

**DESIGNING ALIGNMENT AND IMPROVISING CHANGE: EXPERIENCES  
IN THE PUBLIC SECTOR USING THE SPRINT METHODOLOGY**

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**ABSTRACT**

*If information systems (IS) are to yield real benefits for organisations, it is critical that they support the business goals of the enterprise and that they are successfully assimilated into routine use by organisational members. The conventional solutions to the achievement of strategic alignment and the management of change in IS development are typically top-down, relying in both areas on a rational, planned approach. This paper describes a BPR framework, known as SPRINT, which adopts a different strategy. Following Ciborra (1997), it is argued that alignment is most effectively achieved when “designed into” the whole IS life-cycle (including evaluation) as an omnipresent issue of ongoing concern to all participants. Regarding change, an incremental approach is advocated, drawing on the improvisational change model of Orlikowski and Hoffman (1997). The paper provides an overview of SPRINT followed by a case study illustrating its use in a local authority on a project to re-engineer IS support for the authority’s decision-making process. The methodology has now been deployed on a number of projects, with generally positive results. This is adduced as strong evidence for the methodological validity of the framework, especially in the two key areas of alignment and change. Other aspects of SPRINT are discussed, in particular the use of methodology as a tool for knowledge management.*

## 1. INTRODUCTION

Two issues are crucial if Information Systems are to achieve real benefits for organisations. First, that the IS infrastructure of the organisation be clearly focused on supporting the achievement of the enterprise's primary goals. This injunction is often expressed as the need for alignment between the IS/IT strategy and business strategy (Lederer and Sethi, 1996; Reich and Benbasat, 1996; Simonsen, 1999). In essence, the issue is one of design, of knowing what the business requires and articulating these needs in terms of the design of the organisation's information systems. By contrast, the second issue is one of implementation: knowing what you want is one thing, delivering it in terms of working sociotechnical solutions is another matter requiring the careful management of potentially major changes to the organisation's structures and processes (Benjamin, 1993; Davenport, 1993).

Both issues are key, and both remain highly problematic, as the undiminished research literature on IS failure eloquently attests (Wastell, 1999). Articulating IS requirements in terms of business goals, for instance, implies that there is a clear consensual understanding of these goals. All too often, this is not the case. Goals are typically tacit, and embedded within established and unreflected practices (Ciborra, 1997; Checkland and Scholes, 1991). What is visible are the work processes themselves, with result that technological interventions all too often focus on these and yield at best marginal benefits; technology with the power to transform is used merely to automate (Hammer, 1990). Implementation throws up a further set of problems. A new IS implies organisational change, often substantial change: considerable energy is required to build the IT system, to train staff, to overcome scepticism, to set up and operate new organisational structures (Benjamin, 1993; Davenport, 1993). Even the best designed system can fail at this stage if the necessary drive and determination are not applied to bring about the changes in organisation that are required (Lyytinen, 1988; Sauer, 1993). Many IS failures are due to the inability of managers to appreciate the nature and degree of such changes and to manage the transitional process effectively (Serafeimisis and Smithson, 2000; Wastell, 1996).

In this paper, we describe a methodology which attempts to address these two key areas, of business alignment and change management. The method has some novel aspects and has now been used on a number of projects. It is timely to describe the approach and to reflect on the experiences that have accrued. The methodology is known as SPRINT (Salford Process Reengineering method Involving New Technology) and was developed collaboratively with the IT department of a local public administration, the City of Salford (a novel feature itself, which was seen as key to its adoption in practice). SPRINT has been strongly influenced by the philosophy of Business Process Reengineering (Davenport, 1993; Hammer, 1990) as BPR was felt to embody a set of precepts that are critical to achieving real benefits from IT investment, principally a concern to exploit the transformatory power of IT disciplined by the necessity to pay constant attention to the needs of the business. SPRINT represents the accumulation of many years of experience of the authors in the BPR field (Wastell et al., 1994; Warboys et al., 1999). It has also been influenced by recent thinking in the area of change management and strategic alignment, principally the need to adopt a participative, improvisational approach to change (Orlikowski and Hoffman, 1997) and a bottom up "design approach" to strategic alignment (Ciborra, 1997; Simonsen, 1999). Although developed in the public sector, there is nothing essential in the nature of the approach that precludes it from being applied, perhaps with some adaptation, in any business context.

