

Informing Effective Performance Management

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Performance Management is by no means a new concept in public services. Rather, it is the current initiative to achieve the longstanding quest for accountability and performance improvement, which began in the 1980s. We present the history of performance management and suggest an agenda for performance management in the context of partnerships and alliances, quality and information management. We propose that performance management is most effective when objectives beyond operational variables are incorporated, that they are based on an understanding of strategic effectiveness and underpinned by appropriate information systems.

This paper addresses the historical context and culture of performance management in a public service (health and social care), determines the partnership and quality management challenges of performance management and the relationship of performance improvement with information strategy. Partnership working is considered as a form of strategic alliance. The need for service quality management and the notion of excellence are considered in the context of healthcare services. We consider the challenges of Management Information Systems in a rapidly changing Healthcare sector, which in the last ten years, has been trying to transform from a product focused, protected professional service to a highly visible and increasingly consumerist market sector (Linial, 1995).

These themes are brought together to consider how alliances, quality, and information are the three elements of successful performance management of effective public services. This challenge that has perplexed providers for two decades and is likely to persist, despite changes in governments and policies.

This paper presents a framework for effective performance management. It is based on case studies of alliances between health and social services to deliver partnership working for improved service delivery and identification of user requirements and information systems effectiveness.

Performance Management In Public services

Performance Management is the latest approach in public services, intended to develop a culture of accountability and quality management in the sector, and to move it from an inward looking process driven culture to one of user focus and effective service delivery. Much of the NHS management effort in recent years has been directed at increasing the responsiveness of the service to the customer. Performance management is a policy that follows a long history of approaches to managing this cultural transition.

The prevailing culture in the NHS has been criticised as a top-heavy administration where trade unionism, inefficiency, and reluctance to change have reduced the proportion of resources available for medical care. Administration rather than strategic management has been the ethos and terms such as efficiency and productivity are seen as precipitating sub-optimal medical care. Patients have been considered unqualified to judge the quality of their care and so have not been involved in service development. Customer orientation has traditionally played no role in the management or design of healthcare.

During each successive Government since its creation, the NHS has had to react to policy changes imposed by its political masters. This section reviews the major influences that have contributed to the development of a user orientation in the NHS. All of these elements of the NHS reforms require informed quality assessment mechanisms for sustaining and improving quality to ensure successful implementation.

Towards a strategic management orientation in the NHS

The first move towards performance management was the initiation of quality assurance. Until the late 1980s however, most quality assurance in the NHS took place on a fragmented and sporadic basis (Walshe, 1989). Quality assurance was considered a peripheral activity by both the

Department of Health and the Health Authorities. Rather than demonstrate any enthusiasm for quality assurance, most clinical professionals actively resisted it and there was little consumer pressure on quality of service (Shaw, 1980). As far back as 1983, the Griffiths Report emphasised the need for the NHS to be accountable to the public:

'there is little measurement of health output; clinical evaluation of particular practices is by no means common, and economic evaluation of these practices is extremely rare. Whether the NHS is meeting the needs of the patient and the community and can be seen to be doing so is open to question.' (Griffiths, 1983)

It was not until the Griffiths Report in 1983 that the problems caused by a lack of user orientation began to be addressed. Many of the difficulties identified by Griffiths could be resolved (by his own recommendation) by the adoption of a user focus by managers, i.e. Management should play... "an active, not merely a reactive role in relation to patients and the community, and make them central to its (the NHS) activities."

In 1984, Britain, along with other European countries, committed itself to the principles of 'Health for all', the World Health Organisation declaration which included the objective of developing:

'effective mechanisms for ensuring quality of patient care within their healthcare systems by 1990. (World Health Organisation, 1984)

Subsequently, the Department of Health published 'Working for Patients' in 1989. This working paper proposed a major reform of the structure of the NHS, advocating the development of comprehensive plans for each Health Authority for:

'The systematic critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, and use of resources, and the resulting outcome and quality of life for the patient.' (Department of Health, 1989)

The suggested framework for such analysis was medical audit, in which every doctor was supposed to participate. The initiative was supported by two major professional bodies, the Royal College of Surgeons and the Royal College of Physicians. Other 'Working for Patients' reforms included:

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| splitting purchaser and provider roles | – | independence and freedom for NHS Trusts |
| contracting for health services | – | new contracts for medical staff |
| creation of an internal market | – | incentives to involve clinicians in management |

In the Foreword to 'Working for Patients', the Prime Minister stated:

"We aim to extend patient choice, to delegate responsibility to where services are provided and to ensure the best value for money. All the proposals in this White Paper put the needs of the patients first."

Two further publications, The Health of the Nation (1992) and The Patients' Charter (1992), also emphasised performance management of clinical objectives and service quality. The Health of the Nation addressed clinical objectives while the Patients' Charter centred on objectives concerned more with quality of service than with technical quality of treatment. Whereas Griffiths (1983) had examined the management structure of the NHS and made recommendations as to how it should be revised, he purposely avoided the subject of how well the services were meeting the requirements of the community. This was to be the subject of further Working Party Reports and studies concerning the delivery of healthcare services in both the primary (community) sector, and the secondary (acute/hospital) sector.

The Health of the Nation White Paper (1992) set out specific healthcare objectives in a strategic approach to health. It recognised the need to concentrate on health promotion as much as health care. The White Paper's overall goal was to 'add years to life and life to years'. It considered that the NHS structural and management reforms had created the right environment to allow the realisation of health promotion issues that had not been seriously addressed since its formation in 1948. Success was to come through combining public policies, healthy surroundings and lifestyles, and high quality health services. It would depend on monitoring people's health, and on research into ways of improving health. Five areas were targeted, namely, coronary heart disease and stroke, cancers, mental illness, HIV/AIDS and accidents. Targets were set detailing the required reductions of occurrences and deaths for each. The performance management agenda was now firmly established:

"The challenge now will be to establish a more direct link between health authorities' work, and the gains in health, both to individuals and to the population as a whole that result from it". (The Health of the Nation, 1992)

The Patients' Charter came into effect on 1st April 1992. This was to be a 'guarantee of satisfaction' covering key issues of service delivery. It introduced three new statutory rights to the public:

- To be guaranteed detailed information on local health services, including quality standards and maximum waiting times,
- To be guaranteed admission for treatment by a specific date no later than two years from the day when your consultant places you on a waiting list and
- To have any complaint about NHS services - whoever provides them - investigated and to receive a full and prompt written reply from the chief executive or general manager.

The Government positioned the Patients' Charter as a guarantee in the mind of the public, and made specific NHS managers accountable, to ensure that its requirements were met. In this way, achievements, and improvements in standards have been made albeit because the hand of managers has been forced by policy. The ability of a service provider to define a standard - and mean it - was an important step forward. It enabled communication with customers who then knew what to expect and was also a starting point for improving service levels. While two years may have been a long time to wait for hospital treatment, it was nevertheless a finite and quantified measure that could be used as a base from which to measure performance improvement.

