Programme management: 
organising project-based change

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This article seeks to identify the nature and key facets of programmes and programme working and to create a coherent framework for understanding and exploiting the capacities programmes have to organise project-based activity. Based on consulting interventions and action research, the article argues that programme management has evolved a core set of actions, structural arrangements and approaches, which, when compared with project management, are distinct and address conceptually different issues. The article advocates the recognition of programme management as a distinct, albeit emerging, discipline and greater inquiry into the techniques which underpin its effective application, rather than the imposition of sometimes inappropriate project level concepts and practices. ©1997 Elsevier Science Ltd and IPMA

Project management is now a well-established approach for effecting a wide range of changes. From its roots in the construction and aerospace industries, it has become the chosen vehicle for change in the information technology arena, particularly for well-defined system changes, and increasingly for carrying out strategic initiatives. With the diffusion of the project management approach has come a flexing of the core disciplines and techniques to meet the needs of the less tangible and ‘shifting’ project objectives and scopes inherent in organisational change, as described by Buchanan and Boddy. As Partington argues:

"Binding the whole set of new-wave themes together is the idea—which pervades the popular management books—that the structural successor to the machine bureaucracy is the cross-functional project team approach to organisation design."

This widespread use of projects, in some cases becoming the preferred or dominant business process, and their use in realising strategic or complex change has also brought with it the need to marshal project-based activity in some coherent, beneficial way. Pellegrinelli and Bowman advocate the use of the programme approach as a way of managing the interdependence between projects and the requirements to learn and respond to changing circumstances associated with strategy implementation. Programmes provide some of the flexibility required by project-based initiatives, or where projects form the units of work for organisations.

The term ‘programme’ has, for some time, been widely used to describe the organising structure and processes used to coordinate and direct related projects. Yet such a conception of a programme is far from universal; anecdotal evidence suggests that some project managers still think of ‘programmes of work’, implicitly regarding the term programme as meaning schedule or quantity. This confusion is exacerbated by the implicit view that, in a multi-project environment, the management of resource conflicts is the key challenge facing the organisation. Platje and Seidel point out that:

"In a multiproject organisation, all the project leaders make use of several pools of (limited) resources, e.g. departments or expertise. The simultaneous management of the throughput times, resource allocations and costs of the projects is a complex process of balancing the (often-conflicting) interests of multiple participants."

Programme management is not the same as multi-project management. The nature and practice of programme management are far more wide reaching than common resource management. The management of scarce resources, or the establishment of appropriate information systems, are clearly core elements of programme management, but focus attention to the technical and planning aspects rather than the generative and organising aspects.

Existing definitions of programme management presume that the rationales and processes for initiating projects operate outside the programme framework. The existence of a set or portfolio of projects is the presumed starting point for the programme, which then has the task of extracting synergistic benefits. This conception of a programme limits the potential value that programmes can add within an organisational setting. Empirical research shows that organisations also use programmes as generative mechanisms for projects and as the primary means of exercising direction and control, in some cases replacing the traditional reporting hierarchy.
The aim of this article is to take a next step in generalising and codifying the understanding and practices of organisations in respect of programme management. The definitions, principles and descriptions set out in this article are grounded in the experiences of managers. The article draws on their concepts and their responses to the challenges they face, which have shaped and will continue to shape the emerging discipline of programme management. Distilled from consulting interventions and an in-depth action research study for a major European telecommunications company, this article proposes a more inclusive definition of programme management, identifies three archetypal configurations of programmes and the principal management roles, and describes a programme's evolution or spiral. Key techniques and issues regarding the application of programme management are then discussed.

Research methodology

The concepts and framework described in this article have emerged primarily from an in-depth action research study for a major European telecommunications company. The author was part of a joint client–consultant team commissioned to review disparate programme management practices, which had largely evolved over the previous decade, and then to distil and codify 'good practices' with a view to disseminating them throughout the company.

The research involved:

- interviews with senior managers responsible for the creation, coordination and ultimate success of programmes;
- the in-depth study of four different programmes which were perceived as well managed; this involved extensive and repeated interviews with managers associated with the programmes, attendance at meetings to observe management practices and detailed analyses of documents, plans and techniques employed;
- the comparative analysis of a range of other programmes, mainly carried out through interviews and documents review;
- a large-scale interview survey of programme managers across the organisation.

