Outsourcing for Competitive Advantage

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ABSTRACT

The construction industry and in particular professional design organisations have been slow to respond to the benefits of operating in an Information Technology (IT) environment. There has been a tendency to follow what is being applied in other areas of commerce. Initial uses of computers in construction largely concerned office procedures with the use of word processing and spreadsheet software developed elsewhere for generic functions. Computer aided drafting and the potentials of graphics offered an opportunity for building professional and industry organisations to take a unique approach to managing IT needs but little was done to re-assess the ways in which design and construction information is organised or used. Some of the reasons for this are due to the traditional remoteness of design and construction professionals from computer professionals.

This paper suggests that if the construction industry and professionals continue to follow trends in commerce, then outsourcing will become an integral part of the industry's relation to IT. Outsourcing has been defined as "a situation where an organisation for whatever reasons, contracts out responsibility for running part of its business to another organisation". It is currently estimated that 35% of Fortune 500 companies outsource at least one of their data centres and 15% outsource their networks. This paper explores the potential benefits of outsourcing and discusses the opportunities outsourcing provides for the construction industry and professions. It describes the relationships between client organisations and an outsourcing organisation and discusses operational issues, and issues of costs, resources and outputs.

Key Words

Outsourcing, information technology, construction, building design, organisation, management

Outsourcing - A World-wide Trend

Outsourcing is a world-wide trend, which is a substantial and growing part of the information technology environment. Outsourcing, according to Tony Tyrrell, manager of business development for the Comtex Group, is "a situation where an organisation for whatever reasons, contracts out responsibility for running part of its business to another organisation". While outsourcing has been available for years, the last five years have seen significant growth and the trend seems to be continuing and increasing. Most of

the literature published to date relates to overseas companies. Very little research has been done in New Zealand. However, it is estimated that expenditure on outsourcing in New Zealand will grow from a current $900 million (or 33%) of a total IT expenditure of $2.7 billion, to $1.5 billion (or 40%) of a total of $3.8 billion in 1996.

According to Quinn, Doorley and Paquette (1990), management should ask if they have the best capabilities internally for providing a service. If they have, they should consider making it a part of their core strategy. If not, they should look at opportunities for outsourcing the activity or forming a strategic alliance. This presupposes that an organisation has analysed its strengths and weaknesses and identified where its strategic focus should be. If a superior outsourcing product/service can be developed for an activity which is not "mission critical", then businesses should buy it. Equally, the strategic value of an organisation's computer applications or technology systems will have a bearing on the extent to which they may wish to outsource their information technology services. An organisation may be prepared to have only limited facilities provided by an external provider. An example of a customer's retention of services is that of Eastman Kodak, who outsourced the facilities management of their mainframe, PC and network installations, while retaining internal control of their applications development.

This paper notes that the building design professions and the construction industry already outsource many of their activities. It suggests that the trend towards outsourcing information technology expertise, already apparent more widely in commerce, will begin to impact more significantly in building design and construction. The benefits of outsourcing IT expertise are outlined and the issues raised by such commitments discussed. The principles and process of determining need and preparing for outsourcing are proposed and examples given.

Bureaus, Consultants and In-house Expertise

Traditionally, the building design professions and the construction industry have been slow to embrace information technology, usually following on the coat-tails of developments in other arenas. Yet computers are now ubiquitous. Computers are used primarily to enhance the information we use for decision making and to help communicate both the information and the decisions more effectively. Design applications are still not well developed or used though that is changing. Nevertheless, in terms of computer aided draughting, the provision of other production documentation, and the use of monitoring and accounting packages, computers are now everywhere.

It is only in the last ten years that this has become so due to the development of the personal computer and generic operating systems and software. Ten years ago there were only a small number of construction associated firms beginning to commit themselves to using computer technology. In those days mini-computers were the most powerful machines most firms could afford to hold inhouse (with all 256K of memory). Software for all but the most general applications was hard to come by and computer aided draughting was in its infancy. Most firms had two choices if they wanted to 'get into' computing. The first was to take their work to a timeshare bureau and the second was to take the plunge, buy hardware and what software they could and develop their own inhouse expertise.

