been achieved. For instance, Slack et al (2007) noted that operations management was fascinated by the topics of inventory control, logistics, and other local requirements. Operations strategy on the other hand, was concerned with a higher level of issues, and involved itself in matters such as supply chain management.

PPM has a similar challenge. Project management is still the dominant literature (over programme management) and focuses on the local rather than the higher level, typically focusing on planning algorithms, optimisation of resource allocation, risk administration, contract management and so forth. A new stream of thought strives to go beyond this traditional approach to projects and consider, for example, 'soft aspects' and a greater involvement with the project as practice, but this also fails to consider projects through a strategic lens. Engwall (2003) demonstrated that projects are not an island and are, therefore influenced by past experiences, future intentions, context, accepted practices and so on. Such fit however refers to an internal consistency with the set of influences projects face, but it does not connect projects as strategic devices with their broader business context. In summary, the conceptualisation of project management has still not left the job floor in PPM.

Programme management has built from this and is similarly concerned with local issues. Pellegrinelli et al. (2007) have argued that programmes are emergent phenomena and have indeterminate time horizons and as such they can be hardly studied using project management concepts. The same authors recognised that successful programmes require a continuous development of competences and capabilities at both the individual and organization level as well as a deep understanding of both internal and external contexts of the organisation. The consideration of strategy is weak and certainly there is little discussion as to how an organisation could configure a programme or project to meet a particular strategic requirement.

This keeps the aspiration for PPOs at stage 2 – externally neutral. The question that this raises is, 'how does an organisation develop its effectiveness to become a stage 3 (and potentially stage 4) organisation?' For this paper, the focus will be on developing a performance-focused model and to consider the characteristics that can be configured in a PPOs in attempting to move to stage 3 effectiveness. The theoretical insight we have developed suggests to us that stage 3 effectiveness is a 'worthy aspiration' for PPOs. If this is borne out in practice, then the development of similar models for stage 4 may be worth considering. The following empirical study will address the step to stage 3 by considering the research question:

What elements of a PPOs can be configured to meet particular strategic requirements?

Methodology

Data Collection

We were able to gain access to a major IT outsourcing company with extensive business operations across the globe. Our starting point for this research was to establish the nature of project and programme practice on the ground. We sought to achieve this objective by accessing four principal sources of data. These were access to a representative sample of accounts held with a variety of different companies across the United Kingdom and Europe, interviews with senior managers from the outsourcing company, notes taken at a three and a half day programme manager training event and a review of the company's project and programme management processes.

We were able to gain access to 11 different accounts, where we were generally able to interview a programme manager, a project manager, a project / programme support office manager and a client representative, although on a few occasions some individuals were not available. The interview protocol can be found in Appendix 1. The interviews were recorded and transcribed for later analysis.

We also gathered further data from a small number of individual and group interviews with senior managers from the outsourcing company. These took the form of open ended, exploratory interviews, with the researcher acting as a facilitator. Again, the interviews were recorded and transcribed for later analysis.

In the light of these interviews we reviewed the outsourcing company's project and programme management processes to see how these operated and the extent to which they were compatible. Whilst these did not directly contribute to our analysis, they did provide support for many of the statements made by the interviewees. Similarly, our notes made at the programme managers' training event informed, but did not directly contribute to our analysis.

Data Analysis

Consistent with our objective of establishing practice on the ground, we adopted a 'grounded' approach to code our data, with four initial codes as a preliminary analytical framework. These were 'CUL' (culture), 'STR' (structure). 'PEO' (people) and 'PRO' (process). Using the constant comparison method, each new instance of data was categorised, compared with all previous instances in the same category and either combined into an existing category or used to form a new one.

For example in the 'PEO' category the transcripts were systematically inspected for evidence of people aspects of projects and programmes. Each piece of evidence was then sub-coded according to the nature of the people phenomenon. For example, when respondents made reference to the 'Training and Development of Project and Programme Managers', all instances of data were then coded under this heading. The data was then further sub-coded into different aspects of 'Training and Development'. This process was followed across all four areas of the analytic framework, resulting in 132 indicators.

