From projectification to programmification

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Abstract

This paper considers two key themes from the Rethinking Project Management Network activities: projectification and managing multiple projects. Following analysis of cases presented during network meetings, the findings are set in the context of the extant literature, and discuss the development of the concept of projectification over the past decade. Three key conclusions are drawn from this work. Firstly, projectification has considerably extended the definition of 'a project' way beyond the current definitions in the literature. Secondly, projectification has not been a panacea for individuals or organisations. Lastly, during the decade reviewed by this paper, we have seen the establishment of programmes and portfolios of programmes as a mechanism for managing in organisations. This represents a developed phenomenon we have termed *programmification*. All three of these conclusions have implications for research and practice, which are reflected in a research agenda and specific research questions.
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1. Introduction

''Nowadays, it is hard to imagine an organisation that is not engaged in some kind of project activity. Over the past decade, organisations have been turning from operations to project management as part of their competitive advantage strategy''

It is now more than a decade since the publication of Midler's article on 'projectification of the firm' [1] and since Pinto and Kharbanda [2] announced that project management was becoming *'the wave of the future in global business'*. They went further and suggested that project management might replace traditional functional management as the key to competitive advantage in the 21st century. The quotation above from PWC does indicate that their forecast appears to have been correct. However, the process that we now understand as 'projectification' was

by no means novel even in 1995. The novelty was not in the trend to organising work through projects but in the organisational changes that accompanied this trend. Up until this time, they had gained little attention from management researchers not generally associated with Project Management.

In this paper, we review the evolution of the phenomenon of projectification, and show how the issues associated with it have developed in the past decade. As a result of the enquiry described here, it is noted that there appear to be few limits to activities or tasks that are termed 'projects' today – an extension of the idea of projectification. The organisational effects of projectification are reviewed and it is shown how there is an apparent dichotomy between the very mangerialist ideal of project as a means of control, and the claimed benefit of flexible, less bureaucratic structures that accompany projects. It is clear that many of the problems identified for projectified organisations in 1995, are still evident. Lastly, it is noted that in the same way that projectification became of interest to management researchers in the mid to late 1990s, the use of programmes,

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or portfolios of programmes, represents a phenomenon of at least equal importance today. This phenomenon we have termed 'programmification'. Like projects in the 1990s, this is not new, particularly in the limited context of the PM literature. What is new is the extent to which this is being used today (see e.g. De Reyck et al. [3]) and the accompanying level of opportunity for management research.

This paper is based on work carried out as part of the EPSRC Rethinking Project Management Network (www.rethinkingpm.org.uk) and includes findings from cases studied during the network activities. The outcome of this consideration is a research agenda for both projectification and programmification. The authors of this paper have a range of perspectives on the subject of projectification, including an operations/process view, an organisational/critical theory view and a pragmatic view of projects as a set of managerial tools and structures for innovation and change.
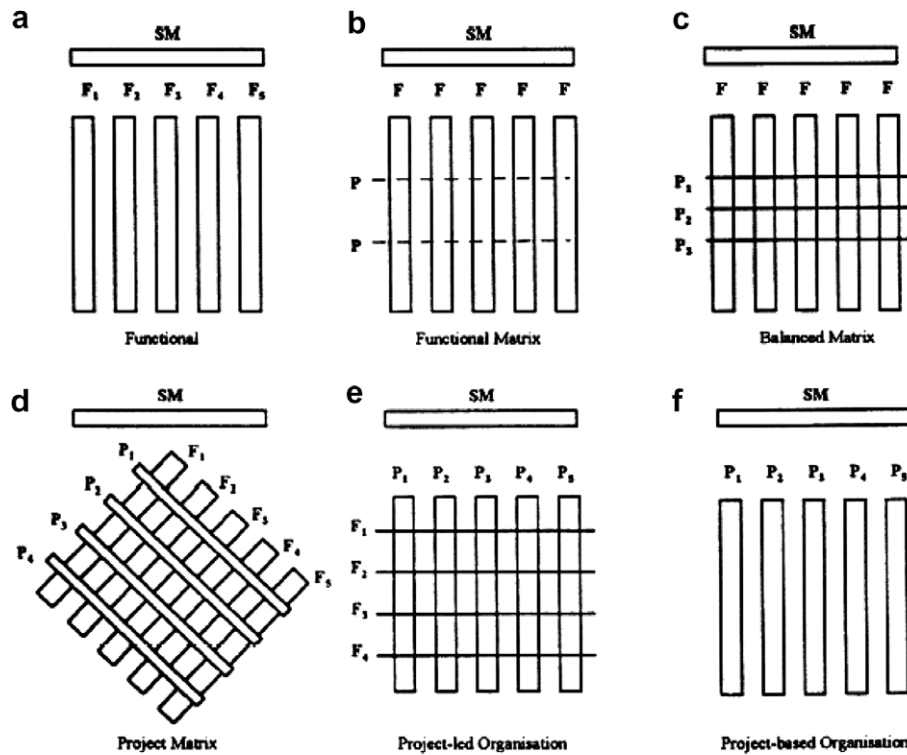
2. Background