The reasons for taking the former route were because a bureau already possessed powerful mainframe computers, appropriate input and output devices, 'off the peg' software packages and provided a 'black box' service. The only contact the user had with the computer was to provide input in an appropriate form and interpret or check and deliver output when received. Typical applications were payroll and banking systems. They were largely high volume "transaction" based applications. Of course, this very remoteness provided a downside to this way of working. The client lost control over the operation. Resource management and priorities were set by the bureau, not by the client. The competing needs of a variety of bureau customers could delay the expected service. In addition, often the standard 'off the peg' programmes did not offer just the right kind of response required and there was little opportunity for customisation. Costs were usually on a "per transaction" basis, and an abortive run cost as much as a successful one. Therefore, while capital costs were minimised the operating costs were not cheap.

For users, the latter route, developing inhouse services, was expensive in capital terms. It was also expensively time consuming. To use, develop or adapt programmes was not a trivial pursuit. It required training, practice and above all an enthusiasm and genuine interest in computers and their potential application. The length of the learning curve varied but for many firms with inhouse facilities they became a showcase for potential clients rather than an economical aid to productivity. There were few consultants available to advise on matters specifically to do with the needs of building design and construction. While some firms who had developed inhouse expertise offered their assistance to other beginning users, this was more usually through the forum of computer users clubs and associations than as a consultancy service offered on a professional basis. For those developing inhouse services the major information source about hardware and software was the vendors. While vendors can be altruistic, it is their business to sell their products. Also, they tend to expound more about what their products can do and how generally useful they are than to concern themselves with the actual and specific match between their product and the user's needs. Advice from vendors is necessarily limited and biased.

Today, while the technology has advanced and there are now many more generic software packages available for many uses in the building design and construction industry, practices still tend to follow traditional trends. There is less use of bureau services due to the enormous developments in personal computing, most firms continue to develop information technology facilities by customising standard products inhouse. Some larger firms operate inhouse information centres, or buy in expertise to manage the operation and development of the facilities and there are now many consultants who offer advisory and support services to firms on a professional full time basis. However many of these consultancies are geared to supporting the installation and operation of inhouse systems, offering help in setting up systems and choosing appropriate software and hardware. There are very few who offer outsourcing of IT activities for building design and construction.

Outsourcing

No single person is competent in all facets of building design and construction. Specialist expertise ranges from architects and engineers to quantity surveyors and contractors; from interior design and space planning to project management and facilities management. For most firms involved with design or construction the variety of expertise required is expanding. We have touched on the ways in which firms can respond to these challenges. They can look outside for help or develop inhouse expertise either by training existing staff or hiring new staff with the required expertise. Outsourcing is in many ways the best of both worlds and it is not an option unfamiliar to the building industry, except perhaps in the area of IT.

Becker (1990) suggests that "until recently many organisations in the building industry maintained their own catering, security, cleaning and maintenance staffs". He notes that "Inhouse staff were considered to be more loyal and also more effective" but "a desire to lower costs by cutting down on staff, increasing the existing staff's flexibility and, at the same time improving performance, has inspired many organisations to consider hiring contract staff for everything from cleaning and security to engineering, space planning and architectural services". He states that a fear of loss of control of contract staff has been countered by two approaches to determining contract procedures. The first, the 'Ivy League' model, emphasises detailed contract documents and screening procedures rather than over detailed and formalised written performance assessments intended to make sure that certain levels are achieved. Extremely detailed contract procedures are employed to ensure that the contractors are fully qualified to provide the services for which they are bidding. If the criteria are met the job goes to the lowest bidder. For Becker, the benefits of this approach are:

- it is fair and competitive
- all tenders are submitted from the same base information
- it ensures all bidders are qualified and can offer the required service
- costs are the lowest possible for the given service
- it is clear and unequivocal about what has to be done to succeed