The 132 indicators in this form were used on one occasion to benchmark PPM performance across the organisation.

Following this, the indicators were further analysed to allocate them into one or more of three categories, consistent with the Hayes and Wheelwright (1984) approach being evaluated. These categories were:

1. Resources capable of configuration (configurable resources)

2. Performance characteristics at internal (firm) level

3. Performance characteristics at external (client) level

The relationship between 1 and 2 represents internal fit, and the relationship between internal fit and 3 represents external fit.

Indicators were grouped around sub-categories within each of the three categories, following the same process as in early phase. Some of the indicators did not match any of the three categories and were discounted. Some indicators were present in more than one sub-category. We analysed the correlation between each sub-category across the three categories and identified eleven features that can be configured. The subcategories were then grouped around these features. The results are portrayed in Table 2.

Findings

The table below provides an overview of the results. The 132 indicators mainly populated the first two categories of the framework (configurable resources and performance characteristics of the firm). The indicators inductively followed into eleven features of the organisation that can be configured.

Four of these are related to the day-to-day concerns of projects and programmes, and involve the design of processes, report/communication, resource strategy, team structure & role. Another three are in a tactical/corporate level and includes structure and governance, incentives and corporate enablers such as overall human resources tasks such as definition of job families. The features also contented one meta-mechanism to refresh and enable organisational strategic fit in the long run. Focus on learning is related to the mechanisms to produce, capture, disseminate and use knowledge

produced in projects and programmes, including training and development of employees. Finally a last feature was the relationship management with the client and suppliers, which includes aspects such as development of long-term relationship with client, understanding of their needs, trust, as well as good cooperation with contractors.

The performance criteria also relate to these features, such as relationship management fits with the relationship with the client, or design of processes so that it is an enabler and not hindrance. The fact that the indicators populated the first two categories and not the third (performance characteristics for the client) reinforces a supply-centric practice that classifies companies within stage 3.

	Configurable Resources		Internal Performance Characteristics		External Performance Characteristics	
Process Design	Early involvement, control, integrity, flexible, scalable, accessible, usable, record history	Co33, Co34, Co44, Cu8, Cu9, Cu11, Cu21, Cu23, Co31, Co34, Co37, Co1, Co7, Co17, Co6, Co7, Co8, Co27, Co25, Co27, Cu27, P45, C13	Processes as integrators and enablers, not hindrance	Co2, Co10, Co5, Co9, Co1, Co6, Co7, S7, Co1, Cu24, P1, P11, P19	Processes are resilient to contextual change, but follow consistent standards trusted by client, focus on client's requirements.	Co10, Co5, S5, Co6, C11
Reporting & Communicating	Complete, sufficient, robust, consistent, adequate level of control, visibility	Co20, Co23, Co17, Co14, P3, Co12, Co41, Co18	Reports are informative and believable, enable control of change, and variances are clearly explained and support forecasts	Cu6, Co15, Co16, Co17, Co18, Co19, Cu30, Co31, Cu10, Co23, Co30	Image of meeting committed deadlines, understanding the business and technical aspects of service delivered	Cu5, Co22, Co17
Resource Strategy & Competencies	Speed, Priority, Stability, Competencies, Balance int/ext	Co30, P14, S4, S6, P4, P16, Cu20, S4	Personal commitment, People performance, Staff satisfaction, Financial control	P6, Cu29, Cu17, P37, P43, P30, P29, P5, P10, P13, P25, Co21	Competencies to deal with client are also considered	P41
Team Structure & Roles	Separation of roles (PM/PgM,	Cu17, Cu 18, Cu22,			Some roles are kept within the	P12