SPRINT forms a key element in the City of Salford's recently elaborated Information Society Strategy (Salford, 1999). The Strategy's visionary aim is to harness the potential of IT in order to enhance local democratic processes and to improve the social and economic well-being of the people of Salford (through improved service delivery, greater social inclusion, and development of the local economy). The Strategy sets out 10 key work programmes involving specific initiatives such as "One-stop shops" and a move towards more flexible work patterns (e.g. home-working). IT is integral to all these programmes, and all are predicated on a philosophy of fundamental change in the way that the City operates. To underpin the initiatives, a strategic methodology was required focusing on the innovative use of IT to realise radical transformation; one of the work programmes was explicitly targeted at the development of such a methodology, which has come to be known as SPRINT.

## 2. SPRINT: GENERAL PRECEPTS

Before discussing the practical aspects of the methodology, the main philosophical principles underpinning SPRINT will be described. SPRINT has the following key characteristics:

Breadth of vision and depth of understanding: BPR projects are inherently complex in that many groups and individuals within the organisation will be directly or tangentially impacted. Recognising this, SPRINT stresses the importance of seeking out and examining all stakeholder perspectives in order to appreciate the complexity of the problem and the different views that people hold. SPRINT also advocates the development of a rigorous *evidence-based* understanding of processes. It is important to know what goes on now, why things are the way they are and what the important contextual factors are. Ethnographic methods (i.e. detailed, immersive investigation) are recommended to achieve this depth of understanding (Martin, Bowers and Wastell, 1997).

Learning and Knowledge Management: BPR projects are regarded as opportunities for organisational innovation. Learning and knowledge management are thus seen as the key to successful BPR and the methodology actively aims to stimulate innovative thinking and nurture radical ideas. Following Wastell (1999), BPR projects are regarded as Transitional Spaces, i.e. as “supportive learning environments” in which users are encouraged to reflect critically on current processes and experiment with new process designs (using various modelling techniques). To support the management of knowledge within and across BPR projects, extensive use is made in SPRINT of intranet technology. A Web-site is created for each SPRINT project which acts as a shared repository for the project’s working documentation and allows access to the experience and knowledge gained in other projects.

Flexibility and extensibility: A danger with methodologies is that they can become an end in themselves, with users following the method’s prescriptions in a slavish fashion rather than thinking for themselves (Wastell, 1997). To guard against this, SPRINT has been deliberately designed with a minimum of procedural structure; in essence, it comprises a tool-box of recommended techniques within a loose, general framework of tasks and phases. Users should be familiar with SPRINT’s structure, tasks and tools but they are encouraged interpret and adapt the methodology according to the particular circumstances of the project they are undertaking. For instance, if they think that some new tool or method is ideally suited to solving a particular problem, they are encouraged to adopt it and bring it into the framework.

Designed-in strategic alignment: SPRINT places considerable emphasis on the achievement of business benefits but eschews the classical top-down approach to achieving business alignment embodied in methods such as SISP. We concur with recent critiques of the rational paradigm (e.g. Hackney and Little, 1999; Ciborra, 1997) which stress the emergent, practice-based nature of the “strategy process”. Alignment is seen as an integral part of the ongoing process of BPR, not as something in advance of and separate from the design work itself. In Ciborra’s terminology, alignment is something that should be *taken care of* throughout the design process. SPRINT achieves this by exhorting BPR participants to address themselves to business goals at all stages in a BPR project, from goal identification in the analysis phase through to the establishment of rigorous mechanisms to track and manage the achievement of business benefits (Serafeimidis and Smithson, 2000) in the implementation phase.