The second approach, the so-called 'State University' model, takes the form of detailed, formalised performance standards. The contractor's ability to meet those standards can then be tracked on a monthly or even weekly basis. The former approach has benefits to contractors in that contract periods can be longer (say 3 years) and more services can be bundled into single contracts. The latter is more explicit which can have advantages in defining the scope of work. Little research has been done on the advantages and disadvantages of contract work, and there is little doubt that each approach and variations between and beyond them have their attractions as well as their difficulties. However, outsourcing implies a partnership relationship closer and more integrated than a traditional contract service. On that basis, the 'Ivy League' model appears more responsive and appropriate, though clearly either model and their variations may be tailored to suit particular circumstances. While the move to contracting and outsourcing may be deemed by some as no more than a current fashion, it is an identifiably increasing trend. And there are real opportunities for that trend to impact beneficially on the way in which the building industry addresses its future information technology needs.

Opportunities of Outsourcing I.T.

The benefits of outsourcing fall into four main areas, namely the quality of service which can be demanded and provided, the financial benefits for the client, the access to expertise and technology which is not available in house, and finally the ability for an organisation to "stick to the knitting", and concentrate on doing what it does best, be it banking, or designing and building buildings.

Quality of service

The provision of a high quality of service is paramount to a successful outsourcing contract. Several authors (Barber, 1992; Clermont, 1991; Morgan and Gladyszewski, 1989; NCC, 1991; Simensky & Wasch, 1992) emphasise this. Research indicates that clients determine the quality of a service through a comparison of the service outcome to their expectations of the service. A service is perceived to be of high quality when it exceeds the customer's expectations of that service. Thus understanding of these expectations is essential. The successful provider of outsourced services will have a strong customer orientation. Datapro (1991) suggest that organisations should seek providers who use customer satisfaction surveys for this purpose. Such surveys can contribute to an understanding by the provider of the client user's perception of quality or the lack of it.

Secondly, accountability for the quality of service should be built into any contract. However, this may not be straightforward. The NCC (1991) note the need for accountability to be improved, while others see the difficulty of defining a service standard to be a disadvantage and a risk to the overall success of outsourcing. Whatever, this is an important issue in the client user's eyes. The Gartner Group developed a 2x2 matrix which plotted ten factors key to success in an outsourcing arrangement. They were rated on their cost to secure contractually and the importance assigned by users. The two factors deemed most important by users related to quality of service provided. The first is the need for a provider performance agreement to include measures of the quality of service, through measures such as response times. The second concerned agreements about the remedies for non performance by the provider or the user. In companies such as Comtex, service level agreements, defined performance standards, and formal conflict resolution mechanisms are standard features of outsourcing contracts. An external outsourcing provider can be made more accountable than a company's own IT department. If the IT department doesn't deliver, it can be difficult to deal with. If an outsourcer doesn't deliver, they know they are out of a job. Radding (1990) notes that there is always likely to be a trade off between cost & service in the relationship between an outsource provider and the user of the services. Ultimately, the customer (the user) must control the arrangement through the contract. If they are not able to do that, there are likely to be difficulties.

Financial benefits

While the financial benefits of outsourcing may not be clear, nor necessarily the prime motivator for choosing the mode of operation, outsourcing can make costs more predictable and easier to budget. Providers of outsourced services will charge a premium for accepting the customer's risk associated with IT, but will guarantee the required level

of service at a fixed price. Bone (1988), Kavanagh (1989), and Clermont (1991) note that outsourcing can ensure a guaranteed service at a guaranteed price, and can be planned to handle the peaks and troughs of operation in an economical fashion. Further, as with bureaus in an earlier era, the possession and access of the outsource provider to hardware and software can make huge financial differences to the user and provide relief from what according to Hammersmith (1989) could be significant inhouse debt servicing, releasing capital for other purposes. Barber (1992) quotes organisations who have made savings of up to 30%. Kavanagh (1989) suggests providers should be able to generate savings of 10-20% because of economies of scale. Mangan and Carlini (1991) reckons up to 25% savings are possible because of the provider of outsourced services ability to leverage greater discounts from vendors. Whereas Radding (1990) estimates savings at 10-30%, but questions their sustainability.