	temporary/ operation), development of career path, and empowerment	Cu23, S1, S2, S8, P1, P2, P9, P18, P17			company	
Focus on learning	Training and development including internal training	Cu13, Co13, Co24, Co25, Co26, Co28, Co3, Co4, Co25, Co34, P31, P33, P38	Knowledge is valued and captured	Co28, Co29, P32, P34, P35		
Stakeholder engagement	Development of long-term relationship with client resistance to unrealistic timescales	Cu1, Cu6, Cu9, Cu10, Cu11	Relationship with the client, early clarity in commitments	Co42. Cu1, P22, P20, P21	Understanding of client's needs, trust	Cu3, Co43, P22, Cu1, P41, P21, Cu8, Cu17, Cu2, Cu12
Governance	Autonomy and support to PPMers	Co35, P39, S12, S1, S9, S11	Integration of business and technical needs and stop not viable projects	Cu4, Co37, Co35	Client ownership, shared governance and control	Co36, P22
Incentives	Competitive incentives, challenging targets	Co40, P47, P42, P15, P44	Targets are set and support business	Co38, Co39		
Corporate enablers	HR practices support projects (attractive job family, selection, etc), formal inter-department relationship, infrastructure	P23, P24, P26, P28, P38, P27, P46, P40, Cu28, P41, Co4, Cu19, Cu25. Cu26, Cu27	Rapid response to the client, Keep promises whatever, Flexibility, Cost performance, Intranet as enabler, Proactive PPMer, PPM is recognised	Cu3, Cu5, Cu6, S4, S5, S10, Cu26, Cu27, P8, Cu14-16, Cu27		
Interface management	Check interfaces in face of changes, visibility	S4, Cu7	Consistency	S7, P20, P26		
Supply Chain	Integration with contractors	P16, P17, P18				

Table 2: Stage 3 Configurable resources, internal and external performance characteristics

Discussion

The key decision areas generated for manufacturing by Hayes and Wheelwright reference, and those for OM in general by Slack et al reference, are compared in Table 2 with the headings of the major project management BOKs, namely those produced by PMI (2008) and APM (2006) and the findings of this study. In the case of PMI's BoK, there are the nine process areas, and these provide a focus for initiating, planning, executing, controlling and closing the project and for decision-making. APM's BOK includes these items as seven chapter headings summarising several topics so the comparison is not quite so useful. The results from this study provide a much wider consideration than either of the BOKs. For instance, PMI's nine process areas fall predominantly under the first heading – process design. The other areas listed in the 'this study' column appear to encompass a wider perspective than the existing standards.

Hayes & Wheelwright (1985)	Slack et al (2007)	PMI (2008)	APM (2005)	This study
Capacity	New product / service development	Integration management	The context	Process design
Facilities		Scope management	Planning the strategy	Reporting & communication
Equipment & process technologies	Vertical integration strategy	Time management	Executing the strategy	Resource strategy &
Vertical integration	Facilities strategy	Cost management	Techniques	Competencies
Vendors	Technology strategy	Quality management	Business and commercial	Team structures & roles
New products	Workforce and organization strategy	Human resource management	Organisation and governance	Focus on learning
Human resources				Stakeholder engagement
Quality Systems	Capacity adjustment strategy	Communications management	People and the profession	Governance
	Supplier development strategy	Risk management		Incentives
	Inventory strategy	Procurement management		Corporate enablers
	Planning and control systems			Supply chain
	Improvement process strategy			Interface management

	Failure prevention and recovery			

Table 2: Key decision areas

In addition to the five main competitive objectives described previously on page 4,

Quality, ranging from 'acceptable at cost' to 'high absolute quality;'

- Delivery speed, ranging from 'not a major consideration' to 'as soon as possible;'

- Delivery reliability, ranging from 'not a major consideration' to 'absolutely essential on-time';

- Cost, ranging from 'not a major consideration' to 'lowest possible;'

- Flexibility, ranging from 'not a major consideration to 'must be able to change the product or service, the rate at which it is delivered or to innovate'.

There is potential for others in a service-based environment, for instance:

- Innovation: products/services delivered are 'leading edge', with in-built redundancy;

- Knowledge: where delivery enables internal competence development.

