

**OPERATIONAL PERFORMANCE and GOVERNANCE of
OUTSOURCED LOGISTICS SERVICE PROVIDERS
in HUMANITARIAN SUPPLY CHAINS**

Jim Rooney
Consultant
jrooney@igate.net.au
0439 875 894

Kate Hughes
Australian Graduate School of Management
University of NSW
kateh@agsm.edu.au
0415 915 713

OPERATIONAL PERFORMANCE and GOVERNANCE of OUTSOURCED LOGISTICS SERVICE PROVIDERS (LSP) in HUMANITARIAN SUPPLY CHAINS

ABSTRACT

Only limited attempts have been made in the financial or outsourcing streams of academic writings to explore or quantitatively model the relationship(s) between operational and financial performance metrics of outsourced service providers. Since humanitarian supply chains (which are formed in response to human or environmental disasters) rely on an outsourcing model it is critical that there is an effective method developed to assess their operational performance and governance. This paper reviews the current literature on performance measurements in outsourcing, with its specific application to humanitarian supply chains, and highlights the paucity of adequate models of performance in the examination of this vital area of research. As a consequence, the paper concludes by outlining the potential areas for future research to start to address this gap.

Keywords:

Outsourcing, Performance Management, Humanitarian Supply Chain Management.

INTRODUCTION

The devastation associated with natural and man-made disasters continues to capture media and public attention. Over the past two years this has included natural disasters such as the Asian tsunami of December 2004, the hurricanes in Florida 2005, earthquakes in central Asia and even more recently (and closer to home), the cyclones on the Australian coastline in both Queensland and Western Australia. Equally heartbreaking is the ongoing impact of the wars in Afghanistan and Iraq, and the escalating humanitarian crisis in areas such as Sudan.

There is significant, long standing and well respected academic literature on the role of international agencies in Third World economic development with related research into the response of such institutions to humanitarian crises. In assessing the operational performance and governance of institutions assisting relief efforts, the overwhelming academic focus is on the cultural, political and macro-economic implications of such intervention. Furthermore, the major emphasis is in the context of developing countries, where the infrastructure and financial resources within these countries to facilitate the support of a relief effort are often lacking.

Humanitarian aid agencies work to provide goods and services to prevent (or relieve) the suffering of the victims of natural disasters or in areas of “structural crisis” where there have been severe political, economic or social breakdowns (European Commission 2004). The prime focus in both news media and academia is on the aid agencies themselves, although the vast majority of humanitarian work is actually performed by sub-contracted or outsourced service providers. This is especially true of the logistics function. To date, there have been only limited attempts to explore and quantitatively analyse the performance of outsourced logistics and service providers within the financial or outsourcing literature e.g., refer Long and Wood (1995), and Pettit and Beresford (2005).

A significant proportion of the available literature in this area of study is prescriptive which, while important, is incomplete. At this stage the key quantitative relationships between performance

measurement and logistics outcomes have not been fully explored or modelled. There is a paucity of predictive models that could help humanitarian organisations to select and/or manage their logistics service providers (LSPs). This is surprising given the external requirement of aid institutions for ongoing reporting, and increasing accountability and transparency in their activities. The issue of governance in disaster relief is no longer *only* an institutional issue nor is it *only* the responsibility of the aid agency. The co-ordinating organisations are increasingly subject to scrutiny as the level of media exposure and public interest has increased.

The limited quantitative research to date is focussed on either modelling the humanitarian relief process (refer Carter, 1999 and Waugh, 2002) or on the analysis of expenditure and/or broad distributional measures in humanitarian supply chains, rather than on developing specific measures that reflect the performance criteria important to humanitarian outcomes. There is also little consideration of the strategic alignment between these institutions and the logistics service providers (LSPs) that are used to deliver the goods and services provided for humanitarian relief, as these are often alliances of necessity, and not of choice.

