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Expanding IS Outsourcing Services Through Application Service Providers

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Abstract - This paper draws from an international research study on the strategic positioning of companies in the software and computing services industry (SCSI). It considers how outsourcing companies are extending their product and service offerings in vertical markets, and also considers a new outsourcing model in the form of Application Service Providers (ASPs). The paper concludes by demonstrating that the SCSI is becoming more complex and dynamic as partnerships between key players blur traditional business sector boundaries.

I. INTRODUCTION

The software and computing services industry (SCSI) has received little attention in the academic community. Most research studies have focused upon developing and implementing information systems within an organisational (internal) rather than a market (external) setting. Key topics have included, IS strategy and outsourcing practice, project management, planning and evaluation, implementing large-scale IS systems such as enterprise resource planning (ERP), and 'new panaceas' for management including; total quality management (TQM), business process re-engineering (BPR) and, more recently, and knowledge management [1].

This paper gives an overview of a research study currently underway in the US and Europe on the strategic positioning of companies in the SCSI. In particular, it focuses upon the emerging Application Service Provider (ASP) industry, which is a sub-set of the SCSI. According to the ASP Industry Consortium, 'An ASP manages and delivers application capabilities to multiple entities from data centers across a wide area network' (WAN). These companies are proliferating in the US and are expected to become more widespread across Europe in the coming years.

ASPs will partner with hardware vendors, independent software vendors (ISVs), internet service providers (ISPs), network and communications companies, web portals, value added resellers (VARs), systems integrators and other enabling technology providers. Coupled with this, ASPs are likely to generate increased merger and acquisition (M&A) activity, thus blurring the boundaries of the various sub-sectors of the SCSI.

The emerging role of ASPs is a reflection of the continuing growth in IS outsourcing, especially in vertical markets from financial services to health care. Responding to

this opportunity, ASPs and other companies are adding to their product and service offerings through M&As, joint ventures, strategic alliances and other partnering arrangements. Smaller, 'niche player' companies focusing on a specific vertical market are also emerging, especially in the e-commerce field [2].

This paper draws from preliminary findings from an interdisciplinary and international research study on the strategic positioning of companies in the SCSI. The paper extends previous research on strategies within the global IS outsourcing market (3). Six key themes are currently being investigated in the US (Silicon Valley) and Europe (UK, France and Germany). They include (i) the strategic positioning of companies in the SCSI, (ii) the maturing IS outsourcing marketplace, (iii) the emerging application service provider (ASP) industry as a sub-set of application outsourcing strategy and practice (i.e. partnering arrangements, deployment, customer benefits), (iv) key factors supporting the development of high-tech start-ups (i.e. institutional, educational, financial, capital, marketing), (v) cross-national and regional comparisons between high-tech companies (i.e. Silicon Valley and Europe), (vi) organizational forms (i.e. structure, technology and processes).

The paper is divided into three parts. First, it considers three forces driving change within the SCSI. These are globalisation, deregulation and consolidation. Second, it offers a framework for analysing how companies within the SCSI are positioning themselves. Third, it introduces the emerging role of ASPs. These companies will significantly change the provision of outsourced services, particularly with the development of web-enabled technologies. In conclusion, the paper suggests the SCSI is becoming increasingly complex and difficult to define as companies attempt to strengthen and consolidate their strategic position by capturing new business in vertical markets from financial services to health care.

II. GLOBALISATION, DEREGULATION AND CONSOLIDATION

Three major forces have been driving change in the SCSI. They are globalisation, deregulation and consolidation. These forces have generated the growth and demand for IS outsourcing, systems consulting and integration services.

Companies like IBM, EDS and CSC have extended their global reach by entering into a variety of strategic arrangements with other suppliers, largely for the purpose of serving their clients' growing demands for new product and service offerings.

There has been an increase in serving clients in vertical markets worldwide, ranging from aerospace and automotive to chemical oil and gas, financial services, utilities and, more recently, healthcare. These global suppliers now have a significant presence and scale in such markets by entering into joint ventures and through M&As [4]. This trend was set in place from the late 1980s [5]. To this effect, large IT service providers have been very instrumental in deciding upon their strategies for making inroads into vertical markets. An example is EDS's strategic positioning to gain leverage in the defence industry by securing large-scale defense contracts. Such a move enables EDS to develop core competencies in the defence industry to serve their clients and also to enable them to define and shape the future of the defence industry.