The data generated from the interviews and reviews were analysed inductively, building on the concepts used by managers within the organisation and on the experience of the consultants gained from numerous previous interventions. The concepts and framework were developed iteratively. The ideas were discussed and challenged by the joint team and at regular meetings with senior managers and subsequently modified. This process of continuous review honed the research process and informed the survey, which was conducted towards the end of the study. Such a research design and process of analytic induction focuses on the development of theory and concepts applicable beyond the specific context of the research.12

Programmes

A programme is a framework for grouping existing projects or defining new projects, and for focusing all the activities required to achieve a set of major benefits. These projects are managed in a coordinated way, either to achieve a common goal, or to extract benefits which would otherwise not be realised if they were managed independently. Programmes differ from projects in that they do not necessarily have a single, clearly defined deliverable, or a finite time horizon. Of particular importance are three features of programmes which:

- create benefits through better organisation of projects and their activities; in themselves they do not deliver the projects' objectives;
- evolve in response to the business' needs in an uncertain competitive, political and technological environment, in a way straddling the vague and changing, and the fixed and tangible;
- take a wider view to ensure that the overall business benefits from projects' activities, not just the project client or sponsor.

A fuller comparison between a programme and a project is given in Table 1. By taking the traditional characteristics of a project as the basis of comparison, the differences are accentuated. Clearly, the more recent flexing of the concepts and understandings of projects would make the comparison less clear cut, but at the same time would obscure some of the foundations and implicit assumptions upon which project management as a discipline has been built.

Programmes create value by improving on the management of projects in isolation, especially where the working environment is made up of a myriad of small projects and where project integration in terms of both development and deliverables is crucial to competitive success. The advantages cited by organisations using programmes include:

- greater visibility of projects to senior management and more comprehensive reporting of progress, while project reporting systems focus on performance against plan or specific objectives, programme reporting can better address strategic performance by tracking progress relative to competitors;
- better prioritisation of projects; each project's role within the organisation's overall development is specifically identified and managed, and resources can be more easily re-allocated to critical projects even after funds have been assigned to individual projects;
- more efficient and appropriate use of resources; dedicated or ringfenced resources, which tend to be more productive, can become cost-effective within a programme context;
- projects driven by business needs; project and line managers' personal agendas, such as the desire to apply the latest technology, utilise existing staff or fulfil personal research interests can be kept in check;
- better planning and coordination; incidence of work

Table 1 Comparison of Programmes and Projects

<table>
<thead>
<tr>
<th>Programme</th>
<th>Project</th>
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<tbody>
<tr>
<td>An organising framework</td>
<td>A process for delivering a specific outcome</td>
</tr>
<tr>
<td>May have an indefinite time horizon</td>
<td>Will have a fixed duration</td>
</tr>
<tr>
<td>Evolves in line with business needs</td>
<td>Has set objectives</td>
</tr>
<tr>
<td>May involve the management of multiple, related deliveries</td>
<td>Involves the management of a single delivery</td>
</tr>
<tr>
<td>Focused on meeting strategic or extra-project objectives</td>
<td>Focused on delivery of an asset or change</td>
</tr>
<tr>
<td>Programme manager facilitates the interaction of numerous managers</td>
<td>Project manager has single point responsibility for project's success</td>
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backlogs and duplication of core functionality and components can be reduced;
- explicit recognition and understanding of dependencies; re-engineering due to inadequate interface management with existing systems and other projects can be minimised.

While these advantages are not guaranteed, the application of programme management can make the most of resources and effort expended on projects, and can sustain the drive to maximise the benefits to the business.

**Programme roles**

The tendency to focus on similarities between programmes and projects is understandable given that programme roles appear to have direct parallels with project roles.

The programme client or sponsor acts as agent for the business as a whole in determining the strategic requirements for the programme and assumes responsibility for achieving the benefits from the investment. The programme manager has overall responsibility for realising the anticipated benefits from the programme. The operations manager (or team) provides expertise in the key programme and project disciplines of definition, planning, monitoring and control, risk identification and evaluation and appraisal.

The unit of implementation within a programme remains a project, within which are a linked set of work packages. This work unit is managed by a project manager, who represents the single point of integrative responsibility for the project and defines, monitors and controls the contributions of the various resource and work package managers.

