ISSUES IN PROGRAMME INTEGRATION

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The paper examines, from the perspective of a major service industry, the concept of "programme" and how programmes interact with each other and with the operational or business-as-usual work of the organisation. It proposes two broad categories of 'delivery' programmes and 'platform' programmes, and suggests that interactions between them might beneficially be regulated by natural criteria which are very similar to the commercial considerations that regulate transactions between independent trading entities. Limitations to this analogy are discussed and corporate regulatory mechanisms suggested.

Programmes and projects

The term "programme" is used to define a grouping of projects, either for purposes of coordinated management or simply as a hypothetical construct to facilitate aggregate reporting at the strategic overview level [1]. In addition to these structural distinctions there may be fundamental differences in the organisational functions served by programmes. These functions may be grouped under two primary categories: "*platform*" programmes and "*delivery*" programmes, concepts which will be developed below. A third variable which influences the consideration of programmes is that of size, measured by the demand for resource of all kinds.

The component projects which together make up a programme will themselves be composed of lower-level work packages, sub-projects, or other project-type work activities (*pwa*'s), which will have dependent relationships of various kinds with other *pwa*'s, both within their parent project/programme and with other work going on in the organisation. These relationships may be complex and are potentially problematical, especially where the work is not recognised by all players as occupying a position in a project/programme hierarchy, with all that this implies about authority structures and ownership [1].

Regulation of the interactions between programmes or their components is necessary in order to monitor contribution to strategic objectives, to promote cooperation and resolve conflicts, to prioritise the use of resources and to inform high-level business planning functions. Such regulation, unfortunately, has a tendency to create bureaucratic overheads of reporting requirements and, perhaps more seriously, to inhibit creativity and entrepreneurial initiative amongst the programme teams. The latter is a serious issue in the highly marginal economic circumstances of the late 1990s and many management writers have drawn attention to the benefits of devolving decision-making to those with first-hand knowledge and expertise (eg, [2, 3, 4]).

Managing complexity

Because relationships between programmes can be complex, and the environments in which programmes are implemented contain multiple interacting influence chains, it is no longer feasible for central or corporate functions to hope to maintain control over all aspects of a large organisation's operations [5]. Controls which have traditionally been applied at the corporate level to regulate or arbitrate programme priorities and conflicts may become unworkable when the number, size and complexity of programmes outstrip the capacity of individual minds, however brilliant, to consider all factors holistically.

Deconstructionist techniques, of which the work breakdown structure (WBS) is probably the most familiar, allow more or less homogenous entities such as projects to be sub-divided into components which are small enough to be, literally, manageable. The assignment of components to different managers allows a focus to be applied which brings each work element within the intellectual scope of a manager who can develop a detailed understanding and thereby exercise a degree of control which will be beneficial to the project. The benefit to the wider programme and to the parent organisation is

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gained indirectly: good management of the component contributes to project success, which contributes to programme success which benefits the organisation. Cascaded awareness and understanding of corporate strategy has potential to enhance these benefits.

However, deconstruction inevitably risks losing control of the holistic project system. Project managers (normally) accept this and concentrate on ensuring that the work elements are being locally managed in an acceptable way, and on regulating the interactions between the work elements. This is a realistic approach because a project, even a major one, has delimited horizons defined by the predetermined criteria of project success. This provides a "natural" framework of constraints which guide and inform the participants in their day to day decision-making and is the basis for arbitration when agreement cannot be reached between peers.

A programme also has delimited, though wider and perhaps less clearly defined, horizons. As a grouping of projects the programme bridges the gap between the essentially inward-looking project management culture and the wider organisational context. The fit of the organisation's entire portfolio of programmes into the overall business activity takes this a stage further and presents integration issues which require an intellectual or theoretical framework to inform any regulatory activity.

Hierarchy, devolution and control

It has been argued [1] that all project-type work activities (*pwa*'s) display *self-similarity*. That is, programmes, projects, sub-projects, work packages, etc., all have similar characteristics and are distinguishable only in terms of scale, which in turn is meaningful only by reference to other, associated, *pwa*'s.

This principle strongly suggests that corporate-level interest ought to devolve day to day management of programme interaction to the programme and project managers most closely involved, in order to maximise the benefits of focus described above. However, just as intra-project transactions are guided by a common desire for project success, and transactions with project contractors operate within a framework of law and custom, so inter-programme transactions, which are here assumed to be mainly transactions between members of the same overall organisation, need a framework of guidance within which to operate.

