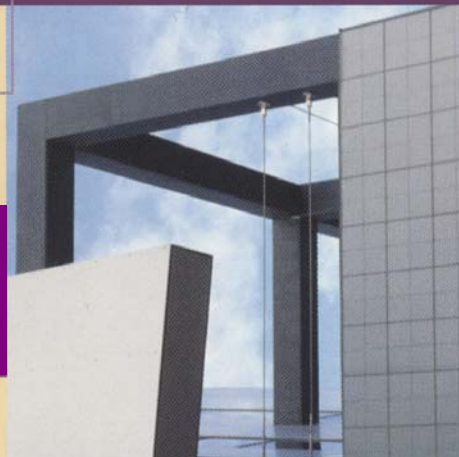


INSOURCING, OUTSOURCING AND SERVICE LEVEL MANAGEMENT

Nicholas Beaumont

Working Paper 60/03
September 2003

WORKING PAPER SERIES



ISSN 1327-5216

Abstract

(Abstract on next page)

This paper is a work in progress. Material in the paper cannot be used without permission of the author.

Abstract

This paper describes the concept of Service Level Management (SLM), reviews the scant literature and discusses the negotiation, implementation and monitoring of outsourcing agreements. The SLM concept originated in the context of computer services distributed to users through networks (e.g. banking through automatic telling machines). In this and similar situations the SLM methodology was used to help management balance the quality (exemplified "up time and response times) and the cost of the service. We argue that the SLM methodology should be applied outside the Information Technology discipline and extended in scope to the management of all phases of any outsourcing or insourcing project.

Outsourcing is becoming a routine business technique in which responsibility for an activity formerly performed in-house is transferred to an outside supplier. It is appropriate to recognize *insourcing*, in which an organisational unit formally contracts to supply goods or services to another unit of the organization. Australian businesses have now had appreciable experience of outsourcing and are considering issues that were neglected when the first outsourcing agreements were being negotiated. An emerging view is that both parties should co-operate in improving the client's business processes and share the benefits. Executives are considering what to do when an outsourcing project terminates: under what conditions should contracts be renewed, how should they be modified and how can clients be sure that the prices charged are reasonable?

INSOURCING, OUTSOURCING AND SERVICE LEVEL MANAGEMENT

“Service Level Management is [defined as] the disciplined and proactive methodology and procedures that ensure that service levels satisfying clients’ reasonable expectations are delivered to all classes of users in accordance with business priorities at reasonable cost.” (Sturm et al., 2000) or “the disciplined, proactive methodology and procedures used to ensure that adequate levels of service are delivered to all IT users in accordance with business priorities, at acceptable cost and in line with customer expectations.” (www.nextslm.org). The term Service Level Management (SLM) has almost always been used in network contexts. In this paper we recommend that the SLM methodology be used to negotiate, implement and monitor any insourcing or outsourcing arrangement.

Gupta (1992), Willcocks (1995) and others have defined *outsourcing* as passing functions previously performed in-house to outside contractors; we extend this definition to functions not previously performed in-house. *Insourcing* (implicit in an organisation that is divisionalised by function) is defined as an agreement for one part of an organisation to provide goods or services to another part. Outsourcing and (especially) insourcing agreements may be tacit or informal but, as will be demonstrated, formalisation is highly desirable. Insourcing is obviously common and implicit in an organisation that is divisionalised by function and exploits specialisation. The term *sourcing* means either insourcing or outsourcing. The terms *vendor* and *client* respectively signify the supplier and purchaser of a service.

WHY IS SLM IMPORTANT?

The use of Information Technology (IT) outsourcing (the most common kind of outsourcing) in Australia is increasing. This is exemplified by outsourcing decisions of the Australian Federal Government (Beer, 1999), AMP Insurance (McFarlan and Nolan, 1995), Ansett Australia, Mercantile Mutual (Howarth, 1999) and three large banks (King, 1998). Telstra, Australia’s largest telecommunications company, is considering outsourcing its IT function (Connors, 2001). In 1998 the Australian federal government unsuccessfully tried to force government departments to outsource their IT requirements. IT outsourcing is a growing Australian industry; Robertson (2001) opines that “Revenue from the Australian outsourcing market was \$A1.3 billion in 1997, and projections to 2004 will push it up to \$A5.3 billion, an average growth rate of 16 per cent. Quinn & Hilmer (1994) note that Nike and Apple Computer derived large advantages from outsourcing and associate outsourcing with business success.