A participative, sociotechnical philosophy: Blackler and Brown (1986) distinguish two paradigms that drive IT-based organisational change: The *Task and Technology* approach, in which technology is used Tayloristically to increase efficiency by deskilling and automating the role of the human agent, and the *Organisation and End User* paradigm, in which the emphasis is on the potential of technology to create new organisational possibilities and to augment the human role. SPRINT embraces the latter, which in essence reflects a sociotechnical approach to IS design (Mumford, 1986; Wastell and Newman, 1996). The importance of *user participation* in design work is emphasised by sociotechnical champions and is a key feature of the SPRINT approach. Although BPR has come to be seen as a sinister Tayloristic force, it is worth remarking that much of its founding philosophy is decidedly sociotechnical in spirit (see Davenport, 1993).

An incremental, improvisational change model: BPR is often associated with the idea of large-scale, rapid change. However, the idea that organisational change can proceed on a one-shot Lewinian basis (unfreeze-change-freeze) has been called into serious question in an IS context (Macreadie and Sandom, 1999). The demands on the organisation are potentially huge, in terms of human and technical resources (Benjamin, 1993) and the risk of resistance is high (especially in a public sector organisation with strong collective traditions). SPRINT rejects the idea of change as a discrete, convulsive event, imposed on the organisation. Our approach draws its inspiration from the improvisational change model of Orlikowski and Hofman (1997). Change should not be determined by a top-down plan, but rather guided by a set of business objectives, and enacted through a series of incremental steps emphasising continuous reflection and adaptation to changing circumstances. Each step should be seen as a learning experiment, in which a new IT-enabled process is implemented, evaluated and refined. The ethos should be one of excitement, fun even, not of fear. It goes without saying that a participative approach is key, with user-managers leading the prototyping process and end-users involved in giving feedback. Of course, a plan is required but only as a coordinating device and as means for managing progress; the plan does not drive the change.

### 3. AN OVERVIEW OF SPRINT

This section provides practical information regarding SPRINT. First, we will consider project organisation and management, including the roles that participants are expected to play. Details of the method itself (phases and tasks) are then given.

#### 3.1 People and Project Management

SPRINT recommends that two groups be established to manage a BPR project: a **Steering Group** and the **BPR team**. The former should include: the departmental director for all operational areas impacted by the project; the BPR project manager and Lead BPR Consultant; together with senior representatives from Human Resources (HR) and IT services. Leadership at such a senior level is critical; given the radical nature of BPR, it is vital that such commitment is made from all those departments that will be directly impacted.

Membership of the BPR Team comprises: a Senior User at deputy director level, who plays the role of Project Manager; a Lead BPR Consultant and supporting consultants; HR and IT experts. Those individuals at the operational level whose work will be directly affected by the initiative should be represented on the Team by one or more *Practice Representatives*. The rationale of the BPR team is to undertake the detailed investigative work of Phases 1 and 2 of SPRINT (see below) and to oversee the implementation activity in Phase 3. It is strongly recommended that the core team stay together throughout the entire project thereby ensuring continuity and ownership.

Members of the BPR Team are required to play two roles: an **operational role** (i.e. carrying out the technical work that is required) and a **review role**. The role of Reviewer is to examine BPR ideas that are made by the team, actively challenging conservatism in the project; reviewers should try to prevent the project from too readily taking an incremental, stepwise approach.