More recently, The New NHS, Modern and Dependable (Department of Health, 1995), introduced Health Improvement Plans and Health Action Zones that have further emphasised the need to make services responsive to user needs, to manage health improvement and to understand if, and equally importantly, how, this is achieved.

To achieve the aims of these policies, we postulate that there are three key issues that need to be addressed in performance management, namely: management of inter-organisational partnerships and relationships, quality and information management.

Relationships, alliances and quality

Strategic Relationships and Performance Management

Public services have become aware of the need to manage relationships since the introduction of the concept of joined-up-thinking or seamless government. Inter-organisational alliances are now viewed as an important mechanism in the delivery of public services. For example, clients who were abused wives with substance abuse and nutrition problems should no longer have to deal with three different service components, each with its own culture, rules, regulations and resources. Such government-mandated policies for one-stop shopping have far reaching implications for strategy, structures, and most significantly, cultures where managers must see their roles in terms of facilitation of co-operation mechanisms through facilitation and persuasion.

Research into strategic alliances and partnerships has moved from studying their categorisation and purpose to a focus on outcomes, evaluation, and risks and challenges. Alliances may take many forms; from direct investment in, or integration with another organisation, through contractual arrangements, to partnerships and opportunistic networking (Harrigan 1988, Contractor and Lorange, 1988, Doz 1996, Dussage and Garrette 2000). Such inter-organisational relationships can be categorised as either scale or link alliances, depending on their purpose. Scale alliances give increased access to markets while link alliances are based on enhancing competencies and capabilities. Scale alliances occur most often amongst competitors while link alliances emerge between organisations with complementary skills.

Most of the research on alliances and partnerships has been done in the private sector. To a lesser extent there has also been investigation of public-private partnership working. In our view, the nature of public-public partnerships is fundamentally different in its purpose. Such public-public partnerships can not easily be categorised either in terms of seeking scale advantages, i.e. seeking access to new market information possessed by the partner, or in terms of link advantages, i.e. seeking to acquire new and complementary skills and competencies from partners. The distinguishing characteristic of public-public partnerships is that the partners have a shared role in achieving the delivery of specific public services. For example, the delivery of healthcare to the elderly includes domestic care, mobility support (e.g. provision of wheelchairs and walking aids), community nursing, provision of a safe environment free from violence and perceived threat, physiotherapy, and the provision and maintenance of appropriate housing. If the outcome of service delivery to the elderly is better quality of life and equality of healthcare provision, then all of the organisations responsible for these individual services should work as partners to that end.

In practice these services are provided in isolation by various public service organisations. Consequently, the client must navigate a maze of disparate departments, and complete a multitude of forms. More significantly, the quality of service provision is never assessed as whole in terms of the client's overall satisfaction and the effectiveness of outcomes. Rather service quality is assessed in its constituent parts, usually as outputs such as the number of wheelchairs issued or, even worse, in terms of inputs, such as the budget spent on physiotherapy treatment or community nurse visitation. We therefore postulate that public-public partnerships are a fundamentally different type of alliance or partnership, characterised by shared responsibility for outcomes, and we suggest that they constitute a third type of alliance beyond scale and link – i.e. shared-role alliances.

Managing alliances

Research interest is now focused on understanding alliances, and particularly on anticipating success (Dussage and Garette 2000), problems and instabilities, (Das and Teng 1999) and strategies for success (Segil 1998). Most recently, emphasis has been on studies of outcomes, evaluation, and risks and challenges. Outcomes have been shown to depend on the antecedents of formation and process (Bleeke and Ernst 1995, Harrigan 1988, Kanter 1988, 1994). Alliance formation between strong equals, based on inter-organisation trust and in an environment of complementary resources appears to work best. Alliances between competitors, between the weak, or between the strong and weak, have a much higher failure rate. Cultural fit and compatibility, trust, compatible objectives and complementary skills and resources help make alliances work (Forrest). Segil, (1998) suggests a checklist of factors for successful alliances, viz: compatible cultures, regular and effective monitoring customer responses, processes to forge strong relationships, open communication, resolution of the collaboration/competition dilemma, tiering of involvement, linking rewards to success, flexibility, effective management of personalities, and the need to measure, monitor and review.

The evaluation measures of alliances cannot be generalised. Rather they depend on the objectives of the relationship, the time horizon of effectiveness and on both tangible (e.g. financial and market) and intangible (e.g. co-operation and morale) outcomes (Doz, 1998). The risks and challenges of alliances for managers have been identified as: impact on control, security, balancing flexibility and rigidity, setting appropriate levels of productivity, optimal use of resources, imitation, developing new resources, acquiring partner resources, protecting resources, avoiding unintended transfer and imitation (Das and Teng, 1999).

In terms of public-public alliances, part of our research agenda is to explore the extent to which the antecedents of private sector alliances and public-private partnerships hold good for shared-role alliances. To what extent are there additional factors determining successful public-public partnership working?

Managing Relationships

Relationship management incorporates both the relationships between service delivery partners and between service deliverers and their clients. Crosby et al (1990) demonstrated that opportunities in service relationships depend mostly on trust and satisfaction. The development of successful relationships requires that an organisation views its dealings with partners and clients as a long-term commitment. Research has shown that these relationships are crucial to successful client retention, which cannot be secured only on the basis of superiority of the technical aspects of a service. Rather, the benefits of positive relationships are long-term loyalty and customer retention (Hakansson and Snehota 1995). Again, it is clear that most of the research has been conducted in the private sector, where the concepts of customer loyalty and customer retention have more relevance. In the public sector, even with the introduction of internal markets and purchaser-provider separation, the public has ultimately very little choice about service provision. Public service providers are not pre-occupied with concerns about customer loyalty or customer retention, since, with the exception of private healthcare, there are no alternatives.

Nevertheless, the public sector would do well to acknowledge the lessons learned from the private sector in relation to the role and value of customer satisfaction measurement in driving service improvement. Feedback from customers on their expectations and experiences of service delivery is a valuable mechanism for the design and improvement of service provision. While the current notion of Best Value does encourage public consultation within its assessment framework, our research suggests that the implementation of consultative arrangements, and more importantly, the value placed upon public consultation, still leaves a lot to be desired.

The relationship element of a service is claimed to have an impact on the perceived value of the service supplier by supplementing specialised skills, techniques and experience (Ravald and Gronroos 1996). Therefore those involved directly with managing relationships need to balance technical, administrative and social competencies (Paulin et al 2000).