Sometimes the large number of programmes means that they need to be aligned and consolidated for reporting and communication purposes. The ‘sector’ manager plays this pivotal role of creating visibility of programme direction and developments and in linking programme efforts to best support service delivery across the full scope of the business. This is a distinctive role and occurs only where projects and programmes are ‘the way in which the business works’.

However, the nature of these programme roles and the ways in which they are performed exhibit significant and systematic variation between programmes.

**Programme configurations**

As might be deduced from the range and diversity of the advantages claimed for programmes, the variations between programmes are quite significant. What is clear from discussions with programme managers and senior managers within organisations and analysis of their practices is that the rationales for, and benefits expected from, programmes lead to different programme management structures. There appear to be three primary reasons for the creation of a programme; to coordinate distinct projects using a common resource or skill base; to develop completely new systems, infrastructure or services; and to enhance existing functionality or service delivery. These reasons generate fairly distinctive configurations of programme activity and organisation. Abstracting and generalising from the specific details of individual programmes enables the creation of three ‘archetypal’ or ‘pure form’ configurations; portfolio, goal-oriented and heartbeat. These configurations provide a set of lenses or a conceptual model for understanding programme activity and organisation and their contingent relationship with programme rationale. Figure 1 illustrates the three configurations.

![Figure 1 Portfolio, goal-oriented and heartbeat configurations](image)

### Portfolio

Portfolio programmes are those which enable the grouping of projects which are relatively independent of one another but have a common theme. The existence of this theme means that the performance of the projects can be improved through coordination. The theme can be common resources, in which case the desired benefit might be better resource utilisation and personnel development, or technology, in which case the desired benefit might be the exploitation of the latest techniques or developments. The definition of the projects is generally outside the programme’s sphere of influence, but the planning and execution of the project work is coordinated via programme structures. Exceptionally, the project definition is amended to enable additional benefits to be derived, such as more generic functionality or extra applications development of a new technology.

In summary, the portfolio programme is mainly concerned with the process of managing projects with a view to efficient resource utilisation and leveraging existing knowledge or skills.

### Goal-oriented

Goal-oriented programmes are those which enable the management of initiatives or developments outside the existing infrastructure or routine. Goal-oriented programmes can be used as a means of translating usually vague, incomplete and evolving business strategies into tangible actions and new developments. As such, the resulting projects can operate or impinge on a number of core systems and procedures. Goal-oriented programmes can also be used as a means of effecting major, typically one-off, changes where neither the exact implementation process nor a definitive final outcome is known in advance. Research into, and subsequent development of, commercial applications from a new technology are frequently undertaken via goal-oriented programmes.

In summary, goal-oriented programmes provide a means of dealing effectively with situations where uncertainty prevails and learning is a prerequisite to making progress. The programme framework enables work already identified to be scoped into small, short duration projects and managed accordingly, while at the same time allowing new projects to be specified as requirements emerge within a supportive development environment.

### Heartbeat

Heartbeat programmes are those which enable the regular improvement of existing systems, infrastructure or even business processes, via increments to functionality or
deploying resources in accordance with skill levels and the needs and priorities of individual projects. The programme organisation has, appropriately, a relatively low level of influence on the definition and internal management of individual projects. Heartbeat programme management fulfils the above role but takes on the additional responsibility for integrating demands from the business during the project definition phase. The programme client takes on responsibility for the direction and pace of a core system’s enhancement to make sure that the individual requests and perceived priorities do not lead to a sub-optimal evolution of the core system or infrastructure viewed from a business wide perspective. For goal-oriented programmes, the definition of projects is an integral part of the programme role, with the programme manager, in essence, acting as the client or sponsor for the projects.

**Programme organisation: overlay or transformational.** Portfolio programme management is an overlay on the conventional project management roles of client, project manager and users and relationships between them. The strong (project) reporting relationship remains between the project client and project manager, with the programme manager having looser, less involved relationships with both the project client and project manager. In the case of the heartbeat programme, the repetitive nature of the ‘delivery’ process and overriding need to ensure continuity of operations by getting the deliverable right first time favours the establishment of expertise at the programme level reflecting the technical content of the projects. These experts have a major influence on the various phases of the individual projects, having direct contacts with the resource managers or work package managers. In addition, prevalence of multiple ‘clients’ inputting into the final definition and funding, of a project or ‘release’ means that there is not the conventional link between the project clients and project (release) manager. The project manager within a heartbeat programme performs a ‘weak’ project management role of information gathering, coordination and expediting. The strong relationships are between the business clients and the programme client, and the programme client and programme manager. The programme manager in a goal-oriented programme takes on the full project client role in respect of the individual projects, and the programme is run in a way which parallels a project. These programmes also tend to have a strong programme client role.