#### 3.2 Phase 1: Understanding Process Context

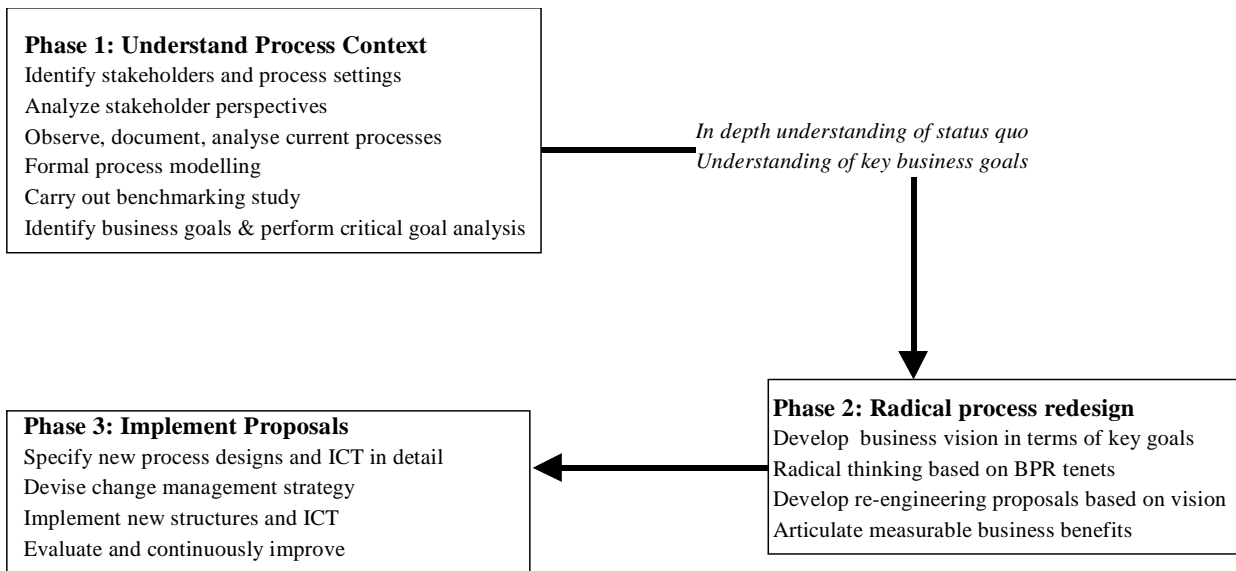
SPRINT comprises 3 main phases (see figure 1). Each phase is defined in terms of a set of aims, and there are a set of tasks within each phase intended to help the realization of these aims. Although the impression may be gained of a tightly defined structure, this is emphatically not the case. The division into phases and tasks is merely to provide a loose organisational framework to allow the work to be structured and divided up amongst the BPR team. There is no requirement, for instance, for tasks to be performed in strict sequence and there are no dogmatic injunctions on the use of particular techniques.

Phase 1 is essentially one of analysis. The aims are:

- to understand the business context of the BPR project by considering all relevant perspectives, and to analyse the effectiveness and efficiency of current processes in this broader context;
- to generate preliminary ideas for process improvements (technical and organisational);
- to help develop the business vision on which the detailed BPR proposals in Phase 2 will be founded.

The emphasis on understanding the business context is crucial. This forces the BPR team to stand back from the original remit which may focus too narrowly on a particular process or processes. “Zooming out” in this way will assist in identifying and understanding the real business goals that should be addressed and will lead towards the identification of more radical re-engineering opportunities.

Of the various tasks carried out in Phase 1, two require further comment. The construction of formal process models is a key feature of SPRINT. To this end, a modelling method known as *Role Activity Diagramming* (RAD) is proposed as the technique of choice. The authors’ previous BPR experience has demonstrated the accessibility and the efficacy of this simple method which makes use of a small number of relatively straightforward constructs (primarily Roles, Activities and Interactions). For a detailed description see Warboys et al. (1999).