Numerous commentators have noted the contemporary surge of interest in project organising and project management, and particularly the extent to which this interest has spread beyond the traditional sectors of construction and engineering [4–8]. Sydow et al. [9], for example, have noted how large firms are re-organising into less bureaucratic, more adaptable and flexible project-based units. Davies, Brady and Hobday [10] suggest that organisations in all types of industries are finding that traditional organisational structures, including functional departments, business units and divisions set up for maintaining high-volume throughputs of standardised products and services and for making decisions in a relatively stable technological and market environment, are no longer adequate. In the rapidly changing and increasingly turbulent and uncertain environment they face today organisations are finding that some form of project organisation is better suited to the kind of one-off or temporary problems and opportunities that they have to deal with. Others suggest that projects are becoming larger, more complex and widespread [11,12]. Increasingly projects extend beyond the individual firm or organisation [13–15]. Furthermore, there is evidence of a more general reliance on projects [16], and that this extends beyond the boundaries of working life to a broader 'projectification of society' [17–19]. The projectification of society concept attempts to capture the colonisation of many quarters of life by project-related principles, rules, techniques and procedures, aspiring to form a new 'iron cage of project rationality' [20].

Consistent with the evidence of increasing organisational reliance on projects, is the increasing number of people whose working roles are being redefined as project workers and managers. Both practitioner and scholarly communities are experiencing the impact of this shift for employees and organisations [21,22].

Clark and Wheelwright [23] were among the first scholars to look at the importance of projects for the integration of business functions and dealing with the complex technological problems associated with new product development (NPD). Following Galbraith [24,25], who described a range of organisational forms ranging from pure functional to pure product or project form, they identified four basic organisational structures – functional, lightweight project, heavyweight project and project-based – for NPD. In the first two structures the project managers tend to be junior to the functional managers with little or no direct control of resources. In the heavyweight project structure, although functions tend to be coordinated across projects by managers, the project managers have high status and directly control financial resources and people for the project. In the project-based structure there is no formal functional coordination across projects – the whole organisation is dedicated to one or more projects while business processes are coordinated within the individual projects.

Drawing on Galbraith and Larson and Gobeli [26,27], Hobday and Davies [10] extend these four into six ideal types: the functional, the functional matrix, the balanced matrix, the project matrix, the project-led organisation, and the project-based organisation. Consistent with this analysis, PMI [28] define the last two categories in one as 'the projectised organisation'. Fig. 1 shows the differences between these six ideal types.

Midler [1] refers to projectification as the process which took place in a series of changes in the structures for organising new product development at Renault over a 30-year period as they moved from a functional (functional or functional matrix in Fig. 1) to a heavyweight project form (project matrix). He noted that during the 1960s, the structures were aligned with the classical functionally-oriented organisation. In response to competitive pressures (particularly time to market and manufacturability) there was a move to a coordination model for projects in the 1970s and then to dedicated project structures with heavyweight project teams in the late 1980s and 1990s. Alone, these changes are not particularly interesting as they follow a well understood route from lightweight to heavyweight project structures [29]. What makes such changes of interest is that these were accompanied by extensive organisational changes. The accompanying changes included the governance structures and the appointment of high-level project directors (imitating the structures used by Toyota for vehicle development [30,31]), and concentration on process rather than department/functions as the means to carry out work [32]. The additional empowerment of project directors was associated with a change in process, from the application of standard processes to a more entrepreneurial or adaptive approach. Again, this has been considered to be well-understood in the PM literature, as many models have been presented for such an evolution in the context of the level of Project Management maturity. However for management researchers, the accompanying changes in the power, politics, knowledge, norms and

Fig. 1. Different organisational structures. Source: Hobday and Davies [10, p. 125].

discourse of the organisation, have generated significant interest.

Amongst the norms that change with projectification is the nature of the communications. Specifically, rather than all communications being directed through the organisational hierarchy – nominally up the hierarchy until contact is made at functional head level (vertical communication), the existence of project teams simplifies the path – allowing direct communication between people in the same team (horizontal communication), even when they have been drawn from different functions.