Whereas customers/clients are most likely to be interested in speed, price, reliability, flexibility, innovation and/or knowledge; delivery organisation performance characteristics might include:

- Brand protection/enhancement;

- Client satisfaction, basis for a long-term relationship;

- Margin;

- Positive cash-flow, frequent reliable payments;

- An opportunity for technical development;

- An opportunity for staff development to support attraction and retention;

- Compliance with the contract only.

Furthermore, the nature of configuration needs to take account of the modern supply chain. For instance, an organisation can decide whether to develop the required capabilities in-house or whether to sub-contract delivery to a supplier or partner organisation. A large part of the economy of some developing countries, for instance, comprises outsourced project delivery (e.g. programming, call centres, Project / Programme Management Offices).

Therefore many major organisations rely on network capabilities and network configurability to deliver programmes.

Conclusion

The management problem, as stated at the outset is that for PPOs, guidance on their management is generic. Capability Maturity Models drive conformity and continuous improvement of practice, but do not explicitly address the fit of internal practices with strategic priorities. Insights from OM (focused on the work of Skinner (1974, 1986) and Hayes & Wheelwright, 1984) indicate the potential benefits of focus and configuration of local resources to align with specific strategic priorities. This approach requires organisations to be able to make trade-offs between potentially conflicting strategic objectives and then focus on what is needed to delivery the priority objectives.

The central idea driving this work is that for programme and project delivery to be successful in supporting strategy, there needs to be a clear understanding of the strategic drivers and a willingness and competence to configure delivery resources accordingly. This fit of resources to the client / customer requirements is important. Yet there is an additional level of 'fit' required if delivery is to meet the strategic aims of the delivering organisation.

This study provides a preliminary framework for configuring resources to meet strategic objectives. The work is indicative only at this stage, given the limitations of the fieldwork undertaken, and is intended to start / join a conversation around what we believe to be a signficant opportunity for breakthrough in PPM.

Direction for Further Research

Based on this work, there are six areas for further research. First, we need to test the framework further. Does it appear to generate a different approach to the consideration of PPM or does it invoke 'more of the same?' Second, we need to validate the characteristics of stages 1-4 for PPOs to confirm or refute our original model. Third, we need to develop the list of key strategic requirements, and test whether the traditional five attributes of quality, cost, delivery speed, delivery reliability and flexibility are appropriate for PPOs. Fourth, we need to develop the list of configurable resources in the context of PPOs (both within one organisation and networked across multiple organisations. Fifth, we think that the concept of a *strategic fit index* should be explored. Is it possible to determine in some semi-objective manner the level of fit between a set of requirements and the configuration of PPOs? Sixth, we need to explore more recent concepts from the OM literature and investigate their potential to develop further theoretical insights into PPM.

References

Amit, R. and Schoemaker, P. J. H. (1993), "Strategic assets and organizational rent", Strategic Management Journal, vol. 14(1)

Association for Project Management (2006) *APM Body of Knowledge 5th Edition"*, APM Publishing, UK

Atkinson, R (1999) "Time, Cost and Quality: two best guesses and a phenomena, it's time to accept other success criteria" *International Journal of Project Management* 17(6)

Barney, J. (1991), "Firm Resources and Sustained Competitive Advantage", Journal of Management, vol. 17(1)

Barney, J. B. (2001), "Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view", Journal of Management, vol. 27(6)

Drazin, R. and Van de Ven, A. H. (1985), "Alternative forms of fit in contingency theory", Administrative Science Quarterly, vol. 30(4)

Engwall, M. (2003). No project is an island: linking projects to history and context. *Research Policy*, 32(5), 789-808.

Hayes, R & Wheelwright, S (1984) *"Restoring our Competitive Edge: competing through manufacturing"* John Wiley & Sons, UK.

Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh H., Teece, D., Winter, S. (2007) *"Dynamic Capabilities: Understanding Strategic Change in Organisations"* Blackwell Publishing, UK.