**Planning horizon: transitory or quasi-permanent.** The portfolio programme, in principle, is the most transitory in nature, since it is under constant review to determine occasionally an overhaul of the system or facility itself. The programme provides the integrative framework and processes for dealing with requests emanating throughout the business for extra functionality, capacity or changes to core processes. These requests are grouped, examined for consistency and aggregated into clearly defined, technically coherent and operationally efficient projects for implementation. The deliverables from these projects represent periodic improvements to the core infrastructure or system. For example, within an IT environment improvements to an existing suite of software might come in the form of a new ‘release’. If the software was central to the operations of the organisation, then the programme might be responsible for developing a series of ‘releases’.

Critically, the programme structure enables the evolution of the infrastructure or system to be undertaken from a more holistic perspective; competing and/or conflicting requests are aligned to the business’ overall requirements and scheduled or rejected accordingly. The programme structure also enables longer-term developments, such as architecture or hardware platform for a core IT system, and competitive considerations to be interwoven effectively with shorter-term requests for incremental functionality.

In summary, the heartbeat programme seeks to create as seamless a mesh as possible between change and stability. The existing system or infrastructure is improved in small, regular, incremental steps; the programme manages the changes to minimise disruption to operations, while maximising the amount of new functionality or capability delivered to the business. While the most obvious application of this configuration is for core IT systems, the principles outlined can be applied elsewhere, for instance, to physical production facilities serving a number of market facing divisions, or to business processes spanning a number of divisions.

**Programme configurations compared**

Each configuration has internally coherent management practices and organisational arrangements. Specifically, the contingent relationships between rationales for the programme’s existence and the processes of managing the programme are clearly reflected in the relationship between the programme and the projects, the programme organisation, planning horizon and relationships with the various line units. The three configurations are compared in Table 2 and discussed in greater detail below.

**Relationship between programme and projects: coordination or direction.** Portfolio programme management focuses on coordinating activities, for instance scheduling and

<table>
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<th>Table 2 Comparison of programme configurations</th>
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<tr>
<td><strong>Portfolio</strong></td>
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<tr>
<td>Programme’s control of projects</td>
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<td>Programme organisation</td>
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<td>Planning horizon</td>
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<td>Programme relationship with ‘line’</td>
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<td><strong>Goal-oriented</strong></td>
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<td><strong>Heartbeat</strong></td>
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**Relationship between programme and projects: coordination or direction.** Portfolio programme management focuses on coordinating activities, for instance scheduling and
whether the coordination of the projects using another theme, or set of themes, might bring about greater benefits. In practice, though, a portfolio programme based on a common, generic resource may exist indefinitely; new projects are allocated to the programme as the existing projects come to the end of their life cycles. A goal-oriented programme typically lasts as long as the strategic direction holds or until it has achieved its ultimate objective. As the strategy shifts in line with market opportunities and threats, the programme framework and direction may be conceived anew; the projects may continue, but a ‘new’ programme is created with new strategic objectives and definition. Alternatively, a goal-oriented programme may have an end goal and hence a life cycle similar to that of a project. The heartbeat programme is quasi-permanent with a life cycle which mirrors the core infrastructure or system it is supporting or enhancing.

Relationship with line units: complements or replaces. The goal-oriented programme operates on the existing structures, systems and procedures to transform or replace them and so complements the organisational hierarchy. A key advantage of using a programme to implement a strategic initiative is that it can bypass the organisation’s line hierarchy and focus efforts on cross-divisional processes. The portfolio programme facilitates the coordination of resource deployment across projects and hence assists line management. In practice this may mean taking on tasks which are usually the exclusive role of line management. The heartbeat programme takes on a maintenance and improvement role in respect of a core system. In the absence of a programme framework, this role is usually carried out by line management. In its most complete form, the heartbeat programme manager and his/her team are accountable for the functional performance of the core system. For instance, a heartbeat programme responsible for the periodic ‘releases’ which update the IT software may be the organisational unit held accountable for the performance of the system, in terms of availability and response times, while another division actually runs the IT software. This intentionally focuses the programme organisation’s attention on the operational performance of the deliverables from individual projects rather than some abstract concepts of ‘functionality’ or ‘potential capacity’.