The need, then, is for an effective approach to regulation that promotes optimum effectiveness by balancing essential controls and demands for monitoring information against maximum freedom for programme managers to apply their detailed specialist and local knowledge in pursuit of programme objectives.

Harnessing commercial criteria

One of the most effective regulation regimes is that of commercial imperatives. Any entity, whether a sole trader or a multinational corporation or anything in between, which can continue to exist and prosper only if it can sell its output to another party, will make decisions geared towards meeting that "market need". This applies to all levels of decision from long-term strategy to the minutiae of daily transactions. The need to win and retain customers, moderated by the effects of competition, results in pressure for economy and efficiency in production and aversion to the expenditure of any effort which has no identifiable customer.

Of course, without constraints of some kind the intrinsic self-interest which is the primary guiding principle of "market-force" regulation of this kind may produce anti-social effects, especially where there is inequality between the parties. Such inequalities are commonplace in the commercial world. Major high-street stores or supermarket chains may have sufficient buying-power to be able to dictate terms, quality and price to their suppliers. Similarly, there are examples of suppliers with such a dominant market position as to be able to set their own terms and conditions of sale to a more or less captive market. The latter situation is generally regarded as unsatisfactory and tends to attract political action to change the balance, not always with success.

Trading entities are therefore subject to restrictions imposed by law and custom, as well as by contractual terms agreed between them. There may be disagreement about the extent of desirable restraints on trading entities and the resulting debates may lead to changes which often reflect the political complexion of the environment in which trading takes place. The ultimate regulatory body in this case is government (local, national or supra-national).

A further effect of leaving all supply functions to market forces alone is that responsibility for meeting needs which have no obvious commercial value to individual trading entities may not be accepted by

anyone. The social effects of these deficiencies may be serious and political debate about how, or if, society should deal with them can become heated.

The extent to which commercial imperatives can or should be used to regulate intra-company transactions is subject to a constraint that does not normally exist in the wider commercial arena, namely, that competition which results in the destruction of one or more of the competitors would normally be seen as undesirable and damaging where those competitors are member units of the same organisation. However, the more positive features of commerce, such as a need to identify and satisfy a “customer”, a drive to eliminate waste and inefficiency, and the careful evaluation of investment propositions for commercial viability, may all be applied to internal transactions. Some of these criteria are discussed in more detail below.

Two programme types

It is possible to distinguish two qualitatively different kinds of programme, which will be summarised here as “delivery” and “platform” programmes.

Delivery programmes (*Figure 1*) are those whose output results *directly* in an inflow of funds to the organisation. Typical (but not definitive) of such programmes would be product development and introduction activity, work done under contract for clients, or the construction of facilities for the use of which fees or charges can be obtained from sources outside the organisation.

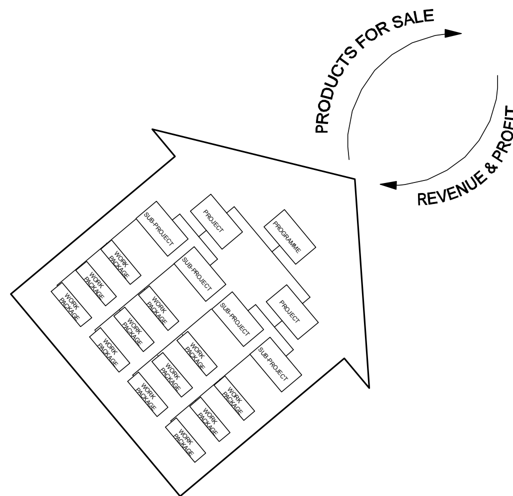

Figure 1: Delivery Programme

The focus of delivery programmes is external, and market-referenced criteria are used for investment appraisal when deciding to devote resources to such programmes.

Informing and moderating the basic question “can this be done profitably?” will be issues of corporate strategy, market strategy, portfolio planning, competitor analysis, market intelligence, and sales projections. Technical innovations may well have played a part in initiating the programme but the willingness of customers to buy the output at a price which shows the organisation a profit will always be the principle upon which programme decision-making is predicated. In this sense the issues are simplified for the participants because there is a clear framework within which problems must be resolved: no-one can force the customers to buy so all the effort is directed towards making the programme output as saleable as possible. This effort will be largely wasted unless the marketing work has been done effectively; the potential customers and their attitudes and intentions must be explicitly identified before sensible decisions can be made [6].