Due to the general lack of available specific operational performance data and without primary data needed to develop a viable model, this Paper will develop some exploratory links between nominated operational performance measures and the humanitarian outcomes normally required in crisis situations. The demonstrated links provide opportunities for future research to address the gaps in the literature. As a result, there is a need to collect primary operational performance data based on consistent logistics performance measurement taxonomy within a wide range of humanitarian crisis situations and logistics service providers. This is a key requirement to support further developments in this area of research.

OUTSOURCING

Outsourcing services have been available for some time with some sources dating the practice back to the 1960s as a commercial product offering (Lee & Kim 1999; Gewald & Konig 2004).

The availability and uptake of such services has continued to increase in both scope and depth globally. The growth in outsourcing opportunities (and increased awareness of these opportunities) has placed pressures on organisations (both commercial and government) to use these services (Sullivan & Ngewenyama 2005). Discussion of the definition and scope of disaster relief and outsourcing is beyond the scope of this paper. The authors refer to existing literature on this subject as background to this discussion; for example Pettit and Beresford (2005) specifically address the disaster relief environment, and Gilley and Rashid (2000) and Gattorna (2003) for outsourcing.

The focus of this paper is specifically on the use of outsourcing services in disaster relief operations. While many of the aspects of supply chain outsourcing in the commercial world are relevant, there needs to be recognition that, as suggested by Long and Wood (1995), disaster relief is materially different from 'normal business operations' in four key ways:

1. The operational environment is often within developing economies with poor or damaged infrastructure, but not always, as witnessed in the recent disasters such as Hurricane Katrina in USA, and Cyclone Larry in northern Australia;
2. The consumer of the services is not the contracting party; in other words, there is limited or no transformation (commonly termed 'value add') of delivered goods by the disaster relief agencies – although the goods themselves are invaluable;
3. Military logistics often need to be combined with civilian operations; and
4. It occurs within an environment of political interference or a vacuum (can be either). In the case of disaster relief, there is a significant use of outsourced service providers and a recognised need for greater coordination in this environment, as highlighted in a recent review of relief coordination efforts across agencies (United Nations 2004).

Thus, in the study and practice of disaster relief, there is a clear need for a robust performance measurement system (PMS) available to track and monitor the delivery of required services. In addition, standardised measurement systems need to be adapted to the unique situations

encountered in humanitarian aid as only through the development of a framework approach will consistent improvement occur of the quality of outsourcing services. For example, a PMS would be vital to the one of the largest coordinating groups involved in humanitarian aid, the United Nations Joint Logistics Council (UNJLC). Their "...mandate is to co-ordinate and optimise the logistics capabilities of humanitarian organisations in large-scale emergencies" and achieved through the use of Pipeline/Commodity Tracking and Logistics Support Information (UNJLC 2006).

In summary, the authors believe that it is reasonable to expect the existence of operationally-based, predictive model that links outsourcing strategy with performance in terms of not only financial and operational measures, but also with an view to monitoring donor expectations (and governance requirements) along with appropriate recipient outcomes or targets. This need is further reinforced by the emergence of material levels of disillusion by donors and recipients alike with the results of outsourcing of humanitarian relief services in its many forms, including in the area of disaster recovery management (Chertoff 2005).

In the business world, approximately 15% of typical Outsourcing Agreements for services have been identified by the users of such services as being a failure (Barthelemy 2001; PA 2004). Although equivalent figures are not currently available relating to the humanitarian context, the consequences of such failure, where time and finances are limited and whole communities are relying on these services, the consequences of such failure are extreme.

According to Gellrich and Gewald (2005: 3), "Outsourcing research traditionally addresses three major questions:

1. Why a corporation should employ outsourcing as a strategic tool?
2. What to outsource? and
3. How outsourcing should be conducted?"

This view is supported by a contemporary literature review in Quelin and Duhammel (2003), with the most recent focus being on risk management and mitigation associated with outsourcing, previously a neglected area of research; refer to Willcocks and Lacity (1999). Unfortunately, the available research and papers on outsourcing in the commercial context has not been replicated in the study of outsourcing in humanitarian aid situations.