Heartbeat, portfolio and goal-oriented programme configurations are internally consistent, archetypal representations of actual practices which have evolved to meet the requirements for individual programmes. These configurations are fundamental to a deeper conceptual and pragmatic understanding of programme management activity and organisation.

Programme phases

One of the fundamental differences between programmes and projects touched on above, is the pattern of activities over time. Unlike projects, programmes do not necessarily have a single, clearly defined deliverable, or a finite time horizon. These factors mean that a programme may not have a pre-defined, linear life cycle comparable to a project life cycle. Rather, once initiated, a programme is far more likely to go through a ‘spiral’ or ‘loop’ starting with definition and planning, then moving on to a phase during which projects deliver their objectives and then the programme mandate is typically renewed. Conceivably, the programme could be renewed prior to the completion of any actual project deliverables if the projects had long durations. The spiralling or looping creates a sense of programme work proceeding in ‘waves’ or ‘tranches’.

Analysis of programme working reveals that the processes involved in programme management can be grouped into five relatively discrete phases:

- Initiation
- Definition and Planning
- Projects Delivery
- Renewal
- Dissolution

Once the programme has been created or initiated, the projects are defined and their sequence planned. As the projects get under way, they make progress and deliver their objectives. The organisation can then, on the basis of results achieved or on a periodic basis, gauge whether the programme structure is still warranted and is adding value. If it is, the programme mandate is renewed. If it is not, the programme is dissolved. Figure 2 illustrates the programme ‘spiral’.

Conceptually, the duration of the programme spiral should reflect the nature and contents of, and hence durations of, the projects. However, the spiral between definition and renewal typically ties into the annual fiscal cycle, which is driven by businesses’ need to maintain tight financial controls. Given the multiple release achieved by heartbeat programmes, this is not an issue for them in terms of their

![Programme spiral](image-url)
planning horizon. Likewise, the portfolio programmes are unlikely to be adversely affected. Goal-oriented programmes, with potentially long duration projects, may have a longer natural cycle which needs to be accommodated into the annual budgeting and resource allocation processes.

Table 3 illustrates the programme phases and identifies the key management issues which need to be addressed at each phase, and the factors and considerations on which a decision is likely to be based. The steps involved in each phase are described in greater detail below.

Programme initiation
Programme initiation is about determining the need for a new programme and the benefits that are expected to result from its creation. The process of initiation is triggered by new client or business requirements, or by a comprehensive review of programmes. Initiation involves a number of analyses and steps, including:
- Analysis of the 'fit' of the new business requirements or projects within the business and their relationships to other programmes; this facilitates the identification of critical interfaces and the choice of programme client where one is needed.
- Formation of a programme and selection of a programme manager with the requisite skills and competencies.
- Creation of a programme team by the programme manager in line with the requirements of the programme.
- Drafting of the outline strategic objectives for the programme covering its terms of reference and including the relative priority of the programme.
- Redefinition of other programmes, where required, in terms of direction and content and consequent reallocation of projects.

Programme definition and planning
Programme definition and planning is about determining how the programme can add value and includes a number of elements:
- Development of the detailed programme objectives and programme plan;
- Allocation of responsibilities to programme team members and communication to all personnel involved with the programme.

The definition and planning process follows either initiation or whenever the programme is renewed. In the case of renewal, however, the process is generally one of updating existing plans and responsibilities.

Projects delivery
Completed projects represent units of delivery for programmes. The performance of each project against its time, cost and specification objectives is a measure of the effectiveness of the programme. During the projects delivery phase the programme team monitors the progress of projects. In parallel, senior management evaluates the benefits emanating from the programme structure and determines what changes are warranted. This includes:
- Analysis of the performances of the projects; for instance, the improvement achieved by a heartbeat programme in introducing new software 'releases', such as the reduction in the number of faults discovered in operation, or the extent to which available technology has been leveraged by grouping projects within a portfolio programme.
- Identification of new requirements and direction of the programme. For instance, if the project deliverable from a heartbeat programme achieved the anticipated cost savings in absolute terms but not in competitive terms, this may suggest that the target cost reductions need to be increased or that the core system, infrastructure or business process needs to be overhauled.