Quality and Performance Management

Service outcomes and the process elements of quality are both important in achieving customer satisfaction (Murfin et al 1995; Parasuraman et al 1985). Yet there is considerable debate about the definitions of, and relationships between service quality and satisfaction. The debate on the most appropriate way to measure either service quality or satisfaction is unresolved (Parasuraman et al., 1994; Cronin and Taylor, 1994; Taylor and Cronin, 1994; Smith, 1995). There is however, general agreement on the overall nature of service quality. Service outcome and the process elements of quality (reliability, responsiveness, competence, access, courtesy, communication, security, understanding the customer and tangibles) are both important (Murfin et al., 1995; Parasuraman et al., 1985). Another view of healthcare quality is that it incorporates three factors: expressive caring, expressive professionalism and expressive competence (Bopp, 1990). Over the last twenty years, differentiation between service and product quality has been addressed in debates about perceived

quality (Gronroos, 1982, 1984, 1993), service processes (Smith and Houston, 1983) and gap analysis (Parasuraman, et al., 1985). These approaches are still being refined. For example, the current focus on resource-based management has led to renewed interest in the performance gap. Consequently, trust, commitment and co-operation have been added to the formula for effective service delivery (Chenet et al., 2000).

Managing service quality in healthcare

Operationalising service quality constructs is not easy because their determinants can vary depending on the nature of care provision and the needs of patients (Bowers et al 1994; Schlegelmilch et al 1992; Youseff et al 1996). This means that measurement tools need to be validated relative to their specific service and it may therefore be difficult to compare performance between services. This makes the inclusion of such quality measures in national league table scores a problematic policy to implement, though the notion of core and peripheral values may be useful here (Gabbott and Hogg 1996). The key debates about service quality and satisfaction include: how to measure expectations, the use of perception measures, calculation of gap scores, interpretation of midpoints of scales, generalisability of service quality dimensions, identification of key dimensions, ranking dimensions (Gronroos 1993; Boulding et al 1993; Zeithaml et al, 1993; Parasuraman et al 1994b; Vandamme and Leunis 1993; Smith 1995; Carmen 1990; Shewchuck et al, 1991; Cronin and Taylor 1992; Babakus and Mangold 1992; Arnould and Price 1995).

Measuring service delivery

The emphasis in much research has been to validate the construct of quality and to quantify the reliability of the constructs. The role of data collection has been either to evaluate the conceptual frameworks or service models in a specific industry. There is now a move to consider how service delivery information could be incorporated into continuous market information. Peters (1995) suggests three issues which need to be resolved to achieve this: measurement of process benchmarks, analysis that links results to customer strategy, and techniques for data gathering. He suggests that satisfaction is monitored relative to competition and that information should be more than ad hoc, it should be internally comparable allowing analysis of satisfaction trends. The variables measured for evaluation of quality are complex and evolve with customers' perceptions.

The Performance Management challenges for public services are thus:

- To manage relationships based on shared objectives and outcomes
- To operationalise service quality constructs in ways appropriate to specific services
- To measure and manage performance for service improvement (through organisational learning) rather than for descriptive reporting.

Information and Performance Management

Management information systems in healthcare

For too long, the focus of information support has been on operational and accounting variables. As previous policies have emphasised waiting lists, waiting times and costs of completed patient episodes, there has been no development of a performance based information system approach to capture data to benchmark service provision, to evaluate the quality of the delivery of services, to monitor customer satisfaction or to understand effective management processes and behaviour. Information systems have at best, been centred on clinicians, and at worst, focused on administrative systems to fulfil the needs of a policy driven league table culture.

Information is captured from internal databases (financial, patient records/operational and HR), which are used to compute quality indicators in line with Government policy that specifies variables to be included in performance reporting. The nature of data to calculate these variables is also determined by policy. In this sense, information tends to be historical and descriptive, reporting only what has happened.

The source inputs into a management information system are: internal, continuous data; external, ad-hoc studies; and market intelligence. Of these, it is only the ad-hoc studies that capture perceived service quality and customer satisfaction. As information in healthcare information systems is based on continuous internal data, information is service process oriented rather than customer oriented.

Information for organisational and service performance

Most organisations’ information systems are more usually associated with finance or production departments than with service delivery and experience. Frameworks for analysing user effectiveness began with input-output models in which activity was correlated with financial performance (Borden, 1964). Then, in the private sector, the PIMS model included customers relative perceived price, quality and value into their model of marketing measurement. Since then, market research has addressed customer attitudes and satisfaction as well as customer behaviour as intervening variables between inputs and outputs. These, especially attitudes and satisfaction, are measured on an ad hoc basis rather than as continuous data which is more usual for inputs, e.g. costs and prices, and financial outputs, e.g. accounts and management reports. Shaw (1998) suggests a five perspectives approach including customer motivation and behaviour as intervening variables and adds the contextual element of marketplace environment to the measurement model. This element of the model of strategic measurement is provided through the market intelligence input to the management information system.

More recent approaches to performance management include the Balanced Scorecard model (Kaplan and Norton, 1996) and the EFQM Excellence Model, both of which are now diffusing slowly into public sector practice. Both approaches suggest a portfolio of core generic measures that reflect not only current management thinking, but also the principles of resource-based strategic management. Both emphasise the importance of systematic information gathering about customer satisfaction as well as information on financial performance. Both models highlight the need for effective measures of customer-focused business processes and both underline the need to use such information for innovation, learning and improvement. While the Balanced Scorecard is similar to the Excellence Model in linking information requirements to organisational strategy, the former is couched more in terms of ‘what must we achieve’, i.e. what must we measure, while the latter also emphasises the importance of managing the enabling processes that determine results. In other words, the Excellence Model also stresses the need to measure process performance and is specific about the importance of the enabling processes of leadership and employee management. The Excellence Model was also first to highlight the need to gather information from a stakeholder rather than a shareholder perspective, specifying measurement of employee satisfaction and impacts on the wider community.

Information strategy in healthcare

In healthcare, there is now recognition of the need to be user-orientated in the sense of providing information on illnesses, treatments and available services. For example, by 2005, all acute hospitals in the UK are required to be at level three of the six level IS strategy proposed by the UK Government (Burns 1998).

IS Development Level	Specified Systems Functionality
6	<i>Advanced Multi-Media and Telematics</i>
5	<i>Speciality Specific Support</i>
4	<i>Clinical Knowledge and Decision Support</i>
3	<i>Clinical Activity Support</i>
2	<i>Integrated Clinical Diagnosis and Treatment Support</i>
1	<i>Clinical Administrative Data</i>

Level one is concerned with the availability of clinical data for patient treatment (patient records), while levels two and three are about the integration of information for clinical diagnosis and treatment support, and more general support of clinicians' activities. Currently, over 75% of acute hospitals in the UK have yet to reach level one. Consequently much of the prevailing activity is focused on the development of Electronic Patient Record (EPR) systems to achieve level one status.

Accurate determination of the systems' requirements of all user groups will be key to the subsequent success of this strategy. Resistance to such changes are likely, given the much publicised and high-profile failure of IS implementation in the Healthcare sector, the dearth of local clinical informatics expertise, poor quality clinical record keeping, and the reactions to the need for openness and clinical audit.