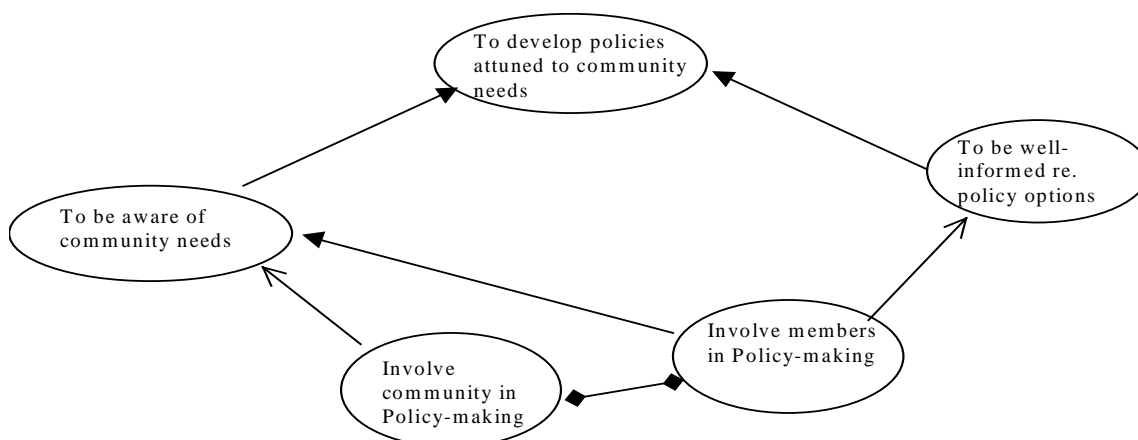


**Figure 1: Schematic overview of SPRINT showing phases and tasks.**

*Critical goal analysis* (CGA) is another important technique. This task constitutes the crux of Phase 1 as it is the primary means for addressing the alignment issue. CGA focuses all strands of enquiry on two pivotal questions: What are the business goals relevant to the process context? How well are they supported by the current processes and support systems? For each business goal, a number of key issues must be addressed, including: What is the goal? Who are the primary stakeholders? How does it relate to the strategic aims of the Council, especially to the themes of the Information Society Strategy? How well is the goal currently achieved and how should it be measured (i.e. what metrics could be used)? SPRINT recommends the use of a Goal Network Diagram to depict the set of goals and their inter-relationships. An example is shown in figure 2.

### 3.3 Phases 2: Radical Process Redesign

The analytical work of Phase 1 constitutes essential preparation for the second phase of SPRINT, the aim of which is to devise a set of process re-engineering proposals. These will embrace the use of IT to underpin new processes aimed at dramatic improvements in the City Council's performance, in relation to its general strategic objectives and the specific aims of the Information Society Initiative. The first "task" in Phase 2 is to develop a business vision in terms of key goals and critical success factors for achieving the goals. It is vital to assess the importance of each goal and the effectiveness of current process support. Although the articulation of a clear business vision might suggest a conventional top-down IS design and planning process, this is not how the business vision is intended to function. Its role is simply to provide a panoramic view of the organisation's key goals as currently understood and to enable a set of priorities to be established to guide subsequent design work. The BPR team lead the work, although key stakeholders also participate in this important alignment activity. A high priority goal is one which is judged to be important to the organisation but not well supported in terms of current processes. Table 1 from the case study furnishes an example.



**Figure 2: Part of the Goal Network Diagram for the Case Study. Links between goals are either positive (arrows) or inhibitory (diamonds).**

Having established a clear business context, the next task requires the BPR team to reflect, in a radical way, on re-engineering opportunities. The aim of BPR is to change the way the organisation operates by taking full advantage of the potentialities of IT to enable new ways of working. Innovative thinking can be stimulated in a number of ways: via literature research, the results of best practice investigations, existential reflection. Although it cannot be reduced to technique, SPRINT provides a set of "re-visioning heuristics" based on Hammer's early work (Hammer, 1990) to aid in the search for new ideas.

The end point of Phase 2 is a set of re-engineering proposals which embody new process designs (again using the RAD notation) enabled by the innovative application of IT. Crucially, each proposal must be supported by a detailed business case, including the specification of a set of metrics (ideally quantitative) to aid in the delivery of real business benefits and to establish an ongoing feedback loop to facilitate continuous process improvement.