Programme renewal
Programme renewal is about confirming the continued business requirements to be addressed by the programme as currently conceived, in the light of additional work, projects or business requirements. The process of renewal operates at two levels:
- At the first level, programme renewal tends to follow an annual cycle driven by the budgets, with work for the fiscal year proposed and funding agreed; this process of renewal presumes the continued existence of the programme structure.
- At a more fundamental level, programmes are reviewed from a more holistic perspective and with reference to the way the business is moving, to determine whether entire programmes or the boundaries between programmes are still appropriate.

Programme dissolution
If the rationale for the programme's existence no longer holds, or greater benefit could be achieved from a new grouping of projects or reviewed strategic focus for the project, then the programme is dissolved. This involves:
- Re-allocation of uncompleted work or projects to other programmes; this is relatively easy for projects within

<table>
<thead>
<tr>
<th>Phase</th>
<th>Issues</th>
<th>Key factors</th>
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<tbody>
<tr>
<td>Initiation</td>
<td>Will the business benefit from the requirements delivery or projects with a programme framework?</td>
<td>- New client or business requirements</td>
</tr>
<tr>
<td>Planning/definition</td>
<td>How should the programme seek to achieve the business benefit?</td>
<td>- Changes in strategic direction</td>
</tr>
<tr>
<td>Delivery</td>
<td>Are the projects delivering against their objectives?</td>
<td>- Programme rationale</td>
</tr>
<tr>
<td></td>
<td>Is the programme realising the anticipated benefits?</td>
<td>- Nature of work/projects</td>
</tr>
<tr>
<td>Renewal</td>
<td>Should the programme continue?</td>
<td>- Projects' performance</td>
</tr>
<tr>
<td></td>
<td>How should the remaining work or projects be reallocated?</td>
<td>- Management of inter-project and inter-programme relationships</td>
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<tr>
<td>Dissolution</td>
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<td>- Resource efficiency</td>
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<td>- New client or business requirements</td>
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<td>- Changes to the business model</td>
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<tr>
<td></td>
<td></td>
<td>- Opportunities for realignment of projects</td>
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<td></td>
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<td>- Business processes and interdependencies (as reflected in programme arrangements)</td>
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portfolio programmes but may entail some respecification and interface management for other programmes.

- Carrying out a post-programme appraisal to assess the performance and benefits generated by the programme and to learn any lessons about the programme management which may be of benefit to similar programmes.
- Disbanding and re-assignment of the programme team.

As can be readily appreciated, these programme phases and associated activities are very different from the unidirectional project life cycle.

Techniques

Programme managers who are managing programmes, rather than large projects, have intuitively developed, if not perfected or articulated, the necessary techniques. In general, the techniques used tend to be more qualitative and heuristic than conventional project techniques, reflecting the uncertainty and complexity of most programme settings. However, in certain circumstances the subtle pressures to display assurance and control and to conform to conventional project planning norms mean that most of the techniques are stored and applied privately by programme managers. They can best be seen and described in analogous terms to their project counterparts.

WBS

Completeness, in terms of all the work or projects required within a programme, tends not to be an issue for portfolio or heartbeat programmes. For the former, the programme makes the best of the given set of projects, and for the latter, the additional requirements are fed into a subsequent project. The heartbeat configuration would use an evolution plan to shape the content of individual projects.

The goal-oriented programme faces the greatest challenge. If the business and technical requirements could be defined with reasonable certainty, then a WBS technique would be appropriate to determine the work composition; but then the programme would really be a large project. Notions of additivity tend to be misleading, since there is a need to integrate a number of parts per project deliverables into a new, cohesive whole. Unlike the heartbeat configuration, there is no existing system or infrastructure to enhance. If additivity is presumed, then no allowance is made in the ‘design’ for uncertainty and possible changes. This would tend to create significant reworking and delays; the ‘plan’ would undoubtedly be discredited. Notions of incrementalism are found to be more productive, where a range of outcomes is explicitly recognised and accepted at the outset. Progress resembles a directed meandering rather than a straight line. As information becomes available and experience (learning) is gained on the programme the next steps become clearer.