Others are reluctant to make such estimates and some organisations say they would never promote outsourcing on this basis. Deroon (1992) stresses the importance of the client user's house being in order before attempting to measure and evaluate outsourcing options. It is essential to take an objective look at outsourcing, and ensure that the costs are compared against the optimum which can be achieved internally. Sadly, for users, the systems are not always in place to appraise the opportunities fully. Typically, in most construction organisations internal cost structures are not well known and therefore it is difficult to predict or monitor actual savings. Further difficulties with costing occur when one tries to identify the possible extent of savings from the provider's advanced position on and ability to manage the technology curve (experience curve) or to assess the effects increases in a provider's client numbers may have on margins. So, the potential for savings from outsourcing are there but they should not be seen as a prime selling factor by vendors, or as prime reason for purchasing by clients. Nevertheless, it is essential to address the issues of value for money and to establish cost structures and a basis for determining the costs of quality before entering into a contract.

Technology

Outsourcing should provide opportunities for value added services and features from the vendor which the consumer can't provide for themselves. Kavanagh (1989) notes that through an outsourcing arrangement, the customer has access to and the backing of professional and technical expertise which they cannot supply themselves. Guimaraes and Wells (1992) advise organisations considering outsourcing to ensure that they can learn from the provider, and make sure that the contract allows for technology transfer between the provider and the client. User services such as disaster recovery planning (DRP), satellite access, dial backup, and the provider's additional expertise for trouble shooting, and day to day operational management can provide a competitive edge in the client user's business.

Ability to focus on the business strategy

Finally, a major feature of outsourcing information technology, is the ability for users to focus on the business they are in, rather than worry about the management of the technology. Bone (1988) notes that while outsourcing is not the answer to all IT issues, it enables the organisation (in this case in the banking industry) to focus on the business of banking and concentrate on determining effective strategies for the future.

Management can focus on the use of information rather than on the production of it, leading to a greater freedom to consider the business issues. Outsourcing enables the organisation to focus on the strategic benefits associated with the implementation of technological solutions (the why of the solution), rather than pondering on the operational aspects of an implementation (the how and what). Staff are relieved of daily activities, and management can focus on strategic issues. Morgan and Gladyszewski (1989) point out that action can be directed to work on profit generating business opportunities, rather than solving problems. This is a two way issue. Organisations which have considered and identified their core activities are more likely to outsource. On the other hand, outsourcing IT enables organisations to focus on their core business.

Selecting the Outsourcer

Hiring consultants is easy but hiring the right ones is less so. Finding the right provider of outsourced services is even more fraught as the relationship desired is one of a working partnership. There are many elaborate screening processes but only a few ask the right questions. While selecting the right service provider may rely on good fortune, there are some principles, espoused by Becker (1990), that apply:

- a clear vision, knowing what you are looking for helps
- valuing 'chemistry' as well as technical expertise
- workstyle, do they involve users? do they evaluate their work on other jobs? do they learn and change their methods over time?
- clients, do they retain clients? ask widely, not just key players? is both the process and product valued?
- understanding roles, do they see themselves as advisers or gurus or partners?
- ideas and innovation, do they operate on automatic pilot?
- alertness, do they add ideas you hadn't thought of, notice and discuss issues from their expertise?
- responsiveness? are they easy to work with, knowledgeable?
- commitment? who will work on the actual project? senior staff? how many?
- interdependence? do they understand your role?

In addition, while it is often possible to ascertain their industry standing by reputation, it is advisable to check out their performance with previous users first hand and to ascertain what quality assurance and levels of accredition, such as ISO 9000, they carry.