What seems clear is that this IS Strategy is only intended for hospitals, and only in the context of electronic patient records. In other words, it is a strategy aimed at functional service provision in hospitals – a strategy designed to process patients and manage patient episodes, rather than being focused on the provision of services that result in customer satisfaction. This has implications for our discussion of partnership working in healthcare and we will return to this theme later in the paper.

Identifying Information Users' Requirements

The thorough analysis of users' information and knowledge requirements continues to be recognised as a critical stage in the successful development of information systems (Moody et al, 1998).

Requirements Analysis (RA) is the process of eliciting, gathering, modelling, specifying, and analysing data and information that are needed either to automate an organisational task or to support the decision-making process of knowledge workers such as clinicians (Bryd et al, 1992; Hevner et al, 1995). RA is however, often problematic. For example, Wetherbe found that after project completion, 76 information systems developed in 26 healthcare organisations all required some form of revision to even partially fulfil management's information needs (Wetherbe, 1991).

Numerous strategies have been developed to aid in defining users' information requirements (for example, Business Systems Planning Davis, 1982), Critical Success Factors (Rockart, 1979), Ends-Means Analysis (Wetherbe, 1991), Strategic Set Transformation (King, 1978), Decision Analysis (Ackoff, 1967), Protocol Analysis (Wright and Ayton, 1987), Cognitive Mapping (Montazemi and Conrath, 1986), and Prototyping (Goul and Tongue, 1987). In addition, a number of contingency approaches have been proposed to assist in selecting the most appropriate strategy for a specific situation (Davis, 1982; Fazlollahi, and Tanniru, 1991).

While systems development methodologies have increasingly recognised the need to be more user-driven, and the healthcare sector in particular has been singled out for its laggardly approach. In the UK health care sector, poor information requirements definition has been recognised as a major cause of IS failure (Audit Commission 1995). However, the focus of information support is still on operational and accounting variables. With government policy emphasising waiting lists and waiting times along with costs of completed patient episodes, there has been no development of an integrated information system approach to capture data for benchmarking service provision, evaluating the quality of the delivery of services, or monitoring customer satisfaction.

Research Method

Background

This paper brings together the findings from two studies, one of performance management of public service partnership projects and one of information systems design and development in public services. Both studies are in the healthcare sector in the UK.

Study 1: Health Action Zone Partnership Project - Context

This research was based on a case analysis, through participant observation, of a discrete project funded by the Department of Health’s Health Action Zone (HAZ) initiative. The overall objectives of this initiative were to improve health and reduce inequalities in healthcare provision. The project was funded to a value of £65k from a total pool of £15m in the district. Part of the brief of the HAZ initiative was that all projects should be subject to independent evaluations that would, in aggregation, contribute to district and national evaluation. The project had funding for an initial two years, with a possibility of further funding for four years.

The project was about public-public partnership working, where the partners shared responsibilities for healthcare provision to the community. The main partners were a Health Authority (as the purchaser of hospital services) and a Local Authority. The project team comprised 15 representatives of the main functional service areas, e.g. substance abuse, education, leisure services, care for the elderly, housing, police etc. Interestingly, there were no GP or hospital representatives involved in the HAZ initiative.

Purpose

The purpose of the research was to investigate the process of partnership working and to identify the factors that made the partnership effective.

The process of evaluation began with a fit-for-start review. This was based on an assessment of (a) the synergy of the project objectives with the overall HAZ objectives and (b) the specific description of the allocation of funds from the project. It was recognised that the variation in the nature of projects meant that the basis of individual project evaluation was best determined by the project team in discussion with the external evaluator. The role of the evaluator was to facilitate the specification of appropriate performance indicators by the project team who would be responsible for data collection and performance review.

The research method included:

Initial briefings by the project management team	Attendance at project team meetings
Interviews with project team members	Interviews with partner organisations at strategic, planning and service delivery levels
Interviews and surveys with service users	Review of national and local public policy documents
Review of project based documents, including strategy, committee minutes and papers, job specifications	Attendance at service development and review events such as Best Value reviews
Participation in organisational performance management training	Conduct of interim reviews
Participation in the development of detailed objectives	Participation in the collection of performance review data

Study 2: Design and development of healthcare information systems - Context

This study was based in two hospital trusts in the same UK region. Both trusts were working towards the development of information systems within the government’s IS Strategy framework

discussed earlier. It explored the attitudes and practices of three user groups within the two trusts, the three groups being: information services staff, administrative staff, and clinical staff. Hospital information systems are critical in enabling an effective partnership approach of suppliers and commissioners of public services.

Purpose

There were no formal projects associated with these developments, so the objective was not specifically associated with partnership working. The purpose of this investigation was to identify the ways in which two hospital trusts in the region were developing their information provision and to compare their information plans with the needs of their healthcare delivery partners in the Local Authority. This complementary study seemed wholly appropriate given that there hospital involvement in the HAZ project.

Data Collection

The interviews explored the respondents' perceptions of their information provision, and the problems and issues around performance improvement, in the light of the NHS Information Strategy. Semi-structured interviews were used, together with analysis of organisational documents and participant observation to establish between-methods triangulation. Sixty-seven interviews were conducted in total, and all were tape-recorded, transcribed and analysed subsequently using Nud.ist software to identify themes in the data.

The interviews centred on themes of context, technology, and change. All three groups were asked about the issues, problems, and concerns (regarding information) they considered important within their own working environment. IS personnel were asked to outline the way they perceived their roles in the hospital, particularly concerning the introduction of Government's requirements for performance management and service delivery. They were also asked to describe the projects under consideration: their objectives, boundaries, the rationale behind them, and major foreseen obstacles. The administrative and clinical staff were asked to describe the current systems they were using, as well as the ideal systems they wished for. Additionally, they were asked to describe and evaluate the standard process of introducing new systems in their organisations, the training they had received, and the support they were offered when they encountered problems.

Results

Study 1: Health Action Zone Partnership Project

These results encompass the first year of the HAZ project, from project initiation. Paradoxically, although the project had received funding based on its original proposal and a fit-for start assessment, it still did not have clear output or outcome related objectives. Thus, the first stage in the project was for the partners to agree a set of clear, measurable performance objectives, by which the progress of the project could be judged.

Project Awareness

At initial team meetings, it was clear that there was a lack of awareness of the nature of the project and even the source of funding. Soon after the project team formed, they regarded themselves as a committee that had become part of the organisational infrastructure. Their sight of the activity, as a stand-alone, funded project had been lost. In not having a clear idea of the project's purpose, the team members were complacently happy to regard the 'committee' as yet another talking-shop, rather than a project with targets and outputs to be achieved. Team members reacted with surprise when reminded that they were involved in a project that contributed to the overall HAZ. They could only relate to its origins when they were provided with the original project proposal and objectives.

