Doing Business With The Virtual State, Factors Affecting Enacted eMarketplace Systems In The Public Sector

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Abstract

Governments at all levels are implementing electronic procurement systems, and in particular sponsoring eMarketplace systems. The selection and implementation of eMarketplace systems is complex within the private sector. The procurement environment of the public sector is constrained a range of factors which are additional to those found in standard business transactions, greatly increasing this complexity. This paper presents an analysis of some of those factors affecting the enacted technology of eMarketplace systems within Fountain’s framework for technology enactment in the virtual state. It draws on a vignette (small case study) to illustrate how the choice of objective information technology is moderated and constrained by the institutional arrangements, both socio political and legal which affect procurement by governments. The Fountain framework is seen to be both robust and extensible, providing further evidence of its applicability in this area.

Keywords

Virtual State, eBusiness, eGovernment, usability, enacted technology, innovation

Introduction:

While the Internet has been around for much longer, the World Wide Web was conceived by Tim Berners-Lee in 1992, and commercial access was not promulgated until late in 1994. Some of the first tentative commercial ventures were launched at the second World Wide Web conference in Chicago in October of that year. The eField (eBusiness, eCommerce, eMarkets, eGovernment and eEtcetera) is in its infancy, essentially less than ten years old and as such suffers from a range of problems which are common among emerging disciplines. Among the most important of these is the lack of an accepted framework for the investigation of phenomena, and a common definition of terms within that framework. In the first part of this paper, we therefore define a range of key constructs which we use consistently throughout or discussions. While we may appear to labour over the definition of terms which appear to be in general use, this done in order to achieve ontological clarity, that is ontological completeness, without construct overload, redundancy, or excess. (Weber, 1997) points out clearly that in general use we tend to map more than one ontological construct on
to a single grammatical construct. Certainly the literature in the “eField” is replete with examples. The range of what constitutes eBusiness is a classic example.

In the second part of the paper we introduce the “Fountain” framework for the implementation of enacted technology [eMarketplace systems] in the Virtual State (Fountain, 2001).

Part 3 of the paper demonstrates the importance of public sector procurement and analyses the effects of organisational forms and institutional arrangements on the enactment of technology, that is the perception, design and implementation and use of the system, within the Fountain framework, proposing an extension of the Framework which is essential if it is to be used to evaluate the implementation of Information systems, rather than merely the underlying technology.

In part 4, we discuss the ramifications of our analysis, draw some conclusions and propose further research.

Defining the market.

The Macquarie dictionary defines “marketplace”, and “market” respectively as:

marketplace
… noun 1. a place, especially an open space in a town, where a market is held. 2. the world of business, especially regarded as a place where monetary value is established.

market
… noun 1. a meeting of people for selling and buying. 2. the assemblage of people at such a meeting. 3. an open space or a covered building where such meetings are held, especially for the sale of food, etc. 4. a store for the sale of food. 5. trade or traffic, especially as regards a particular commodity. 6. a body of persons carrying on extensive transactions in a specified commodity: the cotton market. 7. the field of trade or business; the best shoes on the market. 8. demand for a commodity: an unprecedented market for leather. 9. a region where anything is or may be sold; the foreign market. 10. current price or value: a rising market. --verb (i) 11. to deal (buy or sell) in a market. --verb (t) 12. to carry or send to market for disposal. 13. to dispose of in a market; sell. (Delbridge, Bernard, Blair, Ramson, & Butler, 1981)

On closer examination, these dictionary definitions of “market” pose a serious problem when trying to evaluate eMarkets and eMarketplaces: the virtual variant of “market” may be even wider than that presented here for its physical equivalent. What we are faced with is “construct overload” as described in relation to the relational model, “where a single grammatical construct can stand for two or more ontological constructs” (Weber, 1997). In other words, there is a single grammatical construct, the word “market” which may be mapped on to a variety of “things” or “behaviours” in the real world.

So what is meant by “market” and “marketplace in the terms of this study? The definitions used are:

Marketplace : (from the MacQuarrie Dictionary – Definition #2.) the world of business, especially regarded as a place where monetary value is established

Market: “not any particular marketplace in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of the same goods tend to equality easily and quickly” Cournot, quoted in (Marshall, 1920)

The rationale for this choice follows:
The need for a “market” and “marketplace” as a defined “place” is anchored in antiquity, as evidenced by the following discourse in between Plato and Adeimantus in Book 2 of the “The Republic”: (Plato & Lee, 360BC).

Then, again, within the city, how will they exchange their productions? …

Clearly they will buy and sell.

Then they will need a market-place, and a money-token for purposes of exchange.

Certainly. Suppose now that a husbandman, or an artisan, brings some production to market, and he comes at a time when there is no one to exchange with him, --is he to leave his calling and sit idle in the market-place?