Hill, A. and Brown, S. (2007), "Strategic profiling", International Journal of Operations & Production Management, vol. 27(12)

Hodgson, D. (2004). Project work: The legacy of bureaucratic control in the post-bureaucratic organization. *Organization*, 11(1), 81-100.

Hodgson, D., & Cicmil, S. (2007). The politics of standards in modern management: Making 'The Project' a reality. *Journal of Management Studies*, 44(3), 431-450.

Makadok, R (2001) "Towards a synthesis of the resource-based and dynamic capability views of rent creation" *Strategic Management Journal* 22(5)

Office of Government Commerce (OGC) (2005) *"Managing Successful Projects with PRINCE2™ 4th Edition"*, The Stationery Office, UK

Office of Government Commerce (OGC) (2007) "*Managing Successful Programmes with MSP™ 3rd Edition*", The Stationery Office, UK

Office of Government Commerce (OGC) (2008) "*Organizational Project Management Maturity Model™*" 2nd Edition, The Stationery Office, UK

Partington, D (2000) "*Implementing strategy through programmes of projects*" in Turner & Simister (eds) Gower Handbook of Project Management 3rd Edition, Gower Publishing, UK.

Pellegrinelli, S. & Bowman, C. (1994) "*Implementing Strategy Through Projects*", Long Range Planning 27(4)

Pellegrinelli, S., Partington, D., Hemingway, C., Mohdzain, Z. and MahmoodShah (2007), "The importance of context in programme management: an empirical review of programme practices", International Journal of Project Management, vol. 25(1)

Project Management Institute (2003) "*Organizational Project Management Maturity Model®*". Project Management Institute, USA.

Project Management Institute (2008) "*A guide to the project management body of knowledge PMBOK® guide 4th Edition*", Project Management Institute, USA.

Porter, M. E. (1986), "Changing Patterns of International Competition", California Management Review, vol. 28(2).

Schonberger, R-J, World Class Manufacturing, Free Press, New York 1986.

Schonberger, R.J. Building a Chain of Customers. Hutchinson, London 1990.

Shenhar, A. J., Milosevic, D., Dvir, D. and Thamhain, H. (2007), Linking project management to business strategy, Project Management Institute, USA.

Skinner, W (1974) "The Focused Factory" Harvard Business Review May-June 1974

Skinner, W. (1986), "The Productivity Paradox", Harvard Business Review, vol. 64(4)

Slack, N., Chambers, S., Johnston R. (2007) "Operations Management 5th Edition" Pearson Education, UK.

Teece, D. J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", Strategic Management Journal, vol. 18(7)

Ward, J. and Daniel, E. (2006), Benefits management: delivering value from IS & IT investments, Wiley, UK.

Annex 1: Interview guidelines

Programme manager interview

Culture/capability/governance

- Compared to its competitors, in your experience what is the company's reputation regarding its programme management capability?

- What aspects of company's culture support or limit its capability to deliver on this programme?

- How effective are the governance arrangements on this programme? How could they be improved?

People

- How many people are currently on this programme?

- How much discretion over recruitment do you have?

- How much of your project managers' time is spent managing versus 'hands on' duties?

- How much value do you place on the professional status of project and programme managers?

- How much value is attached to project and programme management training on this programme? How is it organised?

Collateral/performance

- Which items of collateral are you using on this programme?

- What measures of success are applied to this programme?

- Can you provide me with any documents that describe this programme and report its status?

Client interview

Culture/capability

- In your experience how does the company compare to its competitors regarding its programme management capability?

- What aspects of the company's culture support or limit its ability to deliver on this programme?

Collateral

- What are the measures of success that you apply to this programme?

- How are the performance measures tracked?

- How would you rate the company's performance on this programme against these measures?

- To what extent have you influenced the project and programme management tools that the company use on this programme?

People

- In your view how important is professional accreditation and training of project managers and programme managers?

- How would you rate the capabilities of the company's project managers on this programme?

Programme office manager interview

Culture/capability/governance

- Compared to its competitors, in your experience what is the company's reputation regarding its programme management capability?

- What aspects of the company's culture support or limit its capability to deliver this programme?