Platform programmes (*Figure 2*) are those designed to improve the organisation’s infrastructure. They are enabling rather than directly revenue-enhancing. Typical (but again not definitive) of such programmes would be the building or equipping of new production facilities, new factories or production lines, or major organisational change activities such as business process re-engineering or quality initiatives.

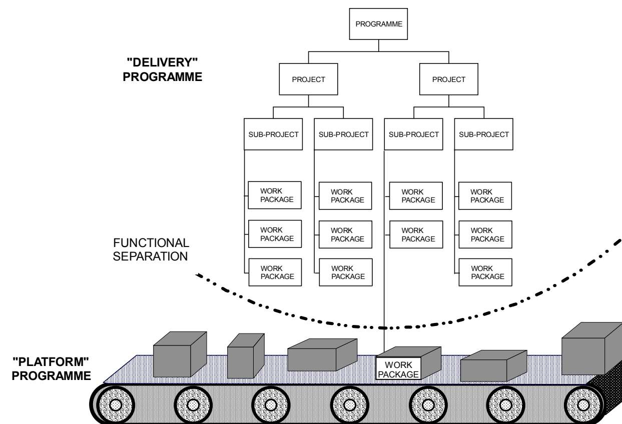

Figure 2: Platform Programme

The focus of platform programmes is internal, and the investment appraisal criteria tend to be more problematic, since ways must be found of assessing the likely return on the proposed investment. Sometimes the benefits will be relatively self-contained, such as measurable reductions in costs for comparable outputs (although such projected benefits must always be adjusted by a "credibility factor"). For most such investments, though, the benefits will only be realised through delivery programmes which utilise the outputs of the platform programme as their inputs, or "raw materials".

It is not always easy to identify platform programmes for what they really are. Their structures and prospective outputs can often appear very similar to the "business-as-usual" work of functional or operational departments and they may be evaluated by criteria which are meaningful for such departments. There is an increasing trend towards adopting deconstructionist approaches to the evaluation of performance within organisations; a trend which is reinforced by the Quality movement [7, 8], especially where prestigious awards such as the European Quality Award [9] are available. Similar influences are exerted by "scorecard" approaches, which try to ensure that internal objective-setting and measurement covers the full spectrum of business activity rather than being skewed towards one particular aspect, such as financial measures [10, 11].

In order to distinguish complex routine work activities from true programmes, clear programme definition is essential. Since "programme" is usually defined as a "group of projects" (with various qualifications) it follows that precise definition of the constituent projects will represent an expanded statement of the programme definition. It is at this level of detail that comparisons can be made with business-as-usual and explicit decisions made about the status of any specific activity. In the end a programme should be capable of being completed and its end-to-end performance assessed separately from other work, and it is this which finally distinguishes it from ongoing operational work. This capability to assess any bounded work system, such as a programme, as an entity may not exist in an organisation. Identification of a programme by the characteristics discussed above may therefore depend upon the organisation's ability to recognise and deal appropriately with them as much as upon factors intrinsic to the programme itself.

Having defined a programme, the criteria for deciding whether to implement it or not can be determined. For platform programmes this presents a new area of uncertainty. Often, an attempt is made to estimate the likely external market for the outputs of a platform programme by trying to make connections between those outputs and external customer behaviour. In effect this by-passes the role of the delivery programme. Investment appraisal is extremely complex because the appraisers have to take into account not only the factors already listed for delivery programmes (ie, corporate strategy, market strategy, portfolio planning, competitor analysis, market intelligence, sales projections. etc.) but also the commitment and enthusiasm of the product management, marketing and sales departments for what may well appear to them an unexciting "factory" initiative.

There is also a need to assess the probability of successful implementation on two levels. It has proved difficult enough to make judgements about the probability of successful programme completion in relation to one programme [12]. When that success is consequential upon the success of perhaps several dependent programmes the complexity, and hence the difficulty of the judgement, increases exponentially.

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Making contact

The difficulties of making sound decisions in regard to platform programmes can be simplified, and management attention productively re-focused, if the criteria for their appraisal are as similar as possible to the criteria governing equivalent decisions about delivery programmes. One approach to this is to regard the delivery programmes which will, might or could utilise the output of the proposed platform programme as the internal market for that output (*Figure 3*). The appraisal criteria are thus examined, not at second hand, but as functions of a direct relationship.