Typically, programme managers envisage a number of end outcomes and possible development paths, although in practice commit to paper only the most likely. Intuitively, they build in a degree of tolerance in the budget and ‘specification’ for individual projects; they trade-off over-specification for reduced reworking and delays.

Network

The sequence of projects and their contents is a key element of programme planning. For a project, well-defined interfaces between work packages, each having a relatively fixed duration, can reasonably be presumed. However, the projects within a programme are likely to be more loosely coupled and may themselves spawn new projects. The practice of applying a rigid critical path through a programme network may, therefore, be foolhardy.

For a heartbeat programme, the existence of an evolution plan covering around 5 years, which is well beyond the actual project planning horizon, creates a sense of priorities, continuity and direction. The definition of high priority requirements emerging from the business, taken in conjunction with the evolution plan, form the core contents of, and critical delivery timings for, the projects in the planning horizon. Additional requests for functionality are slotted into the definition and scope of individual projects on the basis of technical fit; the attempt is to amalgamate as many technically-related changes as possible in a single project.

For a goal-oriented programme, the notion of meandering tends to be reflected in a ‘network’ made up of a high level WBS for the projects, usually on sheets of A3 paper, punctuated by a series of critical decisions on direction or ‘specification’. These decision points are called milestones, though they perform a far more crucial role than their project counterparts. Experienced programme managers tend to define projects with much shorter durations and more restricted scope, and plan projects to allow for possible changes should they have durations covering two or more decision points. This practice tends to be technically (e.g. resource utilisation) less efficient, but enables the project management planning techniques to be applied to projects and gives the programme manager greater control. Also, a fundamental implication of the decision-based approach is that the notion of change control, as understood within a project environment, is not appropriate at the programme level. It still applies, and possibly more rigidly, for projects within the programme, but the programme ‘design’ has the in-built mechanism for incorporating change. These practices are not a shortcoming in the programme manager’s ability to define (precisely enough) and plan (in sufficient detail) the programme, but reflect the inherent uncertainty associated with the programme.

Risk analysis and management

Risk analysis at the project level is about assessing at the outset the likelihood and reasons why a project might not meet its time, cost and quality (or performance) objectives, and monitoring progress throughout its life cycle. Risk management includes identifying where problems might occur, having contingency plans in place and taking appropriate preventive and remedial actions when required. The focus tends to be on ensuring the progress of the project and achievement of the specific project objectives.

Risk analysis and management at the programme level tends to address wider issues. Any investment should fulfil at least two functions: generate benefits (e.g. profits) over an expected period of time; and maintain or enhance the organisation’s competitive position. Traditionally, the project client does both, but where a programme structure exists he/she may focus only on the immediate benefits. This is particularly the case for heartbeat programmes where the funding clients justify their expenditure in terms of additional profits to be made by their units or divisions.

Key risks such as technical obsolescence and curtailed ability to compete in the future tend to be addressed by the programme organisation.

It might be argued that the focus of risk analysis and management at the programme level might usefully be on
how effectively the programme is enhancing the organisation’s competitive position. The key issue is: what constitutes failure in strategic terms? Clearly, the nature and content of the programme will determine the extent to which this is feasible or useful.

The relevant techniques appear to be those associated with strategic management and benchmarking. Strategic management techniques, such as competitor analysis and the identification of key competitive dimensions, shed light on where the organisation must strive to be at the leading edge. Benchmarking is a means of establishing an organisation’s relative position along a number of parameters, such as product performance or service delivery. These techniques inform, in competitive terms, on the required degree and pace of improvements and/or the critical performance targets for new developments.

This conception of risk management would apply to all configurations. A portfolio programme would have to address (but not necessarily determine), for instance, whether an IT programming language or methodology is the right way forward, or whether it is better to specialise programmers, and gain immediate productivity benefits, or give programmers wide experience and thereby gain longer-term flexibility. Contingency planning is also affected; instead of focusing on alternative means of achieving the same end deliverable, programme managers and clients would be expected to focus on how essential skills and capabilities can be developed and put into place.

This conception of risk analysis and management is obviously a much wider and technically complex brief, requiring a combination of disciplines.