The drivers for such changes at Renault were many – including new managerial strategies to enhance competitiveness. More generally, the attraction of projectification appears to lie in its promise to deliver 'controllability and adventure' [33]. Gee et al. [34] suggest that one of the characteristics of projectification is the reflection of the vision of a post-bureaucratic work order, and Raisanen and Linde [35] that it is a process that tries to encompass features including flat structures, "negotiative environments, teamworking networking, quality management, flexibility and customisation". Moreover, they comment that this is a 'new bureaucratization" (also [36]) and that an effect is the standardisation of PM practices. This is manifested in the formalisation of processes through the establishment of process manuals and managerial controls, as typified by the stage-gate process [37] and rebureaucratisation [22]. At a higher level, the rise in the influence of the professional institutes and the codification of accepted practice into bodies of knowledge is evidence of an increasing importance of process.

The influence of codified practice is in the attempt to 'learn before doing' [38] on the part of organisations. In addition, an intended upside of projectification, is the opportunity for learning that arises through 'learning by doing'. A more developed project structure would encourage learning be passed from one project to the next, rather than dispersed in functions. Furthermore, it appears possible that not only is the process amenable to improvement

Table 1
Issues for Projectification

Issue	Implication of projectification
1. Structure	Increasing use of project structures
2. Governance	Move of power away from line managers to project managers /directors
3. Relative status between different functions, and the erosion of functional demarcation	Projects granted official status and legitimacy by the organisation; functional demarcations eroded; in heavier-weight project organisations, project managers have direct authority over resources
4. Communication	Predominant mode in project team will shift from vertical to horizontal, between people at lower levels in the organisation
5. Level of enterprise	Expected to be enhanced by reduced bureaucracy and functional controls, but managed through process controls; 'controllability and adventure'
6. Importance of project processes/ methodologies	Importance increased – often codified in bodies of knowledge and represented in artefacts (e.g. project manuals, standardised process models)
7. Process of learning	Intended to move from little learning due to dispersed knowledge, to single loop
8. The output or outcome – the level of benefits	Level of benefits needs to be assessed for each project. Level of benefits expected to rise following projectification
9. Career management and permanent structures; professionalisation	Project managers will develop a permanent 'functional' home – the project office; they will gain legitimacy by professionalizing their role
10. Supply networks and buyer–supplier relationships	Cheapest supplier to best partner in the project
11. The number of projects that are/can be managed	The number of projects and the relative proportion of organisational resources that they consume, will increase
12. Competencies required	Planning, resourcing and executing projects

over time, but also the rationale behind the process in a form of double-loop learning [39].

Consistent with the discussions being presented elsewhere in this Special Issue [paper 8], the issue of the developing profession is a consequence of projectification and the search for legitimacy by project managers.

The challenges that Midler identifies include the adaptation of the rest of the organisation and its supply networks to the new structures. Issues here include the role of corporate memory and the role of departments. With the pre-eminence of the project teams, there is a temptation to neglect the work of the departments. Renault's approach at the beginning of the 1990s was to provide a focus – the departments would focus on the long-term development strategy (cf. basic research in science) and presumably the repetitive processes associated with a large automotive business (Renault), and the projects that were carrying out the development work on new vehicles.

It is notable from the original papers that there are no figures demonstrating that the numbers of projects being undertaken in the organisation at different times in this period has changed, yet it is claimed that *"The combination of these strategies multiplies the numbers of projects to be managed"* [1]. Such evidence does come from Grabher [15], Helgren [40], Lundin and Soderholm [41] and DeFillippi and Arthur [42]. The quote from PWC at the start of this paper came from a recent cross-sectoral survey of 200 firms from thirty countries which examined how companies were using projects in their business and tried to assess the current state of project management maturity within organisations. These 200 companies were running a total of 10,640 projects a year worth in excess of US $4.5 billion. Over a quarter of this sample was running more than 100 projects each year. Further evidence on the number of projects that organisations are undertaking may be found in proxies. For

instance, such a proxy is the rise in the numbers of people becoming members of the professional institutes. This issue needs to also consider not only how many *are* managed, but how many an organisation *can* manage. Moreover, it is clear that there is a great diversity in the usage of projects as an organisational form, both in revenue-earning work and in organisational change. The PWC study shows the usage as: to implement IT change initiatives (73%), performance improvement projects (57%), software development (49%), new product development (45%), strategy deployment (43%), construction (31%) and research (15%).

Lastly, the issue of practitioner development and competencies required for projectified organisations is discussed elsewhere in this Special Issue.

The issues associated with projectification as discussed above are summarised in Table 1.

The challenges mean that projectification is not a universally beneficial process. This requires that a critical view be taken of the process and the outcomes, which will be the subject of a discussion later in this paper.

Finally, in addition to the characteristics and issues associated with projectification, there is a dearth of definitions as to what actually constitutes 'Projectification'. For the purposes of this paper, we will consider 'organisational projectification' to be 'a change in organisational and governance structure to increase the primacy of the processes of projects within a central organisation and its supply networks'. Societal projectification is where this change extends beyond the boundaries of the workplace. The focus of this paper is on organisational projectification.