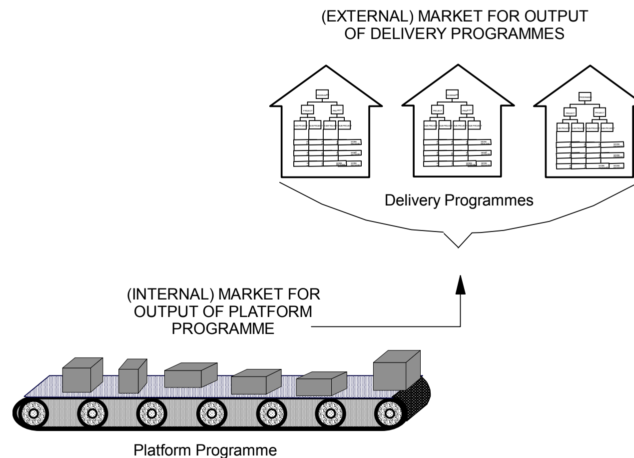

Figure 3: Programmes and Markets

The proposer of a new platform programme is not faced with assessing the external market for its outputs, with all the complications that implies, but only with confirming that potential ‘buyers’ exist for those outputs within the organisation. Those potential buyers are assumed to be better placed to decide what their needs are likely to be, having regard to the external markets in which they operate and which they understand.

The interaction between the two programmes is thus regulated by what might be called *localised commercial criteria*. Clearly, one of these criteria will be the price which the delivery programme will pay for the outputs of the platform programme. Platform programmes must be required to show a proper return on investment and this implies that their outputs will be ‘sold’ at prices and in quantities which enable such a return to be demonstrated.

The process is essentially one of commercial judgement on the part of the platform programme “owner”, or champion, but is both simplified and complicated by the special nature of the relationship between internal ‘supplier’ and ‘customer’. Because the platform and delivery programme both belong to the same parent organisation it is considerably easier for the developers of the platform programme proposal to make accurate estimates of their potential market. Organisational politics notwithstanding, they can normally expect to be party to the strategic plans and intentions of the delivery-focused parts of the enterprise and to have a clear idea of the ‘competition’ they face in the form of alternative ways of meeting delivery requirements.

The price which the delivery functions can afford to pay can be made explicit, enabling realistic calculations to be made of the viability of the proposed investment. There is thus much less danger of investing in programmes which subsequently fail to find an adequate market. (Of course, the delivery functions might have mis-estimated their own markets, but this can happen in the case of external customers too).

The complication to this otherwise comfortable arrangement is that there cannot be a true ‘contract’ between two parts of the same enterprise. The ultimate constraint which operates upon commercial transactions; ‘fulfil the contract or be sued’, does not apply here. Even where forms of internal agreement exist, there will often be extreme reluctance on the part of the corporate management to enforce such agreements if to do so would result in damage or loss to one or other of the parties. Clearly anything which hurts one of the members hurts the whole organisation, and is to be avoided. Nor may the raw commercial reality ‘get your market right or go out of business’ apply in any meaningful sense, although something similar could operate in the form of closing down an ineffective department. In addition there may be a temptation for corporate management to impose, or to accede

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to pressure from one of the parties to endorse, some form of price-fixing. If this happens then the localised commercial criteria effectively cease to operate.

The issue of relative power and size of the two parties applies in the intra-company scenario as it does in the outside world.A platform programme may represent a level of investment by the organisation which is vastly disproportionate to that involved in any individual delivery programme. To avoid corruption of the normal commercial criteria for decision-making by undue pressure from the more powerful player, impartial regulation by authority, in the form of corporate management, is required.

Another ingredient which may be missing is a mechanism for funds to be surrendered by one party in return for work done or goods supplied by the other, in a realistic simulation of market functionality. All trade is based upon the simple principle of exchange and to be meaningful intra-company trading must have robust systems of internal purchase. These may in turn require significant development of accounting processes and computer systems.

Conclusions

The outputs of ‘delivery’ programmes serve external customers and result in inflows of revenue to the organisation. Because of this, it is relatively easy to identify the criteria by which they may be appraised. The outputs of ‘platform’ programmes, on the other hand, form the inputs or raw materials of delivery programmes and are therefore separated from the external sources of return on investment. If this essential difference is recognised then a form of market appraisal, based on localised commercial criteria, can be applied to platform programmes and their success can be judged in financial terms.

Although requiring an infrastructure of suitable accounting mechanisms, and a regime of detached regulation by corporate management, this perspective on programme management enables necessary decisions to be made by those with the most specialist knowledge and understanding and the greatest focus on successful outcomes. Benefits therefore accrue both to the programmes and to the wider organisation.

Opinions expressed in this paper are those of the authors and should not be assumed to represent the policy of BT or any of its divisions.

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