**Monitoring and control**

A core element of programme management is tracking progress on projects and taking action. Monitoring the financial spend and resource utilisation is relatively straightforward since they are additive across the projects over time. It is a matter of technical convenience how and in what format the information is collected. The continuity of a programme facilitates the analysis of the business benefits realised by project deliverables, and the use of this information as an input into the planning and execution of current projects within the programme. For a goal-oriented programme this may be essential feedback in determining future direction. For a heartbeat programme this may help to prioritise requests for additional functionality, given the likely over-demand and sometimes conflicting requirements for additional functionality.

Another element of monitoring and control, which links with the discussion above on risk management and control, is the extent to which the project deliverables are creating competitive advantage, as far as is warranted and feasible. Competitive benchmarking is a key technique for this type of monitoring and control, although it appears to be rarely used to its full potential.

**Key issues**

As must be clear from the above discussion, programmes and projects are different in nature and form. The relationship between a programme and a project is not the same as the relationship between a project and a work package. If it were, then the programme would essentially be a large project.

A key lesson which emerges from studying organisations which use projects and programmes extensively is the importance of not slipping into the implicit view of programmes as large projects. The temptation to regard programmes as variations of projects is understandable, given their common origins and the absence of a coherent and widely recognised body of knowledge on programme management. The situation can be made worse by the inappropriate application of the programme ‘label’ as a way of furthering personal agendas or other ends. Initiatives and ‘scopes of work’ which are essentially projects are sometimes designated as programmes to enhance the status of managers responsible for them or to get around funding limits. As the practice becomes commonplace, the result is often that many so-called ‘programmes’ exhibit all the characteristics of projects. At an aggregate level the distinctions are reduced. Furthermore, managers who have colluded in the ‘misclassification’ of projects as programmes either reaffirm their belief that the differences are small, or are reconciled to that belief by thought processes, of which they may not even be aware, triggered to reduce cognitive dissonance.

The outcome, at an organisational level, tends to be a blurring of the distinction between programmes and projects. Consequently, the organisation tends to shoe-horn programmes into project level thinking and the benefits are lost. For instance, senior managers, unfamiliar with the details, variety and nuances of programme management, may expect programmes to be planned to the same level of detail and with the same rigour as projects using the conventional project techniques with which they are familiar. This either destroys the flexibility programmes can provide, or leads to programme managers, who resist or appear unable to comply, being regarded as inept. Alternatively, senior managers may want to measure progress in terms of expenditure and want expenditure to be aggregated across programmes using irrelevant techniques such as earned value analysis. Typically, they pay little attention to the role programmes play in realising the organisation’s strategy and hence the progress being made in strategic terms.

A second issue is the presumption of programme management as a uniform, homogeneous discipline, neither recognising nor allowing for the variations in configurations. The resulting tendency is for senior management to vest the same level of authority with the programme manager and team, and consequently expect the same level of intervention in project activities. For instance, programme managers of portfolio programmes may seek to take over the project client role and control ‘programme’ budgets tightly. This is seen as unnecessary and unhelpful interference by project managers and project clients. Programmes exist because they can generate benefits over and above those which projects can generate on their own. Portfolio programmes are particularly prone to the accusation of value subtraction.

Considerable attention needs to be given to processes and metrics for tracking value added by the programme infrastructure, which consumes resources itself and through the imposition of some additional bureaucracy on the projects. If a project within a programme delivers according to its plan, it does not need necessarily that the programme has added value. Comparative techniques are needed whereby a ‘without programme’ scenario is created as a benchmark for evaluating programme performance and value added. This would have the additional benefit of focusing the programme manager’s mind on what should be done and which interventions are likely to generate benefits.
Summary and conclusions

The emergence of programme management as a distinct discipline reflects project management's strength and appeal as much as its shortcomings. As the number and complexity of the challenges facing organisations has grown so has the tendency to adopt project management as the preferred vehicle for change. As the traditional techniques and structures have been flexed and adapted to cope with uncertainty, multiple-related goals and the speed of change, something quite distinct has sprung up: programme management.

The techniques and approaches which are at the core of programme management as a discipline are not well documented or established, yet are being practised tentatively by managers. Because of its origins and the multiple needs it serves, programme management exhibits as much variation as commonality. None the less, a core can be discerned and it is clear that programme management offers significant potential for the next millennium. Extracting the full benefits will require a recognition of the uniqueness and distinctiveness of programme management; without this recognition there will remain a tendency to leverage inappropriate project concepts and overlook or even stifle the nascent programme level concepts.

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