3. The enquiry

The process of enquiry into projectification involved a methodology consistent with the other papers in this

special issue (see [43], in this issue), including sensemaking activities based on presentations of relevant cases from and with practitioners in a process of co-production of knowledge. Cases were presented from a major UK government agency, a government office, a regional charity, a major high-street bank, a large food supplier, and a multinational pharmaceutical company. Twenty-nine people, predominantly research-active academics, but also including consultants and practitioners then engaged in small-group discussions of the cases, which sought to capture the diversity of perspectives from the group, in the form of a series of learning propositions. These were then fed back to a plenary session which included the original presenters for the purpose of verification. The propositions were then taken on by the authors of this paper to put in the context of the extant literature and findings from the authors' own research, and generate a research agenda given the themes identified.

The cases and the themes are summarised in Table 2.

3.1. Comment

Case 1 demonstrates that pursuing projectification, as this organisation has done, is no panacea for success. The concept of the project was extended from development, through the service life of the equipment being purchased,

to disposal. In the cases of some platforms, this may be as long as 40 years. This is notable as it is significantly different from the concept of project employed in the other cases. Indeed, whether the current approach to managing projects is applicable with such a long timeframe, is indeed debatable.

In case 2, the projectification process is clearly progressing here, but is at a relatively early stage in the development described by Midler [1]. The preservation of the structural hierarchy and the apparently low level of empowerment of project managers demonstrate this. Key to the process is the attempt to gain overall managerial control through the process, and the gateways are just one part of this control.

In case 3, projectification has progressed *in* government, as has been seen in the previous two cases. Here we see this becoming problematic for those trying to work *with* government, where their organisations have not followed a similar projectification path. Indeed, this becomes a barrier, to beneficial social projects being carried out. Such a barrier is an unintended and unwelcome consequence of the projectification process, but one that is to be expected, given the needs of change to the supply chains identified by Midler. In this case, a voluntary organisation, as part of the supply chain to local government, was clearly struggling to make the necessary changes in its processes

Table 2
Summary of cases and issues

Case	Issues
1. Government agency	• High level of projectification • Apparent control provided by high levels of imposed processes • Poor performance in many projects • Project life-cycle up to 40 years in duration • Solutions being sought in programme management
2. Government office	• Development of highly structured approach including imposing gates on stages in projects in attempt to gain control • Found 'full rigour' of approach not yielding benefits required • Now encouraging a 'step back' from full application of approach • Moved focus to establishing capability and standards in programme management
3. Regional charity	• Clash of approaches between funding agencies (projectified) and fundees (low level of projectification) • Projects represent unit of funding, contrasted with social change requiring commitment beyond finite projects • Project funding being restricted to those who know about it and have the resident capability to apply for it (some level of projectification)
4. Bank	• Projects initially not delivering business requirements • Focus on individual project level caused near chaotic response (lack of clarity of objectives, competing priorities, large number of projects started but never completed) • Project management viewed as 'home for difficult people' • Implementation of 'strategic programme management' led to reduced number of projects and better delivery of business benefits • Post-implementation, project managers regularly head-hunted by other organisations
5. Food supplier	• Projects delivering organisational change • Programme management instituted as 'Air Traffic Control' for projects (track 'take-offs and landings') • Organisational benefits claimed include control at a higher level with enhanced freedom at the operations level in projects
6. Pharmaceutical firm	• Individual projects were of less concern to senior managers than the pipeline of developments • Programmes were the level at which senior managers were acting, considering the overall values of key business performance indicators, including risk and benefits of the portfolio of projects and the allocation of priorities between projects to maximise the value of the pipeline. This results in the need for better real-time information in the attempt to stay 'in-control' • Challenge of slow pipeline, but rapidly changing market

and systems to fit with the newly projectified way of working.

Case 4, in many respects, echoed the story of development of Renault presented by Midler. However, it does go further. The consideration here is not about the role of individual projects, but about organisational change and operation through a portfolio approach to projects – through programmes. Indeed the practitioner who presented the case, described it in terms of a 'staircase of strategic change,' from project management, to programme management, to a strategic programme management capability to an intended future state of 'change management as a business strategy'. In direct conflict with the literature is the evidence that this higher level of development of projectification resulted in less, not more projects being carried out at any one time.

Case 5 demonstrated that implementing programme management was needed to provide sensemaking for the business – a means for managers to understand the scale and scope of what they were trying to do. The sensemaking of the business through a careful selection of new projects and monitoring of the progress of existing ones was taking place. In addition, the focus has not been on prescriptions for running individual projects, but on providing a framework which would provide checks at a high level on progress.