### 3.4 Phase 3: Implementation and Continuous Improvement

The aim of the third phase of SPRINT is to implement the re-engineering proposals developed in Phase 2. As noted above, the original BPR team remain in place in order to supervise this stage, although the overall team will typically become much larger via the co-option of additional individuals (e.g. training specialists, IT specialists, relevant line managers, user representatives) in order to carry out the detailed changes that are

required to implement the proposals. Implementation is a long, arduous process and strong user leadership is absolutely essential at this stage to carry through the desired changes into working practice. Many tasks are entailed:

- An incremental implementation plan is required to provide an overall organisational framework. It must be determined whether the proposals are to be implemented serially, or concurrently if there are important areas of synergy and there is sufficient resource available;
- The process designs must be re-examined and translated into new working structures and procedures;
- Training must be addressed, courses and documentation devised, and staff trained;
- Requirements for new IT must be elaborated in appropriate detail to allow the development of the necessary IT systems (by whatever method is deemed appropriate, in-house development, packages etc.);
- Crucially, a positive attitude towards evaluation must be established and appropriate mechanisms put in place to gather whatever data is required to provide feedback on the new systems and processes, whether this be soft data (e.g. interview feedback) or quantitative metrics. It is vital that the ethos of learning and experimentation be maintained throughout.

In principle, this final phase continues indefinitely: the new process designs should be the subject of continuous monitoring and critical evaluation (assisted by the metrics framework). SPRINT thus recommends that the BPR team remain in place on an ongoing basis, considering incremental improvements or indeed radical process changes (akin to the original BPR effort).

#### **4. SPRINT IN ACTION**

To date, SPRINT has been deployed on several major projects (See table 1). The first of these will be described to illustrate the use of SPRINT in practice. This project was the first to use SPRINT and is the most advanced in terms of implementation.

<b>BPR Project</b>	<b>Brief description</b>	<b>Status</b>
Decision-making	To provide improved informational support for all those involved on the Council's decision-making process, in particular elected representatives	Phases 1 and 2 complete. Phase 3 in progress with some evaluation
Treasury	To re-engineer the administration of council tax collection and benefits administration	Phases 1 and 2 complete. Implementation underway of a range of key proposals
Environmental services	Re-engineering of processes for problem identification and resolution	Phases 1 and 2 complete
Housing	To re-engineer key processes in the Housing Department (repairs, lettings, rent collection)	Phase 1 partially complete, awaiting authorisation of full project

**Table 1:** *Current SPRINT projects and their status.*

##### **4.1 Background to the Decision-Making Project**

Profound changes to the nature of local government in the UK form the background to the decision-making (DM) project. At the behest of national imperatives, local government is currently engaged in a process of

democratic renewal, wherein decision-making processes are the subject of fundamental change (Wilson and Game, 1998). The traditional method of decision-making involved a set of committees, chaired and staffed by elected representatives, with a committee devoted to each area of the Council's work (Housing, Social Services and so forth). The most common model replacing this method is that of cabinet-style government. This involves the constitution of a small centralized decision-making body of "Lead Members" (the Cabinet) and a considerably extended system of delegation of power through the executive. Each Lead Member has decision-making power for a given operational area; in effect, they resemble ministers in the Westminster system.

In early 1999, a conventional IT project had been instigated to address issues of IS support for the administrators who would service the new structure. This came to focus upon the issue of 'text retrieval' – the IT search facilities used by administrators when responding to requests for information made by elected members. Over a period of time, concerns developed that this project was too narrow, that it had failed to address the broader issues regarding the enhancement of local democracy embodied in the Information Society vision. At best, text retrieval could only achieve marginal improvements to the existing administrative process. What was needed was a wider and deeper study that would coalesce a more radical vision of change as a precursor to defining a more fitting IT solution. The decision was thus made to deploy SPRINT on the project. It was used to facilitate a broad enquiry amongst all concerned stakeholders about how the decision making structure should work, and how it could be supported through IT.

#### **4.2 Phase 1**

Interviews with key stakeholders were carried out (elected members, council officers, community representatives) supplemented by detailed ethnographic observation of the administrative process supporting the committee decision-making system (still operating at that time). Essentially, the support process was a paper-based one involving the circulation of agenda packages in advance of committee meetings. These packages included an agenda, the minutes of the previous meeting, and a set of detailed reports relevant to the agenda items.