There are many applications of outsourcing, for example; accounting services (Juma'h and Wood, 1999) human resource services (Hurley and Costa, 2001, pp 73-80; Siegel, 2000), facilities management (McEntee, 2000), supply of components in manufacturing, supplies (Hemmington and King, 2000), call centre requirements (Pappalardo, 1996), labour, printing, courier and delivery services (Hurley and Costa, 2001, pp 83-90 & pp 137-145), product development (Nellore, 2001). Small organizations especially often outsource professional services (accounting, advertising and legal requirements). We were unable to ascertain expenditure on different kinds of outsourcing in Australia.

There are several reasons why outsourcing has become more popular. This popularity has implications for internal providers of goods and services who must now compete against actual or potential outside vendors. The reasons, illustrated primarily by the outsourcing of information technology requirements, include:

Advances in information and communications technologies

Advances in Information and Communications Technologies (ICT), exemplified by electronic commerce, allow data to be instantly, accurately and cheaply transferred amongst departments and between organisations. If an organization outsources its payroll, it is easy and cheap to transfer relevant data stored in electronic form to the vendor and for the outsourcer to electronically update employees’ bank accounts, send electronic reports the tax office and return electronic reports to the client.

These changes have exposed internal departments to competition from outside suppliers. Prior to e-mail and Electronic Data Interchange (EDI), transferring data to and from an outside supplier might have involved delays that gave internal departments an effective monopoly. As will be seen, an arrangement with an outside supplier should be formalized, monitored and updated to reflect changing business requirements. These processes (and others such as selecting a vendor and managing the changes triggered by the introduction of outsourcing) may be expensive compared with the informal arrangements made between two departments of the same organization. Internal departments may work easily together because they share the same culture, history and enjoy daily informal contact. Higher management can resolve disagreements between the two departments by fiat but disagreements between a vendor and client require negotiation.

Cost Savings

By having expertise and up-to-date software a service provider may be able to maintain and run an application more cheaply than internal departments (Collins and Millen, 1995; Lacity et al., 1996; Loh and Venkatraman, 1992; McFarlan and Nolan, 1995; Willcocks et al., 1995). Economies of scale can lower costs; a service provider can supply, run and update the software needed for a common application, classically payroll and share registries and distribute the development, maintenance and running costs over many clients. Business matching vacancies with applications enjoy economies of scale. A service provider may be able exploit a large computer, call center, expensive software or specialist skills uneconomic for a small client (Benko, 1992; Currie and Willcocks, 1998). Small organisations will outsource to meet fractional requirements; a firm with only occasional legal requirements will not employ an in-house lawyer. Organisations may meet variable labour requirements or acquire urgently needed skills by outsourcing.

Risk Avoidance

By purchasing services (or goods) at a fixed cost per transaction (unit), a client obtains insurance against cost variation from the vendor. A firm may prefer to contract out an activity at an agreed price rather than try to ascertain in-house costs, cope with unpredictable project costs and durations or manage possible disruptions such as its own systems malfunctioning. A corollary is that the service provider's incompetence may disrupt its client's business (Benko, 1993).

Concentration on core activities and competencies

Outsourcing allows managers to concentrate on their organisation's core businesses. A manager may feel unable to competently manage a specialist function (such as Information Technology or legal services) or recruit specialist skills, to do so entails learning about and keeping up-to-date with unfamiliar disciplines. Vendors generally promise to manage non-core functions, allowing management to focus on central strategic business issues (Benson and Ieronimo, 1996; Caldwell and McGee, 1998; Lacity et al., 1996; McFarlan and Nolan, 1995; Prahalad and Hamel, 1990; Willcocks et al., 1995).

Avoidance of cultural problems

An effective IT department may have to have a culture that is different from that of the rest of the organisation. Outsourcing IT may ameliorate these problems. "Cultural differences can often cause friction between IT and management" (Williamson, 1997).

Better Measurement

Contemporary Information Technology has probably made it easier to measure precisely (but not necessarily accurately) the costs of internal operations such as selecting and inducting a new employee or preparing a customer statement. Although such costs may be stated with precision, their accuracy may depend on courageous assumptions about the way in which overhead costs are distributed amongst departments, activities and time periods; and estimates of intangible costs. Nevertheless, if management has ostensibly reliable estimates of the costs of internal activities, these will be used to compare internal providers with outsourcers. Quinn & Hilmer (1994, p 48-49) note that some organizations were startled to find that their

internal process were far more expensive than those of outsourcers and note that many organisations underestimated internal costs, especially the cost of managerial distraction from core activities.