Case 6 is consistent with the above cases. The discussion about projects in these organisation was at the programme level, and the challenge was again for the senior managers to be able to make sense of such a large number of complex projects, for the stated purposes of making rational decisions on which options needed to be pursued. There was a process of ongoing change evident, consistent with the developments seen in the other organisations.

To summarise, key themes from the cases include:

1. The term 'project' is being used to refer to activities spread over a period of as much as 40 years. In contrast, an organisation was referring to projects as being as short as a few hours.
2. Projectification is not a panacea. The cases indicate that from the perspective of delivery, that projectification may not make processes more reliable or outcomes guaranteed. For instance, projectification is still problematic for supply chains, due to mismatched processes.
3. It is clear that there is a new opportunity for a separate research agenda here. Consistent with the discussion that surrounded projectification, there is an established pattern of organisations moving towards some form of programme management – a process we have termed *programmification*.

These three themes are discussed below and form the basis for the rethinking of the boundaries and content of 'project management' relevant to the topic of projectification that will be carried into the recommended research agenda.

4. Discussion

4.1. What constitutes 'a project'

Contemporaneous with Midler's account of projectification, is a view of the definition of projects, which now requires re-visiting given the evidence from the cases and elsewhere. If the core idea of projectification is that 'more' work is achieved through projects, are there any boundaries to the term 'project?' Does that then reduce its utility in description and understanding? This is important, as if tasks have simply been re-labelled as projects, then one of the central ideas of 'projectification' become allegorical rather than literal.

In considering the definition of a project, four widely-quoted definitions are:

- *"a temporary endeavour undertaken to create a unique product or service"* [44];
- *"A unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organisation to meet specific performance objectives within defined schedule, cost and performance parameters"* [45].
- "*a system of work activities for which there is a predefined outcome to deliver and an associated timeline with an end date*" [46];
- "*a set of activities with a defined start point and a defined end state, which pursues a defined goal and uses a defined set of resources*" [47] and which has cost, quality, and time objectives [47] and a *project life cycle* [47].

As shown in the cases, the term project is clearly 'live' – it is in daily use in organisational discourse and therefore we should expect it to evolve. This has implications for the level of clarity provided in PM discussions. The discourse leads to a variety of understanding about the practices or processes associated with it. However, the definitions now appear to be very limiting and out of line with the change in rhetoric of organisations.

Specifically, in common with a number of other capital goods sectors, the cases indicate an extension of projects into operations and decommissioning, and is resulting in some major changes in the positioning of suppliers in the value stream [48] as they take over activities previously carried out by their customers. In earlier supply contracts, the project was complete once the systems were handed over to the customer/client. These new type of projects called 'integrated solutions' projects [49] present a new extension of projectification by including activities in the operational phase of the use of capital goods. In contrast to the generic project life-cycle of four phases – concept, definition, execution, closeout [50] – integrated solutions projects extend the timescale of the project backwards into pre-bid or pre-offer stages and forward beyond the handover stage into the operational life of the system [51].

In contrast, there is evidence that even smaller units of work are being considered as projects. At this lower end of project duration, there is 'extreme projectification,' with relatively simple work tasks being undertaken as projects, possibly without establishing a temporary organisation in any definable form.

This change does give rise to challenges for the above definitions, including:

1. Temporality – all of the definitions above have the notion of a finite task. Where this task stretches over many years, the project no longer represents a 'temporary organisation' (cf. [41]). This does not distinguish them though from an ongoing operation, which from a process perspective, are thought to be markedly different. Very short projects would also question the notion of what constitutes 'temporary'.

2. Uniqueness – the definitions present the idea that there is a central uniqueness or novelty about project work. This was demonstrated to be counter-productive in the insistence on unique processes to accompany unique products [7] and indeed the level of concentration of firms on establishing basic processes for running projects seems to justify that there is an acceptance of this in practice. Consistent with this, Davies and Brady [52] argue that although the outcomes of projects may be unique, the same sets of capabilities and routines are required for their repeated execution. However, as described by Midler, once projectification is well established, it appears to be desirable to allow more entrepreneurial approaches to managing. This appears to be happening from the perspective of process variety. The definitions imply high levels of process variety. Standardisation of processes as part of early projectification will reduce this variety. Case 2 (amongst others) are now allowing a greater range of processes to be used by removing the constriction to use a highly prescriptive process in full on all projects. Process variety, it appears, will increase again.