Logistics and the management of logistics service providers (LSP) are recognised by relief agencies as a “core competency”. This is demonstrated in a relatively recent industry-sponsored study where the need for logistics competencies is clearly recognised by relief agencies (although not always acted on), with 45.2% of agencies having staff with formal qualifications in logistics and transport (Oloruntoba & Grey 2002). Unfortunately, the same study shows that the focus of these agencies is more administrative in nature with the majority regarding their strengths as being in contracting and warehouse management; but not in technology or IT software for supply chain integration and improved efficiency; and with little or no focus on measuring logistics costs or staff performance.

EXISTING PERFORMANCE MANAGEMENT LITERATURE

The general academic literature on performance management has explored a number of key themes and techniques from both financial and non-financial perspectives, including models such as Norton and Kaplan’s (2005) “Balanced Scorecard” that combines both perspectives (Ittner & Larcker 1998a). In particular, recent literature has examined the relationship between various performance measures and the extent to which non-financial measures predict future financial success. Unfortunately, the results are mixed, with a lack of consistent definitions of the measures themselves, along with major limitations due to the assumptions associated with internal optimisation of non-financial measures, e.g., customer satisfaction as discussed by Ittner & Larcker 1998b). In addition, there is evidence to suggest that companies also have difficulty developing linkages between financial and non-financial measures, and instead rely on frameworks that are generic and/or subject to individual management ‘whims’ (Ittner & Larcker

2003). In particular, this finding has been shown to apply to implementation of the “Balanced Scorecard”; refer to Norreklit (2000) and Davis and Albright (2004) for examples.

At this stage quantitative analysis of the operational performance of outsourcing arrangements and outsource service providers is limited, with Lee and Kim (1999), Donnellan (2003), and Gilley and Rasheed (2000) being among the few examples of this research. The majority of available research is focussed on prescriptive analysis and opinion on outsourced service management, with heavy focus on high level insights into the rationale for outsourcing; for example, Currie and Willcocks (1998), Grover and Cheon (1996); as well as negotiation refer Chaudhary et al. (1995); and governance processes, refer to Lacity and Willcocks (1998).

Examples of such analysis is even rarer for humanitarian relief situations with the work by Phelan and Hayes (2003) being typical of the news/case study focus. In the opinion of the authors of this Paper, this is interesting, but not particularly useful for creating a framework for measuring the performance of outsourced service providers in such circumstances.

In the study of humanitarian supply chains, there are logistics process models specifically designed for disaster relief situations, with examples including: the “Disaster Relief Model” developed by Jennings et al. (2000); the various “Conflict Models” developed by the Joint Doctrine and Concepts Centre (JDCC) for the UK military (Pettit & Beresford 2005); and the “Logical Framework Process” (Drifmeyer & Llewellyn 2004). However, as with commercially focussed literature, these models are descriptive in nature and do not give significant insight into the performance of outsource service providers in disaster contexts. Attempts at developing a predictive quantitative model have generally focussed on very specific aspects of the outsourcing process rather than performance, such as the models that attempt to identify *when* an outsourcing decision is likely to be made e.g., Gomes and Joglekar (2003); Swan and Allred (2003); and Gewald and Konig (2004).

Consequently, the small number of quantitative models in the area of outsourcing are limited in their application to real world issues of outsource service provider selection and management. In addition, they provide limited practical guidance on which operational measures are critical to outsourcing success, or even how such success can be defined. This applies to disaster relief as well as in “business-as-usual” commercial situations.

MANAGING OUTSOURCED PERFORMANCE

In the commercial world, the major cause of dissatisfaction with outsourcing results to date has been an inability to achieve expected business benefits. As an example, the “2002 IT Outsourcing Survey” conducted annually by PA Consulting (2004), found from a sample of 116 organisations from across North America, Europe and Asia Pacific that:

- 66% had either not achieved or only partly achieved the expected benefits from outsourcing;
- 61% had not fully realised expected efficiency in use of resources; and
- 52% had not reached the expected responsiveness to change.