DISADVANTAGES OF OUTSOURCING

Loss of distinctive competencies and dependence

Outsourcing the intellectual or other skills underlying a distinctive competence may be bad strategy because it creates dependency. A bank that outsources the development of software driving its automatic telling machines (ATMs) may advantage competitors who employ the same, now experienced, vendor or create new competitors. The bank may become dependent on the service provider, it may be impractical to transfer the provider's knowledge and skill back in-house and the service provider may use its monopoly power to demand a high price for changes such as making systems year 2000 compliant (McFarlan and Nolan, 1995). It may be impossible to keep some commercial secrets from a service provider intimately involved in core activities and the service provider may be able to identify and recruit its client's best staff.

Quinn & Hilmer (1994) cogently note that "core competency" is a largely undefined concept and suggest seven sources of core competency (e.g. "Skill and knowledge sets, not products or functions") that are either derived from natural monopoly power or are ways of creating and/or maintaining monopoly power. Quinn & Hilmer point out that outsourcing the construction of a new computer system may be cheaper than in-house development but may have deleterious strategic consequences. The organization has foregone the opportunity to develop relevant skills and a thorough knowledge of the business function to be computerized. This thorough knowledge (in part acquired by the vendor) might have been exploited to improve the business function, reduce costs or have been applied elsewhere in the organisation. The organization may become dependent on the vendor to maintain and/or change the function outsourced. By outsourcing, the organization loses information about the intrinsic costs of the outsourced operation and may be disadvantaged in negotiations.

Change and cultural problems

Outsourcing may create change problems. If an in-house function is outsourced, staff may be forced to adopt new work methods. Outsourcing a function may imply dismissal or redeployment of employees, changes in the work they do or their transfer to the service provider's employment and its different conditions (Antonucci et al., 1998; Caldwell and McGee, 1996).

Other Factors

There may be other influences on outsourcing decisions: the current Australian government opines that the private sector is intrinsically more efficient than the public sector (Beer, 1999). Like Total Quality Management and Business Process Redesign, outsourcing might be a managerial fad (Loh and Venkatraman, 1992, p 340; Shapiro, 1995) for which enthusiasm may fade. Outsourcing may be used as a cosmetic to avoid head-count limitations or convert a capital expenditure into a continuing expense. Contracts with external suppliers reduce flexibility, contractual changes made desirable by changed business conditions have to be negotiated.

PAST WORK

There is little academic literature on SLM or service level agreements (SLAs). A service level agreement is a contract codifying the sourcing agreement between vendor and client. SLM is an emerging discipline hitherto almost always applied to computer networks. Sturm (2000) and Lewis (1999) are the two standard texts; the former canvassing business issues (especially Service Level Agreements), the latter having a more technical emphasis. The website www.nextslm.org lists relevant monographs and papers, templates for drafting a service level agreement, links to vendors' web sites and a discussion group.

Almost all literature (except where noted) discusses SLM in the context of networks. Wexler (2001) defines quality of service (QOS) and discusses its importance. Clark (2000) and Mier & Percy (2001) discuss computer packages that monitor a network and measure various aspects of its performance (e.g. security intrusions, response times and equipment utilisation). Hayes (2000) and Beck & Allegratti (1999), give definitions of Service Level Agreements and their advantages and disadvantages. Blacharski (2000) gives a lucid account of SLAs, giving the technician's and user's perspectives and rightly stressing that many technical measures of network performance are but indirectly related to the network user's experience. DeNoia (2001) notes that e-business depends on networks and their performance. Bissel & Bogen et al (2000) give a more technical proposal for evaluating the QOS provided by a networked application. DeNoia (1999) explains how network managers can use SLM to move from "management by crisis" to rational management.

Examples of SLAs outside IT are rare, Coombs and Evans (2000) report on use of SLAs in the outsourcing of services by Great British local authorities. Two other examples are described at <http://www.dpb.nhs.uk/publications/archives/annualreview/ar97-98/ar97-984.html>, and <http://www.adm.monash.edu.au/procserv/suppliers/Copiers/Minolta%20SLA.html>.