3. Level of pre-determinism – the definitions all contain the notion that a project starts with a well-defined brief that elucidates in clear terms what is to be achieved, in what timescales and with what resources. In a few cases this may indeed be so, and indeed may even be desirable, but it is clear that this is not a widespread notion. This may be particularly unhelpful in the consideration, as if applied in practice it would exclude a significant number of project-type activities that didn't have this particular characteristic. Indeed, Case 1 does demonstrate this issue well – that the long time-scales for their projects do provide undesirable consequences in terms of lost flexibility and a team and corporate commitment to objectives that are unrealistic. Such leads to constraints on individual autonomy and creativity. Case 6 (pharmaceutical firm) similarly cannot predict to any great degree the outcome of trials from an early stage.

These three issues have implications for rethinking the definition of what constitutes a project.

4.2. Evaluating projectification

There is a clear diversity of expectations and levels of achievements with the process of projectification. It is a process that appears to have progressed un-checked and without the kind of evaluation that other management initiatives (e.g. as occurred with TQM – [53]) have received. Evaluating the maturity in PM terms of an organisation is one method of determining their level of projectification, but the causal links with improved organisational performance are yet to be established. Organisations may indeed be turning to projects as a means to secure business benefit [1], but whether this is being achieved needs testing. Abbey showed that they improved the delivery of business 'value' through the implementation of their strategic programme management approach, but this is beyond the scope of projectification.

An example of the kind of analysis that would be worthwhile here is the observation that accompanying projectification is a degree of formalisation. It is clear from the literature on events management, agile project management (e.g. [54]) and complex adaptive systems (e.g. [55]) that such formalisation can be counter-productive. That is not to say that the processes cited as being agile (or even *extreme*) are to be considered chaotic. There is a discipline here, but not imposed through a bureaucratic regime. Bureaucratic control therefore may represent one (low) level of projectification, but more advanced processes can result in a less controlling environment. This may present a useful example of the *paradox of control* – where managerial devices to control work may have to be removed, in the interests of obtaining beneficial results [56]. Bureaucratisation therefore may have benefits at one level, but is counter to some approaches being used (apparently) successfully in certain contexts.

Beyond direct quantification of business benefit, there may indeed be other benefits, for instance from having the capability to deliver projects, or simply to appear to be in control of activities. However, as with other organisational and operational changes, there are often unintended downside elements – for instance as was shown in the cases by a mis-match in processes within a supply chain, and the impositions of bureaucratic controls through PRINCE2. Further, the cases and evidence from other studies (e.g. [57]) show that project success is still elusive. The benefits are clearly not all the highly prescriptive PM literature would have us believe. Indicative results were provided by Thomas, Delisle and Jugdev [58] and Ibbs and Kwak [59] but these were limited in their consideration of the scope of what constitutes projects (as shown above) and in providing not just a quantification of benefits, but also downsides (as shown here).

4.3. The developing discourse about programme management

Dornisch [60], considers projectification to be part of the ecology of organisations and cultures, though there is little

to differentiate this from the evolutionary account of Midler. In addition, he considers that the analysis of western projects has typically focused on the internal dynamics of projects, rather than *'the relationships and movements between projects'* ([60, p. 309]). Dornish elaborates on the development of organisational PM from a state where project processes were totally undefined, and the project activity involved an effort to enact what was termed an *"'organizing principle' that will inform subsequent functioning of the project"* (p. 311). This demonstrates a very early stage of PM development or *maturity* that may be consistent with Renault pre-1960 (not covered by Midler). At this stage, projectification means a rationalisation, formalisation, proceduralisation and naming of activities as projects, presumably for the purposes of legitimisation and securing funding. Engwall [61] likewise recognises the utility of considering projects in context, including how they interact with other projects. The management of multiple projects creates a set of issues which goes beyond the problems associated with the management of single projects. The simultaneous management of a number of projects of different types and scopes presents particular problems, one major one being related to resource conflicts:

> "in a multi-project 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 projects is a complex process of balancing the (often-conflicting) interests of multiple participants" [62]

Programme management, or the management of a portfolio of projects, was a significant theme in four of the six cases presented to the Network, and is also pre-occupying professional project management associations such as the Project Management Institute (PMI) and the Association for Project Management (APM). A new standard for programme management will shortly be published by PMI, and APM has been conducting investigations into whether or not it should do the same. As Pellegrinelli [63] pointed out, the word programme can be applied to different kinds of activities. At one level, multiple projects or programmes can be considered simply as 'big projects'. This is not entirely without foundation – in some organisations, what they term 'programmes', would be classified as 'large projects' in other organisations (see e.g. [64]).