Develop partnership / manage the relationship

A downside to outsourcing, identified by many researchers (Hammersmith, 1989, Lowell, 1992, Kavanagh, 1989, Morgan & Gladyszewski, 1989) is a major fear for the user of loss of control, and the concern that the vendor will not have the necessary knowledge or sensitivity to the business issues involved.

It is therefore necessary to select a provider of outsourced services with care, ensuring that there is the appropriate fit between vendor and customer. You need first to know what your objectives are, to ensure that the objectives and offered services of the provider match. The vendor should have the appropriate experience and technical

competence, and demonstrate stability and the ability to establish a long term commitment to the user's success by knowing and understanding their business. Guimaraes & Wells (1992) consider it to be like a marriage. Often it involves a leap of faith and then having to live with the consequences. However, they recommend that a potential user of outsourced services gets detailed knowledge about the provider and their own IS operation. Kirkpatrick (1991) compares it to "keiretsu", the Japanese arrangement of mutually advantageous intertwining of companies.

It is then essential to manage the provider of the outsourced service. Outsourcing creates a critical set of dependencies between user and provider, and there are high barriers to exit for a user if the arrangement proves difficult. Therefore it is essential that the user work with the provider (and vice versa), to ensure the relationship is satisfactory. Radding (1990) recommends that the client user manage by setting the direction and managing the results. Successful management and control of the outsourcing agreement requires a good relationship between parties, so that both will benefit for mutual success. For the provider, in the marketplace, it is important to be clear about:

-   the service (and extra features) the customer wants
-   the quality of service (standards) that can be delivered
-   how quality of service will be measured; how you and your client will know if standards and expectations are being met
-   what will be done if standards and expectations are not met

Suggestions for managing the user/provider relationship include a joint management board which meets monthly, service level agreements, user groups, regular reviews, standards, formal conflict resolution mechanisms. Clermont (1991) sees the development of the partnership as the final step in putting together a successful outsourcing arrangement.

Need to outsource selectively

Finally, what should be outsourced must be determined. It is not necessarily an "all or nothing" activity. In fact, I/S analyser (1990) considers that outsourcing the whole IT department is probably a mistake, and that it should be a selective activity to ensure it is consistent with business strategy. Clermont (1991) discusses the need to carefully analyse the business before outsourcing, to ensure that strategic tasks are kept inhouse. It is necessary to first segment or break down the IT activities into pieces that can be outsourced. Then a business based analysis should be undertaken to ensure that the company is not stripped of critical expertise and know how. Outsourcing can be a good option when there are no distinguishing features and it is not a competitive activity. Once the activities for outsourcing have been determined, then the provider can be matched with the job, to ensure that ultimately there will be a strategic advantage.

Concluding Comment

The cost and the technology of an outsourcing arrangement are not as important as the quality of *service and performance*. Outsourcing is a partnership between user and provider, a relationship in which each partner gets on with doing what they know best.

At present, there is little use of outsourcing information technology within the building industry. In New Zealand, the majority of outsourcing contracts involve banks, insurance, and large government departments or corporations, or are in specialised areas such as payroll. These usually involve facilities management or bureaus arrangements on large mainframes. Nolan (1979) has four widely espoused stages of growth in information technology within an organisation. They are initiation, proliferation, control and maturity. Perhaps outsourcing can be considered as the fifth stage. Technologies other than mainframe processing, such as personal computing, networked applications and the management of the network itself, are newer technologies which are fast approaching controlled and mature stages in business. These are the growth areas for outsourcing. These wider opportunities for the outsourcing of information technology are now appropriate for the specialised computer applications of the building design professions and across the industry.

When a company has the technology under control, and is returning financial benefits, it is appropriate to consider the strategic nature of the application and the technology. As construction in New Zealand and elsewhere moves out of recession, it is time for the building professions and the industry to re-assess the way in which it addresses its IT needs. A simple maxim being applied elsewhere in the commercial world is relevant here: 'if it is not central to the organisation mission and essential expertise it should be outsourced' - Stick to the knitting!!

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