THE IMPORTANCE OF SLM

The fundamental advantage of SLM methodologies is that they facilitate the clients' creation and maintenance of a professional relationship with the vendor. No organisation would agree to purchase goods without specifying their quality, delivery arrangements and price. We assert that, when acquiring goods or services from an internal or external supplier on a long-term basis, the SLM methodology (outlined below) should be applied. Sturm & Morris et al (2000) properly opine that not to have a service level agreement (SLA) with an outside supplier is "unconscionable" and "gross negligence". Entering into an SLA has many other benefits for all parties, some of these are (Sturm et al., 2000, pp 16-18):

Creating client satisfaction by meeting agreed targets. An SLA forces clients to codify their requirements, thereby improving both parties' understanding of them. Clients often benefit by being forced to scrutinize, so as to define and cost, internal operations nominated for outsourcing. The SLA process forces both parties to think through the effects of the business growing or changing. Agreement on targets will prevent "expectation creep": the assumption that services will continually improve.

Efficient resource allocation. There is a payoff between the level of service provided and its cost. During negotiations, a call centre operator might point out that responding to all calls within 30 seconds might be four times as costly as responding to most of them within a minute. Negotiation forces clients to appreciate the costs of their requirements and allows them to make well-informed choices amongst alternatives.

Professional interaction with clients. If the HR department can demonstrate that it has fulfilled its agreement to recruit and train salespeople to specified levels, its reputation and ability to market itself to other internal clients (perhaps in competition with outside suppliers) is enhanced. It is difficult to demonstrate professionalism without agreeing to and achieving performance criteria.

Cost control. The SLA process forces clients to analyse their extant costs and forces both parties to think through the effects of the business growing or changing.

MANAGING A SOURCING PROJECT

The stages of managing a sourcing project comprise:

- Defining the scope of the services to be outsourced
- Deciding on relevant measures of quality
- Deciding on transition arrangements
- Writing and agreeing to a contract (the service level agreement or SLA)

- Changing from internal to external operation
- Monitoring the quality of service
- Negotiating changes triggered by changing business conditions
- Renegotiating or terminating the agreement.

When managing an outsourcing project it is important that every detail is discussed and made explicit in the contract.

Scope

It is important to define carefully the services that are to be outsourced. This often provokes a salutary examination of internal processes, revealing that (in one case) reports were produced but never read. It may be difficult to ascertain all the functions that a work group whose functions are proposed for outsourcing fulfills. Over time a group may become a knowledge repository, come to supply informally vital but undocumented services (such as after sales support or managerial reports) to other departments or customers. Outsourcing the formally recognized functions and disbanding the group may mean that unrecognised but vital functions are not performed.

If outsourcing, for example, the maintenance of all computers in an organization, it is essential to create an up-to-date inventory of all desktop computers that the organization owns and clarify whether, for example, the outsourcer is to maintain and/or repair obsolete computers, Macintosh computers and/or laptops. Is the outsourcer expected to keep software current by installing new versions of Word or Windows? If the organization's software or hardware requirements change, how will the cost of acquiring and installing new software be shared? Is the outsourcer responsible for training? If so, the training requirements, possible changes to them over time and criteria assessing training quality must be agreed. A common problem is attributing blame for malfunctions. If different parties manage the software, hardware and networks it may be difficult to unambiguously attribute responsibility to one of them.

Service Quality

The criteria by which service quality is judged vary with the goods or services being delivered. These criteria may be tangible or intangible, it may be difficult to measure some important attributes objectively.

Commodities such as steel and coal have tangible criteria: Questions such as “Were the agreed quantities delivered to the right place in the right quantities at the right time?” and “Is the material of requisite quality or calorific value?” can be answered objectively. Measuring the skills learnt on a “Negotiating Skills” workshop is more difficult; a pencil and paper test may poorly reflect on-the-job performance. Measuring the response time users experience when using a computer network is technically difficult (and varies with time of day and day of week, the number of people trying to use the system and outages). Users perceive response times and react to slow responses in different ways: a person facing a deadline may explode, a phlegmatic colleague may simply turn to another activity.

For a recruitment function criteria might comprise the client being presented with a shortlist of three people all meeting the formal requirements within one month of notification of the vacancy. For a computer application run on a network, criteria would reflect features such as: the system working according to specifications, an agreed response time, the system being secure and user friendly.

Implementation

The most difficult phase of an outsourcing project may be its implementation, some of the tasks are:

Selecting Vendors: The vendor might be selected by: inviting public tenders, formalizing an arrangement with a trusted supplier or inviting expressions of interest from a few organizations. The vendor might be a divested division of the company, a group of ex-employees or a firm specializing in providing the required services.