Not at all; he will find people there who, seeing the want, undertake the office of salesmen. In well-ordered States they are commonly those who are the weakest in bodily strength, and therefore of little use for any other purpose; their duty is to be in the market, and to give money in exchange for goods to those who desire to sell and to take money from those who desire to buy.

Prima facie, the act of buying and selling looks like a simple transaction, and indeed in practice it often is. In this ancient wisdom we find the three possible players in any market, the seller (producer), the buyer (consumer) and an (albeit the unflattering description) intermediary. These roles continue to form the basis of the supply chain in modern times. However, Aristotle does not mention the most difficult part of the transaction, which is setting the price at which goods are purchased from artisans and husbandman and the price at which goods and services are sold within the market. The price struck affects the relative wealth of all of the participants.

There is no doubt that value in exchange of a good or service emerges, measured by Aristotle’s “money-token for purposes of exchange” it’s price. The key aspect of a marketplace is the mechanism by which it facilitates the setting of the price. How is this done?

Many great minds have turned their efforts to this philosophical question. Thomas Aquinas’ “just price” doctrine “visualised a fair price as one which would return to the producer a of the good an adequate reward for the labour involved in its production, the test of adequacy being the maintenance of the producer in the accustomed standard of living of his particular social group” (Whittaker, 1960) Whilst this philosophy reflects a society in which stability is a high priority, it certainly does not reflect the reality of the world since the Industrial Revolution, nor even does it reflect the amount of the price which should accrue to the intermediary. Today’s environment sees each individual motivated to increase their standard of living, rather than maintain the status quo, and goods and services are generally priced accordingly. An extreme example of this is illustrated in the case of Microsoft. Bill Gates’ rise from a garage in California to arguably the world’s richest man within 20 years has been the subject of much analysis. Does Microsoft price its products fairly?

Across the centuries many economists grappled with the concepts of value. The most influential of these on our modern understanding of economics is Marshall (1842-1924). In Book 5 of his Principles of Economics “General Relations of Demand, Supply and Value”, (Marshall, 1920) he expounds on the tendency of markets to establish a value for goods or services by a tendency towards equilibrium between supply and demand. Importantly, he also demonstrates that value is not static, but dynamic, changing overtime due to a variety of factors. For explanatory purposes he uses three time periods. The first period so short that production may not take place within it (Chapter2). Allowing for storage, and withdrawing from storage, and for the perishability of product, the price for the good in this period is that at which an existing supplier can find buyers. The second period (Chapter 3),
which he refers to as the “normal”, is a period “long enough for production to take place with
the aid of existing skill, equipment and organisation, but insufficiently long for the supply of
these facilities to be altered”. In the third period for all of the factors of production may be
changed, with the exception of the land. The essence of the law of supply and demand is that
competition between producers of product or services for the supply of goods and
competition between purchasers of those products or services will lead to and equilibrium or
market price.

However, as (Schumpeter, 1954) noted:

The mechanism of pure competition is supposed to function through everybody’s wish to maximise
his net advantage (satisfaction or monetary gain) by means of attempts at optimal adaptation of the
quantities to be bought and sold. But exclude ‘strategy’ as much as you please, there still remains
the fact that this adaptation will produce results that differ according to the range of knowledge,
promptness of decision, and ‘rationality of actors’, and also according to the expectations they
entertain about the future course of prices, not to mention the further fact that that their action is
subject to additional restrictions that proceed from the from the situations they have created for
themselves by their past decisions.

It could be argued that first definition of “marketplace” may be appropriate for its virtual
variant, the eMarketplace, where the “town” is analogous to Case’s “bodiless exultation of
Cyberspace” first described in Neuromancer (Gibson, 1984). However, the alternative
definition is more appropriate. In expanding the concept of the marketplace beyond physical
constraints, an eMarketplace in this context is best described as “the cyberspace of business,
especially regarded as a place where monetary value is established.” It is important to note
that in examining eMarketplace systems, we may not concentrate simply upon the objective
technology represented by hardware, software and communications, but must also introduce
the factors that Schumpeter refers to above.

One other important issue to address is to draw the distinction between information
technology and the information system. Information Technology (IT) is the hardware,
software and communication technology upon which our systems are based. Information
systems (IS) include IT and the procedures and processes (often involving people) which
deliver the outcome.