In addition, dissatisfied customers have recorded:

- experiences where hidden costs of up to 18% of the value of the Outsourcing Agreement may have “...even cancelled out the... potential savings from outsourcing.” (Barthelemy 2001: 60);
- an inability to realise expected business benefits where “...over half (55%) of benefits rated as ‘highly important’ had not been fully realised” (PA 2004: 6); and
- increased risk (Willcocks & Lacity 1999).

In order to understand the causes of this dissatisfaction, the authors reviewed some of the limited studies that exist on performance in an outsourced arrangement in the commercial world, and identified a number of key insights documented in the academic literature on outsourcing:

- Firstly, outsourcing appears to benefit firms that operate in relatively stable business environments and are pursuing cost leadership. The potential explanation for this finding is associated with the reduced transaction costs and greater control over the capture of economic rents associated with firms in less dynamic business environments (Gilley & Rasheed 2000).
- Secondly, the perception of outsourcing performance, particularly with regards service delivery, is mixed. For example, one industry study found that nearly 80% of participants had terminated IT outsourcing relationships before the contract was due to end, and approximately 70% of these had engaged an alternate outsourcing provider (DiamondCluster 2002).
- Thirdly, close collaboration with service providers is a key success factor (e.g., Gold 2003; Mitchell 2002; Young & Scholl 2000) but is rarely achieved (e.g., Sabath & Fontanella 2002; Hyland 2002) with notable exceptions such as Walmart (Useem 2003), Dell (Magretta 2002), Cisco (Grosvenor & Austin 2001), Microsoft (Avery 2003), Gillette (Duffy 2004) and other less well known, but significant brand names such as Alcatel, Lanier and StorageTek (Frontline Solutions 2003).
- Finally, attempts to build robust PMS have generally not resulted in a performance model that can consistently predict future results. Successful provision of outsourced services requires the delivery of all three of these essential contributors (outlined above). Without an effective and timely Performance Management Systems (PMS), reduced ownership and control that is a characteristic of outsourced services along with increased risk of failure for such arrangements will lead to the failure of the outsourced arrangement. For the purposes of this paper, a PMS is defined as “...decision support... that, through a set of indicators, allows an analysis of the current state of the enterprise and comparison with strategic objectives” (Chalmeta & Grangel 2005: 73). As a direct consequence, recent finance research has attempted to develop such models in order to provide a consistent theoretical framework e.g., Chan et al. (2003); Schmitz and Platts (2003); and Chalmeta and Grangel (2005).

In humanitarian relief situations the roles and responsibilities of the various agencies and related stakeholders (e.g., government and military agencies, volunteer organisations, as well as corporate contributors) are often unclear, with the profit motive present in the commercial world either hidden or non-existent. Of increasing importance in this type of supply chain is the need for transparency and governance of *how* the funds are spent along with the optimal and most effective distribution of goods and services. Due to increased media coverage of these tragic events its often the *perception* of ‘good’ governance that is important e.g., in the aftermath of the Bali Bombing and the Asian tsunami the Red Cross was investigated concerning the distribution of funds (Ryle 2005).

As discussed in the section above, there is a gap in current academic literature for models that predict the financial performance of virtual or outsource service providers based on their operational performance. So, why the need to examine the operational performance of outsourcing service providers to the various disaster relief agencies, and what is the theoretical basis for this need? Starting with the obvious question of need, “Performance data is essential for improvement initiatives, process management and competitive positioning, effectiveness and enhancement...” (Gattorna 2003: 219).

There are few specific publications relating to humanitarian supply chains that focus on outsourcing performance and metrics in the disaster relief context. This lack of information is underlined by the recent publication *Humanitarian Response Review* (HRR) (Egeland 2005), commissioned by the United Nations Emergency Relief Coordinator (ECR). Their recommendation was for a “...benchmarking system (to) be established to enable better monitoring and measurement of the effectiveness of Disaster response” (Sphere Project 2006: 1). The USA’s Humanitarian and Emergency Logistics Professionals (HELP) has also called for efforts to be made to improve the professionalism of “...individuals providing humanitarian and emergency logistics” (Auton 2006).