Preparing a Contract: The contract formalizing a SLA should be negotiated on the assumption that the parties will co-operate to share the benefits of improving business processes – a black letter contract cannot cover all eventualities. The contract will usually comprise (Sturm et al., 2000, pp 58-75):

- Contract duration, arrangements for regular reviews, dispute resolution arrangements and extraordinary events.
- Definitions of: the work being outsourced; minimal and “stretch” service level objectives; ways in which the vendor’s performance will be measured; activities for which the outsourcer is responsible; fees and penalties for non-performance.
- Arrangements for re-negotiation. These may be required if the work being outsourced changes in kind or quantity.
- Transitional arrangements: will the outsourcer employ displaced staff?

The nature of the contract depends on the relationship between the parties. There is a spectrum of business relationships ranging from strictly arms length to close partnership (an integrated and co-operative relationship). The former may be appropriate in near-perfect commodity markets, the latter when companies form a partnership engaged on a common task such as software development (Berendt, 1999; Fulcher, 1998) or when both parties are internal. Agreements should recognise that the parties intend to co-operate and are entering into a long-term, mutually beneficial relationship. However, especially when outsourcing (not insourcing) caution is appropriate: Australian law at least does not recognise partnering or co-operative arrangements, only black letter contracts.

Managing Staff: Staff that were responsible for the activity being outsourced may be distressed to find that they are (implicitly) no longer valued and have uncertain prospects. Such staff may be retrenched, redeployed or offered employment with the outsourcer. The last case may offer better career prospects but different employment conditions. Internal procedures may change to mesh with outsourcing arrangements. The new arrangements will typically be more disciplined and some training may be necessary. Managerial roles will change: Information Technology managers were directly responsible for myriad tasks; they now become resource managers, and manage indirectly, for example by negotiating with vendors instead of instructing subordinates.

CONCLUSION AND PROPOSED FUTURE RESEARCH

Information and Communications Technologies (ICT) make it much easier for organisations to share data and ascertain and compare internal and external costs implying that internal departments may have to compete against external suppliers advantaged by expertise and economies of scale. Especially as more “core” activities are candidates for sourcing, it is “unconscionable” to insource or outsource tasks without specifying and monitoring the quality of the work done and maintaining an appropriate relationship with the vendor. The SLA is the appropriate tool for doing this and its scope and intent should be extended so that it becomes a tool for managing any sourcing arrangement. There is little literature on or evidence of the use of SLM or SLAs except in connection with computer networks.

We have obtained funding to investigate the use of outsourcing by Australian organisations; a large consulting firm is supporting this research. A survey of outsourcing practices applied to Australian companies will include questions on their use of SLM. We want to ascertain basic information: how formal the arrangements underlying sourcing are; the balance between co-operation and contractual obligation; how performance is monitored; how the success of sourcing arrangements is measured; how successful these arrangements have been; how the parties adapt to changing requirements; and how disputes are resolved. We will collect assessments of the success of sourcing arrangements and test (inter alia) the hypotheses: “That sourcing success is associated with having a formal agreement and the degree of cooperation”; “That sourcing an activity reduces both tangible and intangible costs.” and “That sourcing is associated with the client’s customers experiencing an improved quality of service.”