Consistent with this variation in definition of the unit of work, programme management is viewed by some as 'the management of multiple projects,' whilst by others as 'the management of organisational change through projects that bring about change' ([64]). Part of this variation is explained by the differences in the nature of the programme. For instance, the projects in a programme may be represented as a chain of projects – one occurring after another, a portfolio of projects taking place at one point in time, or as a network of interlinked projects [65]. These are shown in Fig. 2.
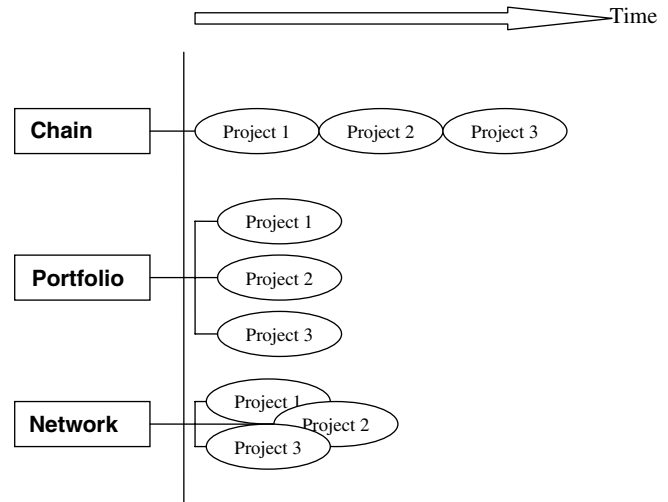

Fig. 2. Organisation of projects in programmes.

The emerging definition of a programme appears to involve the co-ordinated management of a series of interconnected projects and other non-project work, for the delivery of a specific package of benefits. Whereas it has been widespread practice for projects to be closed out when a product or service has been handed over to a user, a programme, at least in the emerging use of the term, can not be considered complete until the benefits from the product or service have been realised. Moreover, some organisations are clearly running portfolios of programmes – elevating the discussion to an even higher level in the organisation. This inevitably has two consequences.

Firstly, the separation of roles between client (who specifies the desired product or service) and supplier (who delivers the desired product or service) is compromised. The programme embraces both delivery and beneficial use or application. In this sense, rather than introduce a new category of projects called "integrated solutions", it might be more helpful to acknowledge that these are more appropriately considered to be "programmes". This depends on the maturity of the relationship between the client and the supplier. To begin with, integrated solutions work is considered to be projects because they are usually time limited (i.e. the service elements run for x years of operation after which they are revisited and subject to re-negotiation etc.) It is only after they have been re-negotiated (i.e. the supplier and customer have been round the cycle a few times) that they can be considered programmes. Ideally the supplier moving wants them to become programmes rather than a series of projects – they want to get out of the cycle of bids and projects into a continuously negotiated "programme" of activities, e.g. upgrades and maintenance associated with the product and systems being delivered.

Secondly, the attention to benefits inevitably involves a programme manager in negotiations with those senior functional and/or business managers who are responsible for the beneficial operation of the products or services.

Without the effective transition from "as is" to "to be" the product or service remains a "capability" – a potential source of benefits. It is not surprising that the set of personal attributes required of a successful programme manager differ significantly from those required of a successful project manager [66].

Andersen and Jessen [67] take the definition further, making a distinction between project management, program management and portfolio management. The first involves the management of individual projects; the second refers to a collection of projects with a common objective; the third concerns the management of a number of projects and programmes that do not necessarily share a common objective but are undertaken simultaneously. These three levels are evident in the cases presented.

The consideration of programmes for both organisational change and more generally as a way of working goes beyond the progression or 'maturity' of an organisation in project management terms [68], or in Midler's terms, in their progression in projectification. Such a progression has many facets, including an increase in intentional managerial control on the organisation. Programmes or portfolios of programmes are being used as a unit of activity in order to provide managerial sensemaking and control when running complex organisations. Under programme management, we should not necessarily expect to see an increase in the number of projects being run. There is however an additional type of strategic control of the number and type of projects being run.

From the analysis of the cases as a whole, different conclusions are possible. On the one hand, it could be said that programmification represents a more holistic approach to effecting fundamental and transformational change in organisations than projectification does. It begins to blur the boundaries between the kind of chunky, temporary work of projects and the regular operational work of "business as usual in the interests of moving from product creation to value creation. On the other hand, it could be said that programmification is driven by its role as a means of corporate indoctrination, which creates a new set of elites and sub-elites (project staff, project manager, project director, programme director etc) in otherwise relatively 'flat' organisational structures, and provides a means to create and assess the managerial legitimacy of individuals, for instance through their title.

Using the synthesised set of issues from Tables 1 and 2 contrasts the issues as applied to projectification with those of programmification (see Table 3).