**Prof. Fountain’s framework**

As Professor Fountain says in the preface to ‘Building the Virtual State’ “the analytical
framework developed in this book, technology enactment, is meant to extend institutional
perspectives to account explicitly for the importance of information technology in
organizational life”(Fountain, 2001). This framework has been developed on a sound
theoretical heritage, Weberian bureaucracy, institutional theory, neo-institutional and network
theory. Our interests, however, extend beyond the implementation of IT, into the effects of
the IS on the institution. While the framework clearly enunciates the role of both IT and the
human perspective as input into the organisational forms, we propose that the choice between
available Objective Business Methods (OBM) is at least as important choice of available
Information Technology in its effect on the enacted information system. What is more, the
framework proves to be robust and extensible in that the factors constraining the choice
Objective IT are demonstrably working in the selection of OBM. Our extended framework
appears as figure 1.
The Western Australian “Government Electronic Marketplace”

An example of eMarketplace development has been selected to illustrate the range of government motivations behind developing electronic marketplaces in Western Australia. We present it as a vignette (Barter & Renold, 1999) to examine the influence of institutional arrangements, processed through organisational forms on the selection of Objective Information Technology and Objective Business Methods. Vignettes can take a number of forms. In this paper we use it as concrete example which allows the situational context to be explored and influential issues to be identified (Finch, 1987). The information has been obtained from several sources including official documents and published material (including official web sites), individual and group discussions with line agencies, central agencies and suppliers, email correspondence, and attendance at meetings with the e-marketplace sponsors.
and developers. The accounts below rely heavily on the published scope, aims, objectives of the projects and in this respect are those being put forward to suppliers, participants of the e-marketplaces and the general public.

**Government Electronic Marketplace (GEM)**

The Western Australian Government in the year 2000/2001 reported expenditure on Goods and Services, construction and building related services of more that $A5.1 billion (State Supply Commission, 2002) and transaction costs for simple purchases are reported at an average of $100 (DoIT, 2001)

Early in 2000 the West Australian government agency responsible for management of government purchasing, the Department of Contract and Management Services (CAMS), embarked on the development of major project known as the Government Electronic Marketplace (GEM) (DoIT, 2003). On the 1st July 2001, as a result of Ministry of government changes the responsibility for the project moved to the replacement for CAMS, the Department of Industry and Technology (DoIT). Further changes to the machinery of government have seen the project moved to Treasury & the Office of the Premier in late 2002.

At the Gem website (DoIT, 2003) the system is self-described in the following manner

GEM is Australia's first comprehensive online government buying service. It provides a range of services which cover the range of government buying:

- Purchasing of low value commodities
- Public tendering for high value goods and services
- Contract planning, formation and ongoing management (coming soon)

GEM aims to streamline traditional business partnerships between the public and private sectors and significantly enhance the quality, timeliness and cost-effectiveness of services to the community.

The published objectives and benefits of the system listed on the DoIT web site(DoIT, 2002) are:

- Saving taxpayers money through the introduction of more efficient procurement practices.
- Increasing the accountability and transparency of government purchasing
- Increasing the levels of compliance with State Supply Commission procurement and purchasing policy (including buy local and common usage contract policies)
- Demonstrating leadership in the implementation of the Australian Procurement and Construction Council (APCC) guidelines and standards for electronic procurement
- Assisting West Australian industry enter the world of e-commerce in a safe and secure government environment

According to the GEM Web site:
"Gem gives suppliers access to an enormous market of buyers - initially in government, but ultimately including private schools and hospitals, public benevolent institutions, and third party purchasers such as facilities managers who are looking after government buildings.

Suppliers can rest assured that GEM supports the government’s stringent purchasing policies, such as the Buy Local Policy." (http://www.gem.com.au)

The support for “local purchasing” delivered by the system goes much further than the official “buy local” policy contained.

Discussion

In this commentary, we can see the varied interplay described in the Fountain model. One view of electronic marketplaces which focuses on the relationships and communication infrastructure of groups of organizations which are bound together in some way is the network view. Fountain describes networks as one of the organisational forms which through which Institutional arrangements are filtered to produce the enacted technology. (Oliver, 1990) postulates six generalisable determinants of inter-organisational relationships which have relevance for e-marketplace participants:

- **Necessity** - to fulfil legal or regulatory requirements
- **Asymmetry** - potential to exert power over other organisations
- **Reciprocity** - desire to cooperate, collaborate and coordinate
- **Efficiency** - internally focused efficiencies
- **Stability** - in response to environmental uncertainty
- **Legitimacy** - related to reputation, image, prestige, or congruence with prevailing norms in the environment

We can see that these map easily across to the technology enactment model, and examples are clearly demonstrated in the details contained within the vignette.

In “Gem” we find a system which is designed to meet legal requirements, such as the mandatory public tender requirements. It is also an exercise in consolidating the effect of the public purse in a relatively small market for goods and services, arguably an effort to bolster asymmetry in the market in favour of government purchasing power. Reciprocity and stability is demonstrated by the goal of “Assisting WA industry to enter the world of e-commerce in a safe and secure government environment” and efficiency is highlighted throughout”. Interestingly, much of material listed under “Gem News” could easily be interpreted as “spin”, designed to promote the legitimacy of this massive public sector IT innovation in an increasingly “outsourced” world.