A Role Activity Diagram for the support processes was constructed and a Critical Goal Analysis carried out. This promoted a highly productive discourse amongst stakeholders about how the existing process operated and its relationship with the goals of the organization. This was important as it forced stakeholders to confront the fact that the existing support mechanisms were not effective. Very few of the Council's goals regarding effective and responsive decision-making were effectively supported by the existing process; few indeed were even tangentially addressed. For instance, effective decision making was impeded by the fact that large volumes of documentation would be delivered to councillors just a few days before a committee meeting. How were they expected to read it all in such a short time? How were they expected to identify the parts relevant to their constituents? Equally, the need to involve the community in the decision-making process was severely inhibited by lack of ready access to documentation. It was clear that here was a process that was severely out of alignment with its goals.

#### **4.3 Phase 2**

Phase 2 began by drawing together and summarizing the investigative work of Phase 1 in the form of a business vision for the project. The main elements of this are summarized in table 2. The table indicates that two top-level goals were identified regarding the decision-making process (the table also identifies the various sub-goals and critical success factors required to achieve the primary goals). The rationale for the business vision was to provide a foundation for the development of re-engineering ideas focusing on the use of IT to achieve the goals identified as high priority in the table. In the main, these related to supporting the community role of elected members and reinforcing their involvement in policy development. After some reflection and deliberation, the BPR team came up with a single concept that they enthusiastically supported which addressed both these areas.



The proposal was to create a comprehensive information repository (CIR) for the Council and to transform the role of the committee support staff to that of information managers. All documents (reports, agendas, minutes) would in future be stored in the CIR and indexed rigorously in terms of the policy issues they addressed and the areas of Salford that they related to. The committee support staff would no longer simply act as “paper pushers” but would take responsibility for ensuring that documentation was correctly classified; they would also monitor the quality of reports and actively seek out additional material. In short, the BPR proposal envisaged the creation of an information management (IM) function within the Council. This would underpin major changes to the processes of information dissemination and retrieval. This would promote better alignment with the goals of the process by providing a speedier and customisable service. Documents would be circulated to elected members electronically, thus reaching them more quickly. Members would also be able to register their interests (e.g. policy issues, their ward) and information would be proactively supplied to them based upon this profile. Retrieval also would no longer depend on the committee support staff, elected members could search for electronically held documents using the indexes provided for them. Thus, from its original concerns with ‘text retrieval,’ the use of SPRINT had enlarged the scope of the project to consider the whole process of decision making more broadly, and the related HR, business process and IT issues. In time, it was proposed, the benefits would become still greater with community stakeholders able to utilise the CIR in a similar way to the elected members.

<b>Business Goal</b>	<b>CSF/sub goal</b>	<b>Gap</b>	<b>Priority</b>
Effective representation of community interests	Support representative role of members	Mod	High
	Support direct involvement of community in decision making	Low	High
Policy development attuned to needs of City	Support Policy development role of elected members	High	Mod
	Better community consultation	High	Mod
	More effective policy coordination	High	Mod
	Effective policy monitoring by elected reps.	Low	High
	More rapid decision making	Mod	High

**Table 2:** Summary of the Business Vision for the case study. The gap column indicates the degree to which the goals were supported by the original process.

#### **4.4 Current Status**

The project is now well into the third phase of SPRINT. This requires the re-engineering proposals articulated in Phase 2 to be developed in detail, and for the new processes (and supporting IT) to be implemented. An incremental, implementation plan was drawn up, specifying the long term aim of creating an information management (IM) function but allowing the BPR team to work towards this aim at a pace that allowed reflection, formative evaluation and adaptation. Although progress has been less rapid than had been hoped, nonetheless a working system was put in place for Lead Members in mid summer 2000, and is now being rolled out to the rest of the Council.