- What is the role of the programme office on this programme?

- How effective are the governance arrangements on this programme? How could they be improved?

People

- How many people are currently working in the programme office?

- How much of the project managers' time is spent managing versus 'hands on' duties?

- How much value do you place on the professional status of project and programme managers?

- How much value is attached to project and programme management training on this programme? How is it organised?

Collateral/performance

- Which items of collateral are you using on this programme?

- What measures of success are applied to this programme?

- Can you provide me with any documents that describe this programme and report its status?

Project manager interview

Culture/capability

- Compared to its competitors, in your experience what is the company's reputation regarding its project and programme management capability?

- What aspects of the company's culture support or limit its capability to deliver your project?

- How effective are the governance arrangements on your project? How could they be improved?

People

- How many people are currently on this project?

- How much of your time is spent managing versus 'hands on' duties?

- How much value do you place on the professional status of project managers?

- How much value is attached to project management training on this project? How is it organised?

Collateral/performance

- Which items of collateral are you using on this programme?

- What measures of success are applied to your project?

- Can you provide me with any documents that describe your project and report its status?

Annex 2: World Class Indicators

Culture			
Ref		**Item**	**Description**
Cu1	Both	Customer relationship	PPM focuses on developing strong, long-term relationship with clients
Cu2	Both	Focus on clients' objectives	PPM and client jointly focus on clients' business objectives and drivers
Cu3	Both	Focus on clients' objectives	There is rapid understanding and response to client needs
Cu4	Both	Business focus	Programmes are approached from a business rather than a technology perspective
Cu5	Bus	Commitment delivery	Promises to the client are kept whatever it takes
Cu6	Both	Delivery compromises	Compromises are sought to meet delivery deadlines
Cu7	Both	Delivery compromises	Visibility of gaps arising from compromises is maintained
Cu8	Both	Considered commitment	There is robust definition of requirements before commitment
Cu9	Both	Considered commitment	Contracts are fully understood before commitment
Cu10	Both	Considered commitment	Client pressures to commit to unrealistic timescales are resisted
Cu11	Both	Considered commitment	Programme ramp-up recognises issues of mobilisation, absorption, timeliness and maturity
Cu12	Both	Trust	A trusting relationship with the client is associated with optimal work breakdown
Cu13	Bus	Continuous improvement	Processes and knowledge are constantly refreshed
Cu14	Bus	PPM valued	PPM is valued appropriately to its importance
Cu15	Bus	PPM valued	PPM is not seen as secondary to live service
Cu16	Bus	PPM valued	PPM is seen as a source of account growth
Cu17	Bus	PPM valued	Project managers are encouraged to use their customer relationship to get new business
Cu18	Bus	PPM valued	Programme and project managers are seen as different roles
Cu19	Bus	Organisational capabilities	Arrangements with internal departments are formal

Cu20	Bus	Organisational capabilities	Willingness to use outside resources/services when necessary
Cu21	Bus	Not sales led	Delivery is fully taken into account when sale is made
Cu22	Bus	Not sales led	The organisation is perceived strong on both sales and delivery
Cu23	Bus	Not sales led	Programme managers are involved early in the bid
Cu24	Both	Escalation	Escalation is timely and not a first resort
Cu25	Bus	Escalation	Line managers are willing to delegate and do not chase form filling
Cu26	Bus	Intranet thinking	It is not automatically assumed that intranet information will be found and used
Cu27	Bus	Intranet thinking	Intranet thinking is kept up to date or deleted
Cu28	Bus	Intervention teams	Intervention teams provide help, not audit
Cu29	Bus	Matrix priority	PPM staff do not give priority to their leveraged origin
Cu30	Bus	Bad news	The communication of bad news is not suppressed