Setting project objectives

The initial fit-for-start-objectives were based very much on the allocation of the resources requested. They were essentially to appoint a person to a strategic role in the project to widen the adoption of the principles of Best Value from their base in the Local Authority to healthcare organisations. While the original proposal had specified targets and outcomes, most of these were at best outputs rather than outcomes, as the table below demonstrates:

Target	Outcome
To support core staff through additional appointments.	To have staff in post providing strong staff support to HAZ developments.
To brief core staff linked to the HAZ on best secure their commitment to it.	To develop a team to co-ordinate value and developments
To strengthen links between HAZ, New Deal for Communities and other regeneration initiatives.	To provide evidence of links between HAZ objectives and the Local Authority's main strategic planning activity.
To have HAZ objectives integrated into all appropriate decision-making, joint planning and service development activities across the Local Authority.	To involve elected council members.
To ensure that joint performance indicators are developed in conjunction with the Cabinet Office.	To provide evidence of integration of initiatives, joint planning and working.
To ensure that political support is achieved.	To provide evidence of community involvement and consultation.

The targets and outcomes were not directly related to each other. Moreover, only one of the outcomes mentioned the target community, and only then by way of demonstrating involvement. There was no mention of specific performance outcomes that would improve health or reduce inequality. The appointment of additional staff was easily effected and regarded as an early achievement of the project team, though the effectiveness of the appointment provided a very different performance management challenge.

Making Performance Management Work

Direct measurement of desired project outcomes are not always possible. Composite measures and indicators are more likely to highlight successes. The project team regarded both quantitative and qualitative outcome measures as important, though there was a dominant preference for the respectability of quantitative measures. Coincidentally, these happened to be measures already being gathered for league table and other government reporting purposes. There was a definite reluctance to define measures that would require additional effort, or changes to current information provision. A predominant view in the group was that they should adopt a minimalist approach to measurement and reporting, arguing that results not reported cannot subsequently be used as a stick to beat the participants with. Partly this was understandable, given that public services are soft targets for negative media publicity. Nevertheless, the team was satisfied that so long as there were no official complaints, and they could avoid negative publicity, there was no need

to engage in softer measures such as public attitudes and perceptions of service delivery. As one of the project managers put it
"the public's opinions will only be based on their own experiences, and they are not really valid, because they don't know what they want".

Refining Objectives

Clearly the original objectives did not lend themselves to a review of the effectiveness of the project. They suggested performance indicators that were based on deliverable outputs, e.g. staff appointments or reports showing who was working together, how often they had met and so on. There was no reference to reducing health inequalities or improving health provision for the community. Indeed, without information on customer satisfaction, it was not really possible to develop meaningful outcome measures. Underpinning this lack of customer-related information were two factors.

Firstly, the project team had difficulty understanding the difference between outputs and outcomes. Having been accustomed to government imposed reporting criteria, leading mainly to compilation of league tables, they did not see a need to measure anything beyond outputs. What is more, they argued that outcome measurement was too difficult.

Secondly, the team expressed a concern that if they did fully consult the public about service delivery, the results might be less than flattering. They worried that such negative feedback would have a detrimental effect on the evaluation of their project, and hence might jeopardise future funding. Apart from not having customer satisfaction information, the team did not have any information on the current situation with health inequality, either in terms of geographical area of the district or in terms of client groupings or customer segments. The most worrying aspect was that the group did not perceive this absence of information as a problem.

The team was largely unaware of and unconcerned with mainstream information systems. Information sources for evaluation were not written into the original project plan. They were seen as entirely separate and it was assumed that projects would collect their own data where necessary.

Stakeholder Involvement

Discussion of the nature and intent of the project between stakeholders had a considerable impact on the refinement of the project outcomes. The project management team had a very focused need to demonstrate that the project had been implemented. The wider project team were more concerned with the effectiveness of the project and understanding the basis of that effectiveness. They wanted to know how and why such partnerships worked and to learn how to specify future initiatives that built on the experiential knowledge of this new approach. This was initially seen as a difficult, if not impossible task. It involved capturing the essence of effective leadership that was vested in individual managers. Stakeholders were very sure that they saw the project as something beyond the specifics of what had happened, to include how and why it had happened. They wanted to develop this knowledge into a model of organisational design and management for more predictably effective partnership working.

At the end of the first year of the project, the team was beginning to coalesce and to accept the need for shared outcomes. They had also, by a process of attrition, refined the project's objectives in more measurable terms. Nevertheless they were still far short of defining measurable outcomes. The original targets and objectives were now categorised into resource, facilitation and influencing objectives, and without giving all details in this paper, hopefully one example will suffice. This case is not presented as a criticism of the participants. Rather it is intended to be indicative of the practical issues and problems that can arise. In the discussion of these results we will offer some explanations, after consideration of the second example in the two hospital trusts.

Original Target	To ensure that joint performance indicators are developed in conjunction with the Cabinet Office.
Refined objective	To implement management systems that focus on what is being delivered, rather than who is delivering it.
Outcomes/Outputs	Services focused on needs of service users and stakeholders
Indications of achievement	Increased user awareness and satisfaction with the service
Information and evidence	Questionnaires distributed to representative user sample, Interviews and focus groups, transcripts

Study 2: Design and development of healthcare information systems

The results show that there are a number of cultural factors, which impinge upon the development of information systems in the healthcare environment. These are presented and followed by presentation of some of the comments from administrators, clinicians and patients which give insight into underlying attitudes which might inhibit enthusiasm for a different approach to information systems for performance improvement.

Factors affecting the development of healthcare information systems:

Lack of Management involvement

One clear factor that came through from the interviews was that users did not want to change their work practices without being given adequate justifications or at least being consulted. They felt that systems were specified by senior management without an obvious benefit to them.

"We still can't even answer simple questions like how many new inpatients we treated last year with certain types of cancer."

"They (management) keep talking about clinical governance and audit – if they ask how many patients I've cancelled in the last year, I've only got a paper system to collect the data. They're not bothered until the next crisis or the next time a parliamentary question needs answered."

"We're still struggling to deliver useful clinical information because of the emphasis on management information - waiting lists and waiting times. One part of government says you will get an Electronic Patient Records system to help doctors, and the other wants management information to help them get re-elected. I spend 90% of my time on the latter"

Poor IS design and complexity

Hospital information is entered for each transaction within a patient episode, even if all the consecutive transactions are with the same patient. This is an easily resolvable problem if usage patterns were taken into consideration during the design phase. Trying to retrieve information from such systems was described as doing detective work.

"In the vast majority of cases, our test results often go to the wrong place and have been sent out weeks ago - we're often asked to send the results to the wrong place, especially when consultants work on split sites. "

"We still can't even answer simple questions like how many new inpatients we treated last year with certain types of cancer."

Undefined responsibility for data quality

There can be many inputs to a patient's record with no-one taking an overview of the management and organisation of the file of case notes, with regard to data quality. This is a serious impediment to effective service delivery, and created considerable frustration amongst respondents.