CONCLUSIONS and FUTURE RESEARCH

Given the exploratory nature of this paper, the authors have identified a number of areas of study that could form a basis for further exploration and theory development in the following areas:

- Firstly, normalisation of logistics performance definitions and standardised data gathering from a wide range of outsourcing arrangements. This would include benchmarking for an agreed framework for reporting and governance of both the coordinating aid agencies and the outsourced (logistics) providers.
- Secondly, further development of current theory on the relationship between the relevant operational performance measures and financial performance for outsource service providers to disaster relief agencies, incorporating physiological and group theory. This would provide background and support to data collection and analysis for future research in this topic area. While it is beyond the scope of this paper to detail the modelling techniques required, a number of the operational performance measures applicable to outsourcing and virtual service providers alike deserve to be analysed in more detail though the independent gathering of performance data.
- Thirdly, investigation of the effect of the time-lag in delivery of goods and services in the initial “emergency response” phase of the disaster, and then compared with additional data independently collected well into the “management phase” of the relief effort i.e., the different delivery phases in the humanitarian relief effort may affect the activities performed by outsourced service providers, and consequently the type of performance metrics that are required.
- Fourthly, completion of a time series quantitative analysis of disaster relief logistics outsource service providers from an array of countries, agencies and humanitarian functions to promote greater understanding of the common business and managerial relationships across a diverse range of operational environments and circumstances.
- Finally, analysis of the performance relationships between relief agencies, as well as between government, the military and corporate contributors, where required, could

benefit from further collation and analysis of operational and financial performance data from a diverse range of outsourcing service providers - including those operating in areas related to emergency response such as emergency services e.g., Australia's Bush Fire Brigade and State Emergency Services (SES).

By addressing these aspects, a predictive model will allow academics and logistics practitioners, as well as humanitarian aid agencies and their clients, to measure the performance of outsourced service providers. This would also contribute to an improved ability to manage the activities required in humanitarian aid contexts and to ensure that both internal and external requirements for transparency and governance are met.

REFERENCES

- Auton, B. (2006) "Report: Humanitarian and Emergency Logistics Professionals (HELP)" *Focus*, March, pp. 14-17.
- Avery, S. (2003) "Microsoft takes steps to world class procurement" *Purchasing*, April 3, pp. 34-37.
- Barthelemy, J. (2001) "The Hidden Costs of IT Outsourcing" *MIT Sloan Management Review*, Spring, Volume 42, Issue 3, pp.60-69.
- Carter W.N. (1999), "Disaster Management: A Disaster Management Handbook" *Asian Development Bank*, Manila, p. 416.
- Chalmeta, R. & Grangel, R. (2005) "Performance management systems for virtual enterprise integration" *International Journal of Computer Integrated Manufacturing*, Volume 18, Issue 1, pp. 73-84.
- Chan, F.T.S.; Qi, H.K.; Chan, H.C.W. & Lau, R.W.L. (2003), "A conceptual model of performance measurement for supply chains" *Management Decision*, Volume 41, Issue 7, pp. 635-642.
- Chaudhary, A.; Nam, K. & Rao, R. (1995) "Management of Information Systems Outsourcing: A bidding Perspective" *Journal of Management Information Systems*, Volume 12, Issue 2, pp. 131-159.
- Chertoff, M. (2005) "Overhauling Relief Logistics" *Traffic World*, Volume 269, Issue 42, p. 6.
- Currie, W. & Willcocks, L.P. (1998) "Analysing Four types of IT Outsourcing Decisions in the context of Size, Client/Supplier Interdependency and Risk Mitigation" *Information Systems Journal*, Volume 8, Issue 2, pp. 119-43.
- Davis, S. & Albright, T. (2004) "An Investigation of the effect of the Balanced Scorecard implementation on financial performance" *Management Accounting Research*, Volume 15, pp. 135-153.
- DiamondCluster (2002) "Global IT Outsourcing Study" *DiamondCluster International*.
- Donnellan, M.A. (2003) "Strategic transformation and supply chains" *Gower Handbook of Supply Chain Management*, Gower Publishing, Aldershot, pp. 501-519.
- Drifmeyer, J. & Llewellyn, C. (2004) "Toward More Effective Humanitarian Assistance" *Military Medicine*, Volume 169, Number 3, March, pp. 161-169.
- Duffy, M. (2004) "How Gillette Cleaned up its Supply Chain" *Supply Chain Management Review*, April, pp. 20-27.
- Egeland, J. (2005) *Humanitarian Response Review*, United Nations Emergency Relief Coordinator (UNECR) Publication.
- European Commission (2004) "Humanitarian Aid" Website: www.ec.europa.eu, accessed 20/10/06.
- Frontline Solutions (2003) "Supply Chain Superstars" *Frontline Solutions*, October, Volume 4, Issue 10, pp. 16-39.