SPRINT emphasises the need for evaluation and a formal review of benefits has recently been carried out. This has taken the form of an interview study, as meaningful quantitative data is not yet available. In general, members have expressed very favourable views regarding the value of the system although there has been some frustration over the pace of implementation. Some of the delay has been due to the use of an external contractor to develop the software; inexperience with BPR and occasionally hesitant leadership have also been important factors. Much of the delay, however, simply reflects the time that is required to absorb and implement what are quite radical changes. The Cabinet model itself is evolving and many unexpected issues

have emerged concerning both the Cabinet approach and the CIR (e.g. over access to documentation, the lack of a defined set of policy topics). The support staff themselves have been preoccupied with maintaining a basic level of service for the new structures and with reacting to contingencies, adapting procedures, solving problems, adjusting IT requirements in response to changing circumstances. Time and space has been given over to making these improvisational changes whilst retaining the long-term vision in mind. Despite the delays, the project is very much alive: the radicalism of the IM vision is still intact, progress towards this aim is slow but steady, and the project continues to enjoy the active support of its main stakeholders, the elected members and support staff.

## 5. CONCLUDING COMMENTS

Although not an unqualified success, the decision-making (DM) project nonetheless attests to the validity and efficacy of SPRINT. The project has shown the methodology to be highly effective as a tool for generating the sort of innovative ideas that are essential if Salford's Information Society project is to achieve its visionary goals. The techniques for empirical analysis (RADs, ethnographic methods) have helped elaborate a shared business vision for decision-making support, which in turn inspired a re-engineering concept going considerably beyond the original project. SPRINT has thus transformed a typical Tayloristic IT project into a major initiative embracing IT-enabled change that directly addresses goals of vital strategic importance to the Council. In this respect the SPRINT BPR project, with its sociotechnical spirit, stands in interesting contradistinction with the more conventional IT design project that preceded it (i.e. 'text retrieval'). SPRINT's deployment on further IT-related change initiatives (table 1) provides cogent testimony to its perceived value. This success implies it could have potential application in other similar contexts. Indeed, as noted above, there is nothing that is public sector specific in the method, and we therefore believe it could be applied in any organisational setting, especially given its deliberate open-endedness and adaptability.

The success of SPRINT provides strong evidence supporting its underlying precepts. In particular, we would highlight the following. First, that the *design approach* is a highly effective method for achieving strategic alignment and, by implication, that the top-down paradigm is fundamentally flawed. Regarding the latter, we have seen in the DM project (and this is confirmed in more recent projects) that business strategy is a protean, emergent phenomenon and that effective alignment requires ongoing attention right through the lifecycle of IS development by those actively involved in design. Second, that the focus on *radical learning* is key, and hence the need is vital to provide an appropriate transitional space in terms of a supportive psychological climate, the provision of simple modelling tools and the maintenance of a self-critical attitude (reinforced primarily through the review role). Third, that although a radical vision is essential for BPR, this does not entail radical implementation. The high failure rate of BPR projects at implementation has been widely reported (e.g. Hammer and Champy, 1993). An explanation is that the capacity for change in any organisation is limited, and hence an *incremental change model* which encourages ongoing learning is likely to be more congenial, and ultimately more effective, than the planned approach involving wholesale discontinuity. This is especially true given the continual turbulence in today's business environment, and hence the need for constant adaptation and adjustment.

A final important point relates to knowledge management. One of the unsung benefits of methodology highlighted in our work is its role as a knowledge management device in design teams. By providing a shared linguistic and ontological framework, methodology affords a powerful structure for creating and binding together a community of practice (CoP- Lave and Wenger, 1991). In effect, SPRINT has led to the establishment in Salford of a new CoP focused on a BPR approach to IS/IT development. The use of web technology has allowed the sharing not only of terminology, methods and concepts, but of practical experiential knowledge too. Within teams, a shared web-site based on a common framework allows rapid access to the working documentation of the project for all stakeholders; across teams the ready access to previous or indeed concurrently generated knowledge is a major enabler of progressive organisational learning.

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