"Often, patient case notes are locked in somebody's office, or the Doctor take them home. They're not supposed to, but many do. Patients are treated, especially at night, with no history of their background"

"Junior doctors very often forget to fill in the patient's name, the hospital ward, the clinical details, the consultant's name - I've a pile of results every day and I don't know who they should go to"

"Patient case notes are terrible - often inaccurate and the omissions are bad. You sit in a clinic for ten minutes trying to figure out what's going on"

Computer literacy

Younger doctors were thought of as more familiar with information technology than their senior counterparts. Senior clinicians still appear resistant to patient-centred IS developments and were quite outspoken, and often complacent about this situation.

"These youngsters (junior doctors) take to computers like a duck to water. I (senior consultant) just keep a box of cards with all the information I need"

"Many of my senior colleagues can't even use e-mail, let alone all this other bloody stuff. I might e-mail someone, but it's unlikely. I don't do it now, but I might do in the future"

Infringement of privacy vs. sharing of information

Medical staff were concerned about the privacy issue, but more so about their own privacy rather than that of patients. One of their essential requirements in any computerised clinical system was that if it allows the sharing of information, it should also include measures for ensuring privacy.

"What happens if some nurse looks up my medical records and finds that I've had an AIDS test or I've got arthritis – she might tell my girlfriend out of spite. It happens in the US all the time".

"The nurses would look at each other's records. How many abortions has she had? Has she seen a psychologist?"

Lack of trust

Many of the medical staff lacked trust in IT itself and in the IT staff. They questioned what IT could deliver given their frequent experiences with inappropriate planning, setting up, and costing of IT projects. IT projects were described as "always more expensive," than planned for, "never finished" on time, and "never of value to the professionals who are doing the work and their assistants". One clinician commented that:

"Information Technology is like the devil - it takes you to a high mountain, promises you everything you want, and then it will destroy you."

Discussion

Information is the lifeblood of performance management and performance improvement. Without valid and accurate information, performance management is a non-starter. Performance management should be driven from organisational strategy and should be linked to strategic objectives and strategic information requirements. At present, in both cases presented, this link has yet to be made. In the HAZ project, there was a classic contravention of the rule that structure should follow strategy. The HAZ project was initiated, new appointments made and the project team formed before the strategic planning process had taken place. In the second case of the two hospital trusts, an IS strategy was being developed, based on functional lines to serve the needs of individual departments. No reference was made to how this might link to partners in the local authorities, or address the policy of partnerships. This is hardly surprising since the IS Strategy was announced by government in 1998, before the partnership working initiative was launched. Perhaps the lesson from this is that seamless government cannot be expected to be a reality unless and until there is more coherence and integration between related government policies.

The purchaser-provider split and the commissioning of healthcare by Health Authorities has not yet caught up with the seamless government concept. Commissioning of services is still focussed on functions rather than patients – how many heart bypasses, how many cancer screenings etc? It is reminiscent of the way that banks were once blinded by their departmental silos, able only to quantify how many mortgages, how many loans, how many credit cards, and not to view their business holistically in terms of customers. In healthcare it is still not possible to deal with a total service for client groups – for example it is not possible to buy a total service for the care of the elderly.

While there is considerable synergy between the twin imperatives of performance management and accountability, it appears that the latter is the dominant factor in the culture and mindsets of these healthcare institutions. Moreover, it is ironic that government is on the one hand espousing the importance of public consultation for the effective design and delivery of public services, while on the other hand it is still insisting on measuring performance through the league table culture that is so distracting and damaging to real improvement on the ground. It is therefore not surprising that there is such reluctance, even resistance to connecting with the public to establish meaningful measures of customer attitudes and perceptions about public service delivery. Organisations that learn must exist in an environment where mistakes are not punished, where the culture makes it safe to fail and does not reward the fail-safe and failure-free attitudes that mitigate against innovation and experimentation.

Our respondents were so influenced by potential negative publicity and loss of future government funding that they dared not contemplate such honest public consultation. They could not grasp that expenditure on service delivery was pointless if it did not achieve real benefit in the eyes of consumers, however committed the service providers might be. Argyris of course provides some insights into possible causes of this dilemma, wherein his research with professional groups has highlighted the high degree to which they fear failure. In such circumstances, the professionals will engage in what Argyris calls defensive routines – sub-conscious and unintentional arguments to deflect criticism from themselves – after all, what would the public know about healthcare delivery?

What then of this case of partnership working? Surely in such a comparatively competition-free environment it would be simple to develop outcome measures that were meaningful to the public and that facilitated real performance improvement in service delivery? Yet here we see clear examples of a cultural mindset that is only familiar with measures of inputs and outputs – budgets allocated and money spent. This is a mindset that acts with blind-faith, hoping that expenditure will somehow result in health improvement, without ever checking that it does. Never mind that the

expenditure represents the best value for money, or that the professionals are doing their best. What would it take to change this ingrained professional-led culture, dominated by the win-lose thinking of league tables and the rhetoric of benchmarking, new deals, client consultation and the rest?

The change management literature has solutions in abundance. The starting point is to create a sense of urgency for such change, to answer the question, why should it matter? Such pressure for change would come, if only the public had a voice and could express their real levels of satisfaction with public services. Is it really that the healthcare professionals don't believe the public would really know, or are they simply too afraid to address the truth, or at least that they fear that the public would rate their services unfairly (see for example, Melkers and Thomas, 1998)? Once confronted with the need to change, this must then be translated into a meaningful vision of the new way of working – a vision for change that is understandable to those who deliver the services, not simply another attractive but empty mantra. This vision must also be acceptable to the public, and by definition, if it were driven by the public's view, it would be.

The next key step is for strong leadership to motivate staff to commit to the vision and to overcome the cynicism and tokenism that often sets in, particularly if the led perceive insincerity in their leaders. Culture change requires a longer-term view than the two-year experimentation of the HAZ project. It requires reassurance that policies will not be changed by governments more pre-occupied with the next election, and the removal of latent pressures to be seen as successful as quickly as possible.

Culture change and effective partnerships also require two additional things. Firstly, the staff need preparation to provide them with the new skills and abilities to change. Simply putting a group of people together in a HAZ project without sufficient facilitation to help them understand the differences between outputs and outcomes, or the skills to develop meaningful outcome measures will only create frustration and waste valuable time. Moreover, some investment in team building would be money well spent, given that it takes time for an inter-organisational partnership to develop trust. In both studies we did not detect much unwillingness to improve healthcare delivery; rather there was frustration with a system that was still functionally organised and measured. Staff also needs training to understand the methods and practices for measuring public attitudes and perceptions.

Secondly, culture change and effective partnerships need to be supported by appropriate changes to systems and structures. Budget allocations need to be linked to achievement of jointly shared outcomes. If the participants continue to encounter responsibility and accounting structures that militate against sustained commitment to integrated services, they will soon lose interest. While they may keep one eye on what they believe to be the rightness of community-based outcomes, they will still be looking tentatively at the budgets for their own functionally-based programmes, still dependent on allocation decisions driven by inputs and outputs. Moreover, new ways of working require new information provision. The temptation to resort to using existing measures that often have only a tenuous link to desired results can be great. Easily collected data, or pre-existing data cannot substitute for a re-configuration of existing information systems.