In the rush to make sense of multiple projects, has the 'iron cage of rationality' [69,70] simply found a new inmate? Data from Case 4 suggests that their process of programmification was beneficial. However, this data is

Table 3
Projectification and programmification

Issue	Implication of projectification	Implication of programmification
Unit of analysis	Individual projects	Multiple projects, programmes and portfolios of programmes, alongside 'business as usual' work
1. Structure	Increasing use of project structures	Application of semi-permanent structures
2. Governance	Move of power away from line managers to project managers /directors	Move of power to those controlling the programmes or portfolios of programmes
3. Relative status between different functions, and the erosion of functional demarcation	Projects granted official status and legitimacy by the organisation; functional demarcations eroded; in heavier-weight project organisations, project managers have direct authority over resources	Functions less of an issue than relative status between projects and programmes
4. Communication	Predominant mode in project team will shift from vertical to horizontal, between people at lower levels in the organisation	Horizontal (within the team and between projects) and vertical (reporting to programme control)
5. Level of enterprise	Expected to be enhanced by reduced bureaucracy and functional controls, but managed through process controls; 'controllability and adventure'	Expected to be enhanced by mature processes
6. Importance of project processes/methodologies	Importance increased – often codified in bodies of knowledge and represented in artefacts (e.g. project manuals, standardised process models)	Established processes, possibly accompanied by reduced standardisation
7. Process of learning	Intended to move from little learning due to dispersed knowledge, to single loop	Across projects, potential for double loop learning
8. The output or outcome – the level of benefits	Level of benefits needs to be assessed for each project. Level of benefits expected to rise following projectification	Delivery of a package of benefits; 'value creation'
9. Career management and permanent structures; professionalisation	Project managers will develop a permanent 'functional' home – the project office; they will gain legitimacy by professionalizing their role	Hierarchy (project – programme manager – director) emergence evident in contrast to flat organisational structures in use elsewhere
10. Supply networks and buyer–supplier relationships	Cheapest supplier to best partner in the project	Uncertain the effect – area for further research
11. The number of projects that are/can be managed	The number of projects and the relative proportion of organisational resources that they consume, will increase	Managed, potentially reducing
12. Competencies required	Planning, resourcing and executing projects	Managing across projects and programmes

not amenable to a more critical analysis, and so this should be treated with care. Moreover, projectification has not proved universally successful in business terms, so as for projectification, the 'value' of programmification needs to be tested.

5. Conclusions and areas for further research

The three main findings from this discussion concern the definition of the unit of work (the project), questioning the value of projectification and the recognition of the phenomenon of programmification.

We conclude that the existing definitions of what constitutes 'a project' may not be a good fit with the discourse of practitioners. Further, that some of the implications of something being a project (for instance, the temporary organisation and the degree of pre-determination of outcomes) may not be consistent with the diversity of usage of the term in reality. This has occurred as a result of organisational projectification. It may be helpful therefore, to reconsider the actuality of usage of the term 'project' given this discussion. Indeed, one if left with the question, 'are there now any boundaries to what constitutes project work, and does it matter?' As happened with the term 'Quality' in the 1980s [71,72], the identification of dimensions of quality provided a clearer agenda for 'quality management'. A similar process would be beneficial for projects and project management.

The cost benefit balance of projectification to individuals and organisations has not been critically assessed. There is contradictory evidence here of such value. We conclude that such an evaluation, considering the widest set of factors would be beneficial. This has provide beneficial in improving our understanding of the effects of Lean Production, for instance, e.g. [73] and would be beneficial here.

Lastly, it is evident that a key issue of interest to organisations goes beyond the consideration of single projects. Consistent with the argument of Dornisch [60] and Engwall [61] we suggest that whilst project-level analysis is important and still has plenty of potential to explore, the multi-project level presents an area of great interest for both practitioners and scholars. The phenomenon of programmification we show has been established. It is important now that issues including those identified in Table 2 form part of a new research agenda. In addition, the whole phenomenon, like projectification, should be subject to rigorous and critical evaluation, in order that it doesn't simply follow the trajectory of previous management fads and fashions [74].

Some specific questions were raised during these discussions which may form part of future research, including:

Projectification

1. Are more projects really being carried than say, 10 years ago?

2. Does this represent a change in the nature of work, or simply a change in nomenclature?
3. Is this change restricted to certain sectors (e.g. automotive) or particular activities (e.g. new product development?)
4. What are the boundaries of what constitutes 'a project' today?
5. How should such a change or process be evaluated? Specifically, what are the costs and benefits of projectification?
6. What are the impacts of having a standardised process for all projects?
7. How do governance and organisational structures vary for different types of projects and what is the impact of such arrangements on the functioning of the project?
8. Do organisations centralise the management of projects (e.g. in a Project Management Office) or is it distributed in different divisions or departments?
9. Does the end customer (e.g. internal to the firm or external) impact the process that is used?

Programmification

1. What are the implications for power, politics, knowledge, norms and the discourse of the organisation of programmification?
2. What are the implications of projectification and programmification for external organisations, specifically, for supply networks?

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