

## Chapter 27

# Mapping and Data Base Modeling for Public Sector Strategic Enterprise Resource Planning

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### ABSTRACT

*This Enterprise Resource Planning database model provides a systematic, logical and regular basis for the collection, collation, dissemination and mapping of strategic Enterprise Resource Planning data. Selective access to this accurate and timely data will improve public sector strategic Enterprise Resource Planning performance, accountability and administration. It will assist the public sector to be more effective and efficient in resource allocation and investment outcomes measurement, is transparent, and will encourage the development of trust, networks and social capital amongst public sector employees and their suppliers. The model has been successfully demonstrated through the establishment and analysis of an Enterprise Resource Planning data base with the Australian Department of Defence (ADoD). The Australian ADoD is a Federal Government Department with a FY 2008/9 spend of AU\$9.3bn on products (goods and services), their support and maintenance, from almost every industry sector, on a global basis. While the implementation of Enterprise Resource Planning is usually viewed as a means of reducing transaction costs, in practice such implementation often increases transaction costs. Public sector bureaucratic hierarchies and their governance systems contribute to transaction costs. This research provides an Enterprise Resource Planning database model so that the public sector can achieve improved field mapping and strategic Enterprise Resource Planning using existing data and resources at lowest transaction cost.*

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## INTRODUCTION

Enterprise Resource Planning (ERP) systems are computer based technologies that integrate data across an organization and impose standardized procedures on the data's input use and dissemination (Grant, Hall, Wailes & Wright, 2006). Because of this capacity for integration and standardization, ERP systems are supposed to transform the nature, structure and management of work, thereby delivering significant cost savings regardless of the organizational context or structure (Davenport, 1998; Buckhout, 1999; Laughlin 1999; Trunick, 1999). Grant et al (2006) examined the extent to which a technologically determinist concept advanced by consultants and vendors held true with respect to three case studies – one embraced ERP, one adopted ERP on its own terms, and one rejected it. In the first case, ERP delivered some benefits where there was a good fit between the software and existing practices and processes, but where these had to be changed there was considerable resistance from staff and it was difficult to realise the promised benefits. In the second case, management needed the software to be customised to fit existing practices and turned off some of the functionality, with the outcome being that the ERP was no better than the legacy systems it replaced. In the third case, the perceived inability of the ERP software to suit critical business needs and to build an in house system led to rejection. It was also found that the social construction of particular discourse and the negotiation of meaning was an ongoing recursive process (Grant & Hardy, 2004), with each of the cases highlighting the importance of the social context in shaping the process of technology adoption. Grant et al (2006) found that much of the rhetoric surrounding ERP was technologically deterministic and that ERP customization to suit a client should be avoided because of the cost, and the need for the organization still to fit with the ERP requirements.

## BACKGROUND

### Literature Review

There is much organizational information associated with the Enterprise Resource Planning function. Each year, Enterprise Resource Planning represents around 50% to 60% of public sector spend. Thus the innovative conversion of Enterprise Resource Planning data to intellectual capital using electronic technology is invaluable for the management of public sector's Enterprise Resource Planning and strategic sourcing activities. For the public sector to use its existing Enterprise Resource Planning information to create knowledge of value, it needs to access with ease and minimum transaction cost, an Enterprise Resource Planning data base. Enterprise Resource Planning data useful for knowledge management is often spread throughout different public sector functions such as accounting, project management and supply logistics. Wittman & Cullen (2000) predicted that such content may become a key value driver. It is a 'core' business of public sector. Because of the ability of e-technology to collect, correlate, track and aggregate e-transactions quickly and easily, this content has the potential to become a valuable source of strategic and operational knowledge. Enterprise Resource Planning enables such masses of information, previously dispersed and fragmented, difficult and expensive to bring together manually in a timely way, to now be brought together and interrogated in seconds. This contributes to improved efficiency and effectiveness, and to a lowering of transactions costs.

Reducing the transaction costs of the public sector involves multi-stakeholder engagement; broader forms of accountability, risk sharing and responsibility; and 'the inevitability of transparency networks forcing organizations to adopt new systems of governance' (Williams, 2000, p90). These transparency drivers include

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