Conclusions

Whether this HAZ project will succeed or not is difficult to determine. Certainly, many of the good practices from the change management literature have not been followed. In the wider context, government policies may change, leading to a feeling of yet another failed initiative, not given enough time or resources to come to fruition. Such re-focusing saps the energy of organisational members already "punch-drunk with systemic change" (Kouzes et al, 1999) and can lead them towards a cynicism that future initiatives may suffer a similar fate. This paper contains at least three examples of incomplete systems thinking. Firstly, there ought to be some integration between the IS Strategy for hospitals and the partnership working policy in local authorities. Secondly, the HAZ

project needed to have representation from other key healthcare providers, including GPs and hospitals. Thirdly, placing loosely-coupled partnership teams in unchanged institutional structures without revamped systems and structures can only lead to tension and inefficiency.

What is more, the paper highlights the over-riding need for culture change and a better balance between the twin imperatives of accountability and performance improvement. While accountability will continue to be a paramount issue in public service, "public servants must be careful not to obscure another very important, and perhaps even prior question: What do their customers need from them in the first place? Accountability tends to lose its relevance when this question goes unanswered." (Shelton and Albee, 2000). Achieving outcome-related performance measures that include customer satisfaction is of course only part of the solution. It will be interesting to explore the use that managers make of these measures in their decision processes, given that other studies (Poister and Streib, 1999) suggest that under 40% of local authorities using performance measures actually use them meaningfully in their management and decision processes.

This paper suggests a way for healthcare to go beyond service focused management and to begin to formally manage relationships based on information management. Whether it will or not is still an open question.

References

- Ackoff, R L (1967), Management Misinformation Systems, *Management Science*, Vol. 14, No. 4, pp. B147-B156
- Arnould, E J and Price, L L (1995), River Magic: Extraordinary Experience and the Extended Service Encounter, *Journal of Consumer Research*, 20, 24-25.
- Audit Commission (1995,) *For Your Information: A Study of Information Management and Systems in the Acute Hospital*, Press On Printers, London.
- Babakus, E and Mangold, W G (1992), Adapting the servqual scale to hospital services: an empirical investigation, *Health Services Research*, Vol. 26 No. 6: 767-786.
- Bleeke, J and Ernst, D (1995), Is your strategic alliance really a sale? *Harvard Business Review*, 70 (1), 97-105.
- Bopp, K (1990), How patients evaluate the quality of ambulatory medical encounters: a marketing perspective, *Journal of Healthcare Marketing*, Vol. 10 No. 1: 6-15.
- Boulding, W, Kalra, A, Staelin, R, Zeitaml, V.A. (1993), A dynamic process model of service quality: from expectations to behavioural intentions, *Journal of Marketing Research*, Vol. 30: 7-27.
- Bowers, M R, Swan, J E and Koehler, W F (1994), What attributes determine quality and satisfaction within healthcare delivery?, *Healthcare Management Review*, Vol. 19 No 4: 49-55.
- Burns, F (1998), Information for Health: *An information Strategy for The Modern NHS 1998-2005: A national Strategy for Local Implementation*, NHS Executive, Wetherby, UK.
- Byrd, T A, Cossick, K L, and Zmud, R W (1992), A Synthesis of Research on Requirements Analysis and knowledge, *MIS Quarterly*, Vol. 16, No. 1, pp. 117-138
- Carmen, J (1990), Consumer perceptions of service quality: an assessment of the servqual dimensions, *Journal of Retailing*, Vol. 66 No. 1: 33-55.
- Caruthers J, Wright G (2000), Beyond Quality: strategic challenges of managing excellence. *Strategic Issues in Healthcare Management*, SICHM Conference, St Andrew, Scotland.
- Chenet, P, Tynan, C, Money, A (2000), The service performance gap: testing the redeveloped causal model, *European Journal of Marketing*, Vol. 3 No. 3\4: 472-495.
- Contractor, F J and Lorange, P (1998), Competition-vs-co-operation: a benefit/cost framework for choosing between fully owned investments and co-operative relationships, *Management International Review*, 28 (special issue) 5-18.
- Cronin, J J and Taylor, S A (1994), Servperf-vs-servqual: reconciling performance based and perceptions-minus-expectations measurement of service quality, *Journal of Marketing*, 58: 125-131.
- Cronin, J J and Taylor, S A (1992), Measuring Service Quality: a re-examination and extension, *Journal of Marketing*, Vol. 56: 55-68.
- Crosby, L, Evans, K and Cowles, D (1990), Relationship quality in services selling: an interpersonal influence perspective, *Journal of Marketing*, 54, July: 68-81.
- Darke, P and Shanks, G (1997), User Viewpoint Modelling: Understanding and Representing User Viewpoints during Requirements Determination. *Information Systems Journal*, 7 (3), 213-219.
- Das, T K and Teng, B-S (1999), Managing risks in strategic alliances, *The Academy of Management Executive*, 13 9(4), 50-62.
- Davis, G B (1982), Strategies for Information Requirements Determination, *IBM Systems Journal*, Vol. 21, No. 1, pp 4-30
- Department of Health (1992), *The Patients' Charter*, HMSO, London.
- Department of Health (1989), *Working for Patients: Medical Audit*, (Working Paper 6), HMSO, London 1989.
- Department of Health, (1998), *The New NHS, Modern and Dependable*, HMSO, 1998.
- Department of Health (1992). *The Health of the Nation: A Strategy for Health in England*, (White Paper), HMSO, London.
- Doz, Y L (1996), The evolution of co-operation in strategic alliances: initial conditions or learning processes? *Strategic Management Journal*, 17, 55-83.
- Dussage, P, Garrette, B and Mitchell, W (2000), Learning from competing partners: outcomes and durations of scale and link alliances in Europe, North America and Asia, *Strategic Management Journal*, 21, 99-126.
- EFQM (1999), *The EFQM Excellence Model: Public and Voluntary Sector Version*, EFQM, Brussels
- Ennew and Bijou (1997), Does organisational excellence predict performance: The case of retail banking, *Journal of Financial Services Marketing*, 2 (1), 55-64.
- Fazlollahi, B and Tanniru, M R (1991), Selecting A Requirement Determination Methodology-Contingency Approach Revisited, *Information and Management*, Vol. 21, pp. 291-303
- Fazlollahi, B and Tanniru, M.R (1991), Selecting A Requirement Determination Methodology-Contingency Approach Revisited, *Information and Management*, Vol. 21, pp. 291-303
- Gabbott, M and Hogg, G (1996), The glory of stories: using critical incidents to understand service evaluation in the primary care context, *Journal of Marketing Management*, Vol. 12; 493-503.
- Goul, M and Tonge, F (1987), Project IRMA: Applying Decision Support System Design Principles to Building Expert-Based Systems, *Decision Sciences*, Vol. 18, No. 3, pp. 448-467
- Griffiths, R (1983), *Report of the NHS Management Inquiry*, Department of Health & Social Security, London.