Gattorna, J.L. (Ed.) (2003) *Gower Handbook of Supply Chain Management*, Gower Publishing, Aldershot.

Gellrich, T. & Gewald, H. 2005. "Sourcing risk and the capital market's perspective: A study of the global financial services industry" *E-Finance Lab*, Working Paper.

Gewald, H. & König, W. (2004) "Predicting the Adoption of BPO: the Role of Perceived Risk and Technology Acceptance" *Institut für Wirtschaftsinformatik White Paper*, Website: www.wifo1.bwl.uni-mannheim.de, accessed 20/05/06.

Gilley, K.M. & Rasheed, A. (2000) "Making More by Doing Less: An Analysis of Outsourcing and its Effects on Firm's Performance" *Journal of Management*, Volume 26, Issue 4, pp. 763-790.

Gold, S.A. (2003) "5 steps to selecting the right provider" *Logistics Management*, December, pp. 14-18.

Gomes, P.J. & Joglekar, N.R. (2003) "The Costs of Coordinating Distributed Software Development Tasks" *BU School of Management Working Paper*.

Grosvenor, F. & Austin, T.A. (2001) "Cisco's e-Hub Initiative" *Supply Chain Management Review*, Volume 5, Issue 4, July, pp. 28-35.

Grover, V. & Cheon, M.J. (1996) "The effect of service quality and partnership on the outsourcing of information systems functions." *Journal of Management Information Systems*, Volume 12, Issue 4, pp. 89-117.

Hyland, R. (2002) "Real Collaboration Remains Elusive" *Transportation & Distribution*, August, pp. 52-56.

Ittner, C.D. & Larcker, D.F. (1998a) "Innovations in Performance Management: Trends and Research Implications" *Journal of Management Accounting Research*, Volume 10, Number 3, pp. 205-238.

Ittner, C.D. & Larcker, D.F. (1998b) "Are financial measures leading indicators of financial performance? An analysis of customer satisfaction" *Journal of Accounting Research*, Volume 36, Number 3, pp. 1-35.

Ittner, C.D. & Larcker, D.F. (2003) "Coming up Short on Non-financial Performance Measurement" *Harvard Business Review*, Volume 81, Number 11, pp. 88-95.

Jennings, E., Beresford, A.K.C and Banomyong, R. (2000), "Emergency Relief Logistics: a disaster response model" *Occasional Paper*, Cardiff University.

Kaplan, R. & Norton, R. (2005) "The Balanced Scorecard: Measures that Drive Performance" *Harvard Business Review*, Volume 83, Issue 7/8, pp. 172-180.

Lacity, M.C. & Willcocks, L.C. (1998) "An Empirical Investigation of Information of Information Technology Sourcing Practices: Lessons from Experience" *MIS Quarterly*, September, Volume 22, Issue 3, pp. 363-408.