Structure			
Ref		**Item**	**Description**
S1	Bus	Matrix suPPOSsrt	Matrix organisations provide appropriate and empowering suPPOSsrt to project managers
S2	Bus	Matrix suPPOSsrt	Matrix organisations provide appropriate and empowering suPPOSsrt to programme managers
S3	Bus	Matrix suPPOSsrt	Divisional targets suPPOSsrt programme objectives
S4	Bus	Agility	Approval processes and resource availability are swift
S5	Bus	Agility	Processes are flexible enough to deal with changing client environment
S6	Bus	Staff utilisation	The staff utilisation policy is determined by cost/benefit analysis
S7	Bus	Groups connected	Delivery groups have joined-up processes
S8	Bus	Resource separation	Project resources are separated from live service resources
S9	Bus	Governance	Programme managers have sufficient autonomy over account executives and internal departments
S10	Both	Governance	Governance is dynamic
S11	Both	Governance	Guidelines and authorities for financial control
S12	Both	Governance	Governance is focused on benefits management

People			
Ref		**Item**	**Description**
P1	Both	Transitioned staff	Staff transitioned from client are integrated into company's ways of working
P2	PPM	PjM role	Project managers spend their time managing projects
P3	PPM	PjM role	Programme managers know how much time project managers are spending on their programme
P4	PPM	PjM role	Project teams are stable
P5	PPM	PjM competence	Project managers are appropriate competent for their role
P6	PPM	PjM competence	Project managers feel affiliated to supplier and the client
P7	Both	PjM competence	Project managers resist diversion of their efforts
P8	PPM	PgM role	Programme managers are proactive, not reactive
P9	Both	PgM role	There is a clear distinction between technical and managerial roles
P10	PPM	PgM competence	Programme managers are appropriately competent for their role (see PgM assessment tool)
P11	PPM	PPM suPPOSsrt role	PPM SuPPOSsrt provides a full navigational and suPPOSsrting service
P12	PPM	PPM suPPOSsrt role	PPM SuPPOSsrt role is not provided by the client
P13	PPM	PPM SuPPOSsrt competence	PPM SuPPOSsrt staff are appropriately competent for their roles
P14	PPM	PPM SuPPOSsrt deployment	PPM SuPPOSsrt function is quickly set up and appropriately resourced
P15	PPM	Stretch targets	Stretch targets are challenging but realistic
P16	Both	Contractors	Contractors are not used to fill long-term or managerial resource gaps
P17	Both	Contractors	Contractors are integrated into company's way of working
P18	Both	Contractors	Contractors have access to company's physical and social networks
P19	Both	Management of	Good practice in organisational

		change	change management is followed
P20	Both	Change context	Change initiatives are taken in the light of local and global context
P21	Both	Intelligent client	The role of the "intelligent client" is understood and fulfilled
P22	Both	Intelligent client	Client has joint ownership and shared governance
P23	Both	HR Job family	Job families provide a reliable guide to competence
P24	Both	HR Job family	Job code salaries are in touch with the market
P25	Both	HR Job family	Job codes are not used as a tool for retention
P26	Both	HR Job family	Job families are consistently applied
P27	Bus	HR Job family	PjM, PgM and PPM SuPPOSsrt are seen as three separate and viable career paths
P28	PPM	HR Job family	Programme managers specialise in types of programmes
P29	PPM	HR accreditation	Accreditation is in itself not a reliable guide to competence
P30	PPM	HR accreditation	Leadership skills are valued as well as technical PjM skills
P31	Both	HR Training and development	Training and development is clearly structured, up to date, and consistently applied
P32	Both	HR Training and development	Proactive training is suPPOSsrted by clear training budgets that are organisationally consistent
P33	Both	HR Training and development	The effectiveness of training and development is monitored
P34	Both	HR Training and development	Programme managers play a proactive role in mentoring PPM staff
P35	Both	HR Training and development	Training and development is not self-managed
P36	Both	HR Training and development	Training and development is company-specific*
P37	Bus	HR Staff turnover	There is a low turnover of good staff
P38	Bus	HR Staff turnover	Incompetent staff are not aPPOSsinted
P39	Both	HR selection	People with redundant technical skills are not assigned automatically to project roles
P40	Both	HR selection	Programme managers select staff on the basis of CVs and

			interviews
P41	Both	HR selection	Relationship management skills are taken into account in selection
P42	Both	HR sanctions and rewards	Performance reviews are linked to the achievement of projects and programme objectives
P43	Both	HR sanctions and rewards	PjMs feel recognised by senior management
P44	Both	HR sanctions and rewards	PgMs are rewarded in proportion to business risks that they carry
P45	Both	HR sanctions and rewards	Sanctions as well as rewards are consistently applied
P46	Bus	HR deployment	Staff are deployable globally