- Gronroos, C (1984), A service quality model and its marketing implications, *European Journal of Marketing*, Vol. 18, No.4: 36-44.
- Gronroos, C (1993), Towards a third phase in service quality research: challenges and future directions, *Advances in Services Marketing and Management*, Vol. 2: 46-64.
- Hakansson, H and Snehota, I (1995), *Developing Relationships in Business Networks*, International Thomson Business Press, London.
- Harrigan, K R (1988), Strategic alliances and partner asymmetries in F.J. Contractor and P. Lorange (Eds) *Co-operative strategies in International business*. Lexington Books. 141-158.
- Hevner, A R and Mills, H D (1995) Box-Structured Requirements Determination Methods, *Decision Support Systems*, Vol. 13, No. 3-4, pp. 223-240
- Kanter, R M (1994), Collaborative advantage: the art of alliances, *Harvard Business Review*, 72 (4), 96-108.
- Kaplan, R and Norton, D (1996), *The Balanced Scorecard*, HBS Press.
- King, W R (1978), Strategic Planning of Management Information Systems, *MIS Quarterly*, Vol. 2, No. 1, pp. 27-37
- Kotler, P (1968), *Marketing Information Systems*, Houghton Mifflin, Boston.
- Kouzmin, A, Loffler, E, Klages, H and Korac-Kakabadse, N (1999), Benchmarking and performance measurement in public sectors, *International Journal of Public Sector Management*, vol 12, 2, pp121-144.
- Linial, G (1995), European Healthcare Changes Parallel US. *Healthcare Executive*, 10 (2), 42.
- Melkers J and Thomas J C (1998), What do administrators think citizens think? Administrator predictions as an adjunct to citizen surveys. *Public Administration Review*, vol 58, 4, pp327-334.
- Montazemi, A R and Conrath, D W (1986), The Use of Cognitive Mapping for Information Requirements Analysis, *MIS Quarterly*, Vol. 10, No. 1, pp. 55-67
- Moody, J W, Blanton, J E, and Cheney, P H (1998), A Theoretically Grounded Approach To Assist Memory Recall During Information Requirements Determination, *Journal of Management Information Systems*, Vol. 15, No. 1, pp. 79-98
- Murfin, D E, Schlegelmilch, B B and Diamantopolous, R (1995), Perceived Service Quality and Medical Outcome: An Interdisciplinary Review and Suggestions for Future Research. *Journal of Marketing Management*, 11, 97-117.
- Parasuraman, A, Berry, L L, and Zeithaml, V A, (1985), More on improving service quality measurement, *Journal of Retailing*, Vol. 69 No. 1: 140-147.
- Parasuraman, A, Zeithaml, V A, Berry, L L (1985), A conceptual model of service quality and its implications for future research, *Journal of Marketing*, Vol. 49: 49-50.
- Parasuraman, A, Zeithaml, V A, Berry, L L (1994), Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria, *Journal of Retailing*, Vol. 70 No. 3: 201-230.
- Parasuraman, A, Zeithaml, V A, Berry, L L (1994), Reassessment of Expectations as a comparison Standard in measuring service Quality, *Journal of Marketing*, 58: 111-124.
- Paulin, M, Ferguson, R J and Payaud, M (2000), Business effectiveness and professional service personnel, relational or transactional managers? *European Journal of Marketing*, 34 (3 and 4), 453-471.
- Poister T H and Streib G (1999), Performance measurement in municipal government: assessing the state of the practice. *Public Administration Review*, vol 59, 4, pp325-335.
- Raghupathi, W (1997), Healthcare Information Systems. *Communications of the ACM*, 40 (8), 81-82.
- Ravald, A and Gronroos, C (1996), The value concept and relationship marketing, *European Journal of Marketing*, 30 (2),19-30.
- Rockart, J F (1979), Critical Success Factors, *Harvard Business Review*, Vol. 57, No. 2, pp. 81-91
- Schlegelmilch, B B, Carmen, J M and Moore, A S (1992), Choice and perceived quality of family practitioners in the united States and the United Kingdom, *The Service Industries Journal*, Vol. 14 No 1: 263-284.
- Segil, L (1998), *Strategic alliances for the 21st Century, Strategy and Leadership*, 26 (4), 12-16.
- Shaw, C D (1980), *Aspects of Audit: Acceptability of Audit*, BMJ, Vol. 280, pp 1443-6.
- Shaw, R (1998), *Improving Marketing Effectiveness: the methods and tools that work best*, The Economist Books. Profile Books, London.
- Shelton M W and Albee T (2000), Financial performance monitoring and customer-oriented government: a case study. *Journal of Public Budgeting and Financial Management*, vol 12, 1, pp87-105.
- Shewchuck, R M, O'Connor, S J, White, J B (1991), In search of quality measures: some questions regarding psychometric properties, *Health Services Management Research*, Vol 4 No. 1: 65-75.
- Smith, A M (1995), Measuring service quality; is servqual now redundant?, *Journal of Marketing Management*, 11: 257-276.
- Smith, R A and Houston, M J (1983), *Script based Evaluations of satisfaction with services, in Emerging Perspectives in Services*, L L Berry, G L Shostack and G D Upah, eds. Chicago: American Marketing Association, 59-62.
- Taylor, S A, and Cronin, J J (1994), Modelling patient satisfaction and service quality, *Journal of Health Care Marketing*, Vol. 14 No. 1: 34-44.
- The Audit Commission (1995), *For Your Information: A Study of Information Management and Systems in the Acute Hospital*, Press On Printers, London.
- Timpka, T (1994), The Healthcare Crisis: End or Beginning of the Heyday of Medical Decision Support Systems?. *Methods of Information in Medicine*, 33, 332-335.

- Vandamme, R and Leunis, J (1993), Development of a multi-item scale for measuring hospital service Quality *International Journal of Service Industry Management*, Vol. 4 No.3: 30-49.
- Walshe, K (1989), A Clear case for Audit, *Health Service Journal*, Vol. 99, pp 1244-5.
- Wetherbe, J C (1991), Executive Information Requirements: Getting It Right, *MIS Quarterly*, Vol. 15, No. 1, pp. 51-65
- World Health Organisation (2000), Healthy Nations. Reported in *The Times*, 21 June 2000, p8.
- Wright, G and Ayton, P (1987), Eliciting and Modelling Expert Knowledge, *Decision Support Systems*, Vol. 3, No. 4, pp. 13-26
- Youseff, F N, Nel, D and Bovaird, T (1996), Healthcare quality in NHS hospitals, *International Journal of Healthcare Quality Assurance*, Vol. 9 No 1: 15-28.
- Zeithaml, V A, Berry, I L, and Parasuraman, A (1993), The nature and determinants of customer expectations of service, *Journal of the Academy of Marketing Science*, Vol. 21: 1-12.