The process of selection of Objective Information Technologies is described in a press release “Local Focus Evolves into Global vision for GEM” and has clearly been processed through the organisational forms. “How has DoIT done it? By putting its money where the government’s mouth is –shopping locally to secure the best in the industry”. The emphasis on local procurement has constrained the choice of available technology.

But what of Objective Business Methods? The use of eMarketplaces in the private sector has enabled changes in the method of achieving price. The use of open auctions and reverse auctions has enabled considerable savings to purchasers, while allowing access to all...
potential suppliers, not merely those lucky enough to be invited to quote on a request for quotation, the selected method for GEM purchases of less than $10,000. The choice available to governments in the method of purchase is very wide. For a detailed discussion of this, it is hard to beat Martin Husz’ Appendix B: Auctions as Procurement Mechanisms, an Appendix to (Edquist & Hommen, 1998). Certainly the institutional arrangements in place have constrained the choice of business methods to those which were in practice before the implementation of the new (and innovative?) information system. The method used for high value items is a closed bid Tender, for smaller items, a request for quotation (RFQ).

The process of accounting for and the subsequent audit of any business transaction initiative may appear to be merely a matter of recording and checking. In fact, systems must be designed and implemented in a manner which ensures that information about business events is captured in a manner which is both effective and efficient, and which meets the needs of all relevant stakeholders, including auditors. Auditors are required to report on both the outputs and outcomes resulting from systems and to verify the integrity of the processes which ensure that those outcomes are achieved.

The procurement system is a key part of one of the major accounting cycles, the purchasing/payment cycle. The business events associated with this cycle include the approval of expenditure (and cost allocation), the contract to purchase, the receipt of goods and services, receipt of invoice (or other request to pay), and disbursement of cash. The choice between various objective business procedures may impact upon the ability of accounting to provide information for decision making. For example, a choice must be made in this process for the point at which expenditure is recognised. In the WA public sector, traditionally (until 1998), expenditure was recognised at the point of cash disbursement (when the invoice was paid), the CASH basis of accounting. Since 1998, agencies have been required to recognise expenditure on receipt of the invoice from supplier, the ACCRUAL basis of accounting. Financial reports are required to be produced on an accrual basis under Australian Accounting Standard AAS29, Financial Reporting by Government Departments. (Australian Accounting Research Foundation [AARF] & Public Sector Accounting Standards Board [PSASB], 1998). To be truly effective for management control, however, expenditure should be recorded at the time of approval of expenditure to ensure that budgetary control may be exercised. This is the COMMITMENT basis of accounting. If costs are recorded on a commitment basis, decision makers should have complete information on both budget and actual expenditure on a continuous basis.

That these alternative recognition points are available is objective fact, in the same way as the availability of hardware, software and communication technologies is “objective” in the Fountain studies (Fountain, 2001). As in the choice of procurement methods, the choice between accounting methods is very important and may strongly influence the benefits which can be realised from any set of available information technology. In the case of GEM, there was much discussion about the point at which the procurement system should interface with the Financial Management Information system, arising from this choice between business methods. The results are yet to be fully realised.

Additionally, the accounting and auditing rules form a sub-segment of the regulatory environment for e-commerce which, while often overshadowed by the technical and legal aspects of the regulatory framework, is of critical importance to entities who participate in e-commerce.
Accounting is often perceived as a “post hoc” recording function by other aspects of the organisation. It is important, however, to consider the implications of accounting regulatory framework in the planning, design and implementation stages of information technology life cycle, particularly when transaction processing systems. It is uncommon, however, in practice to have a high level of accounting expertise allocated to such teams.

These examples clearly indicate that the Objective Business Methods are subject to the same, or at least very similar institutional constraints, processed through the same organisational forms as the Objective Information Technologies and indeed are just as important as IT in the production of the enacted technology.

**Conclusion**

The implementation of systems within government is subject to a range of institutional constraints not present within the private sector. Prof. Fountain has presented a framework which our investigations have found to be robust, in that the evidence relating to applicable constructs that we have collected may be classified and analysed within the framework, leading to a greater understanding of the phenomenon under consideration. It has also proven to be extensible, in that we demonstrate that the framework may be extended to include a new construct, that of “Objective Business Methods” without deleterious effect on the structure or integrity of the model.

Given this result, we would recommend the use of the Fountain framework for technology enactment for researchers in this area. We expect to examine several other major public sector initiatives on this basis and welcome collaborative proposals from both the academic and public sector communities.
References