Collateral - general			
Ref		**Item**	**Description**
Co1	PPM	Workflow	Project managers do not have to fill workflow gaps
Co2	PPM	Workflow	Collateral is seen as an enabler, not a hindrance
Co3	PPM	Understanding and use	Collateral is well understood and consistently used
Co4	Both	Understanding and use	Clear guidance on the use of collateral exists
Co5	Both	Understanding and use	Client requirements are not used as an excuse not to have to use company's collateral
Co6	Both	Integrated suite	Collateral forms an integrated suite that links with clients' requirements
Co7	PPM	Integrated suite	Alternative processes for the same function are eliminated
Co8	PPM	Easy use	Collateral is easy to find, set up and use, and up to date
Co9	PPM	Standard templates	People do not apply or develop their own collateral
Co10	PPM	Standard templates	Clients do not feel the need to bring their own collateral
Co11	PPM	Standard templates	The client insists on a standardised approach
Co12	PPM	Visibility	Collateral provides visibility internally and to the customer
Co13	PPM	Flexibility	Collateral is scaleable
Co14	PPM	Flexibility	Collateral is tailorable
Co15	PPM	Reporting	Reporting is consistent and value-adding
Co16	PPM	Reporting	The purpose of reporting is informing not escalating
Co17	PPM	Reporting	One integrated set of reports satisfies all stakeholders
Co18	PPM	Reporting	Senior management confidence in programme reporting is high
Co19	PPM	Reporting	Early warning reporting

			leads to top-down project suPPOSsrt
Co20	Both	Reporting	Reporting covers both business transformation and technology aspects of programmes
Co21	PPM	Financial control	Project managers actively manage finances, explain and control variances
Co22	PPM	Financial control	Project and programme managers have full P&L responsibility where appropriate
Co23	PPM	Financial control	Programmes can produce forward looking financial estimates
Co24	PPM	Estimating	Scientific estimating tools and standards exist
Co25	Bus	Knowledge management	Lessons learned are captured, disseminated and used
Co26	Bus	Knowledge management	Tacit knowledge is leveraged
Co27	Bus	Knowledge management	Information is quickly and easily found
Co28	Bus	Knowledge management	Contractors' knowledge is not lost
Co29	Bus	Knowledge management	Sources of best practice are not lost with reorganisations
Co30	PPM	Resource management	Resource plans are effective tools and consistently applied
Co31	PPM	Scope control	Scope change control financial management is strong
Co32	PPM	Scope control	A mindset of exceeding expectations is not allowed to jeopardise scope control
Co33	PPM	Initiation and planning	PPM initiation and planning is strong
Co34	PPM	Risk management	Risk management processes, including identification and classification, are robust and well understood
Co35	PPM	Control gate	Control gate board membership is consistent

Co36	PPM	Control gate	Control gate collateral is used for involving client
Co37	PPM	Control gate	Control gate collateral is used for killing off bad projects
Co38	Both	Work metrics	Work metrics and targets suPPOSsrt business programmes
Co39	Both	Work metrics	Project management productivity targets are set
Co40	Both	PPM metrics	Customer measures of success are tracked
Co41	Both	PPM metrics	Programme level metrics are tracked and communicated
Co42	Both	Quality management	High-level quality assurance is undertaken
Co43	Both	Quality management	Review processes focus on supplier's and clients' interests
Co44	PPM	Scheduling and breakdown	Work packages are broken down sufficiently to enable integration and programme level understanding