REFERENCES

- Antonucci, Y.L., Lordi, F.C. and Tucker, J.J., III, 1998. The pros and cons of IT outsourcing. *Journal of Accountancy*, 185, 6, 26-31.
- Beck, J. and Allegretti, B., 1999. SLAs defined: Meeting response time service level agreements in an. *Enterprise Systems Journal*, 14, 3, 40-44.
- Beer, S., 1999. Outsourcing 'likely to end in failure', *The Australian Financial Review*, pp. 34.
- Benko, C., 1992. If information systems outsourcing is the solution, what is the problem? *Journal of Systems Management*, 43, 11, 32-35.
- Benko, C., 1993. Outsourcing Evaluation: A Profitable Process. *Information Systems Management*, 10, 2, 45-50.
- Benson, J. and Ieronimo, N., 1996. Outsourcing decisions: evidence from Australia-based enterprises (outsourcing plant maintenance). *International Labour Review*, 135, 1, 59-73.
- Berendt, A., 1999. Telecoms/IT deal to "reshape" marketplace. *Telecommunications*, 33, 3.
- Bissel, T., M., B., C., B. and V., H., 2000. Service level management with agent technology. *Computer Networks The International Journal of Computer & Telecommunications Networking*, 34, 6, 831-841.
- Blacharski, D., 2000. The changing face of service level agreements. *Network Magazine*, 15, 2, 94-97.
- Caldwell, B. and McGee, M.K., 1996. DuPont goes outside. *Informationweek*, 610, 14-16.
- Caldwell, B. and McGee, M.K., 1998. Surge in Services. *Informationweek*, 663, 57-62.
- Clark, E., 2000. Tweaking the SLA performance gauge. *Network Magazine*, 15, 9, 70-77.
- Collins, J.S. and Millen, R.A., 1995. Information Systems Outsourcing by Large American Industrial Firms: Choices and Impacts. *Information Resources Management Journal*, 8, 1, 5-13.
- Connors, E., 2001. Outsourcing Trims Telstra By 600, Australian Financial Review, Sydney, pp. 15.
- Coombs, H. and Evans, A., 2000. Managing central support services through service level agreements. *The Government Accountants Journal*, 49, 1, 54-59.
- Currie, W.L. and Willcocks, L.P., 1998. Analysing four types of IT sourcing decisions in the context of scale, client/supplier interdependency and risk mitigation. *Information Systems Journal*, 8, 2, 119-143.
- DeNoia, L., 1999. How network managers spend the day. *Business Communications Review*, 29, 11, 30-35.
- DeNoia, L. and Metzler, J., 2001. E-business trends boost enterprise interest in SLM (service level management). *Business Communications Review*, 31, 44-50.
- Fulcher, J., 1998. Have it your way. *Manufacturing Systems*.
- Gupta, U.G. and Gupta, A., 1992. Outsourcing the IS Function: Is it Necessary for your organization? *Information Systems Management*, 9, 3, 44-50.
- Hayes, H., 2000. Paying for network performance. *Federal Computer Week*, 14, 16, S14-S20.
- Hemmington, N. and King, C., 2000. Key dimensions of outsourcing hotel food and beverage services. *International Journal of Contemporary Hospitality Management*, 12, 4, 256-261.
- Howarth, B., 1999. IT Outsourcing: The Next Generation. *Business Review Weekly*, 21, 42, 72-78.
- Hurley, M. and Costa, C., 2001. *The blurring boundary of the organisation*. KPMG Consulting (Australia), Melbourne.
- Juma'h, A.H. and Wood, D., 1999. Outsourcing Implications for accounting practices. *Managerial Accounting Journal*, 14, 8, 387-395.
- King, J., 1998. Companies team up for equity outsourcing. *Computerworld*, 32, 11, 16.

- Lacity, M.C., Willcocks, L.P. and Feeny, D.F., 1996. The Value of Selective IT Outsourcing. *Sloan Management Review*, 37, 13-25.
- Lewis, L., 1999. *Service level management for enterprise networks*. Artech House, Boston, [Mass.] ; London, xiii,307 pp.
- Loh, L. and Venkatraman, N., 1992. Determinants of IT Outsourcing: A Cross - Sectional Analysis. *Journal of Management Information Systems*, 9, 7-24.
- McEntee, H., 2000. Pulling some strings: A case for outsourcing facilities management. *Journal of Property Management*, 65, 6, 76-81.
- McFarlan, F.W. and Nolan, R.L., 1995. How to Manage an IT Outsourcing Alliance. *Sloan Management Review*, 36, 9-22.
- Mier, E.E. and Percy, K.M., 2001. Measuring SLA compliance. *Business Communications Review*, 31, 5, 34-39.
- Nellore, R., 2001. The impact of supplier visions on product development. *Journal of Supply Chain Management*, 37, 1, 27-36.
- Pappalardo, D., 1996. Outsourcing call center services. *Telephony*, 230, May 20, 9.
- Prahalad, C.K. and Hamel, G., 1990. The Core Competence of the Corporation.
- Quinn, J.B. and Hilmer, F.G., 1994. Strategic Outsourcing. *Sloan Management Review*, 43-55.
- Robertson, R., 2001. Size Dominates The IT Outsourcing Market, Australian Financial Review, Sydney, pp. 3.
- Shapiro, E.C., 1995. *Fad Surfing in the Boardroom*. Harper Collins, Sydney.
- Siegel, G.B., 2000. Outsourcing personnel functions. *Public Personnel Management*, 29, 225-236.
- Sturm, R., Morris, W. and Jander, M., 2000. *Foundations of Service Level Management*. SAMS, Indianapolis.
- Wexler, J., 2001. The QOS conundrum. *Business Communications Review*, 31, 4, 48-53.
- Willcocks, L.P., Fitzgerald, G. and Fenny, D., 1995. Outsourcing IT: The Strategic Implications. *Long Range Planning*, 28, 5, 59-70.
- Williamson, M., 1997. Brain hunt. *Computerworld*, 31, 26, 77-80.