Lee, J. & Kim, Y.G. (1999) "Effect of Partnership Quality on IT Outsourcing Success: Conceptual Framework and Empirical Validation" *Journal of Management Information Systems*,

Volume 15, Issue 4, pp. 29-61.

Long, D.C. & Wood D.F. (1995) "The Logistics of Famine Relief" *Journal of Business Logistics*, Volume 16, pp. 213-233.

Magretta, J. (2002) "Why Business Models Matter" *Harvard Business Review*, May, pp. 86-92.

Mitchell, P. (2002) "Integrating Strategic Sourcing and Supply Management" *Supply Chain Management Review*, September/October, pp. 15-16.

Norreklit, H. (2000) "The Balance on the Balanced Scorecard – a critical analysis of some of its assumptions" *Management Accounting Research*, Volume 11, Number 1, pp. 65-88.

Oloruntoba, R. & Grey, R. (2002) *Humanitarian Aid Organisations and Logistics*, Institute of Marine Studies Plymouth in association with the Institute of Logistics and Transport.

PA Consulting (2004) "2002 IT Outsourcing Survey" *PA Consulting Group*.

Pettit, S.J & Beresford, A.K.C. (2005) "Emergency Relief Logistics: an evaluation of military, non-military and composite response models" *International Journal of Logistics: Research and Applications*, Volume 8, Number 4, pp. 313-331.

Phelan, S. & Hayes, M. (2003) "After the Deluge" *Journal of Accountancy*, April, pp. 57-63.

Quelin, B. & Duhamel, F. (2003) "Bringing Together Strategic Outsourcing and Corporate Strategy: Outsourcing Motives and Risks" *European Management Journal*, October, Volume 21, Issue 5, pp. 647-662.

Ryle, G. (2005) "Red Cross Tsunami Cocktails Turn Sour" *The Sydney Morning Herald*, 4 August.

Sabath, R.E. & Fontanella, J. (2002) "The Unfulfilled Promise of Supply Chain Collaboration" *Supply Chain Management Review*, July/August, pp. 24-29.

Schmitz, J. & Platts, K.W. (2003) "Roles of Supplier Performance Measurement: Indication from a study in the Automotive Industry" *Management Decision*, Volume 48, Issue 8, pp. 711-721.

Sphere Project (2006) "Sphere, 'benchmarking' ...and 'clusters'" *The Sphere Project: Humanitarian charter and Minimum Standards in Disaster Response*. Website: www.sphereproject.org, accessed 20/6/2006.

Sullivan, W.E. & Ngewenyama, O.K. (2005) "How are Public Service Organisations Managing I.S. Outsourcing Tasks? An Analysis of Outsourcing Guidelines from Three Jurisdictions" *Journal of Computer Information Systems*, Spring, pp. 73-87.

Swan, K.S. & Allred, B.B. (2003) "A Product and Process Model of the Technology-Sourcing Decision" *Journal of Product Innovation Management*, Volume 20, Issue 6, pp. 485-496.

United Nations (2004) "Strengthening the co-ordination of emergency humanitarian assistance of the United Nations" *General Assembly Economic and Social Council*, New York.

United Nations Joint Logistics Council (UNJLC) (2006) Website: www.unjlc.org, accessed 20/05/06.

Useem, J. (2003) "One Nation under Wal-Mart" *Fortune*, March 3, pp. 47-56.

Waugh, D (2002), *Geography, An Integrated Approach*, Thomas Nelson, Cheltenham.

Willcocks, L.P. & Lacity, M.C. (1999) "IT Outsourcing in Insurance Services: Risks, Creative contracting and Business Advantage" *Information Systems Journal*, Volume 9, Issue 3, pp. 163-180.

Young, A. & Scholl, R. (2000) "Users' Views on Business Process Outsourcing: Drivers, Obstacles and Vendor Selection" *Gartner Group White Paper*.