Over the last few years, companies in the SCSi have reacted to the M&As taking place in vertical markets such as private banking and telecommunications by positioning themselves to compete more effectively. Some strategies have been more successful than others. For example, IT staff agencies and those dealing in commodity items like hardware, third party software products, have not been too successful.

Conversely, companies with high quality earnings from long term customer relationships (outsourcers like Capita and FI Group or products companies like Sage with high recurring revenues) continue to thrive. UK owned companies like Misys, Sage, Logica, RM, London Bridge and many others have shown that they can compete internationally and lead the world in their chosen markets. The UK continues to lack a global company in the SCSi to rival US companies like EDS, IBM Global Services or the French owned Cap Gemini. In Europe, the SCSi grew on an average by 18 % in 1998 to approximately E107bn (Euro). The European market is forecast to be worth E173 bn in 2002 [6]. The UK and France had amongst the strongest growth in 1998, with Italy and Germany falling below average.

IS outsourcing has been a major factor behind the global increase in M&A activity. An effective M&A strategy involving outsourcing is called 'roll-ups'. When a company, which is acquiring numerous other companies, has an alliance with an outsourcing supplier, the acquiring company can focus on integrating the core businesses, while the supplier focuses on integrating the non-core pieces of the business. This allows the consolidating company to do more

acquisitions faster and still preserve its capital for integrating core businesses.

Deregulation in the financial services and energy industries is another driver of change in the SCSi. Many companies in these sectors have turned to IT service providers to help them tackle existing and potential competition in these markets. For example, private banks have outsourced a variety of activities to external IT service providers in the last decade. Two decades ago, private banks provided almost all of their products and services from in-house. Account administration, investment management and transaction processing were all handled internally. Now an increasing number of banks are outsourcing these activities. Deregulation in the energy industry has forced the outsourcing of, for example, applications development in the area of risk management.

Table I gives the top ten suppliers in the software and computing services industry, seven of which are US-based companies.

Electronic commerce is likely to generate additional service contracts for IT service providers. A recent study claimed the average cost of building an e-commerce Web site was over \$1mn (79% labour related costs, 10% software costs, and 11% hardware costs) [7]. Many IT service providers are therefore entering the e-business market to take advantage of this new business opportunity.

TABLE I
TOP TEN SUPPLIERS OF SOFTWARE AND COMPUTING SERVICES
TO UK MARKET IN 1998

1998 Rank	Company	1997 Rank	1998	Growth % 1997/8
1	EDS	1	1,270	27
2	IBM- UK SCS	2	1,100	38
3	ICL-UK SCS	3	750	21
4	CAP Gemini (UK)	6	596	54
5	Anderson Consulting UK	5	545	22
6	CSC UK	7	500	32
7	Microsoft UK	8	450	31
8	Oracle UK	9	440	31
9	Sema Group	4	419	-12
10	Compaq/Digital UK SCS	15	310	15
				26%#

Overall growth

Note: Excludes hardware, operating software and own hardware maintenance and associated support. Revenue relates to Financial Year ending in 1998 - not calendar Year 1998 [6].

Consolidations and M&As have further enabled these new entrants to gain access to markets and customers in ways not

possible prior to privatization and deregulation. For example, IBM recently announced that it would compete directly with Dell by offering an on-line (buy-direct) site. Strategic changes of this kind are important since they unveil the strategic positioning of IBM in a highly competitive marketplace.

As Table I shows, the top ten suppliers in the SCSI are very large companies competing for large-scale client contracts. In an outsourcing context, these companies offer fewer services to small and medium size firms (SMEs). This is because the IT facility of SMEs is relatively small compared with their larger counterparts. However, large ERP application companies such as SAP and J.D. Edwards are currently developing strategies to expand their product and service offerings to reach new markets. For example, SAP has developed MySap.com as a way of reaching the untapped midsize market. J.D. Edwards has done the same by setting up their ASP initiative called JDe.sourcing. Before discussing the ASP model in more detail, we will first consider how the SCSI has changed over the last thirty years.

III. A TYPOLOGY OF COMPANIES IN THE SOFTWARE AND COMPUTING SERVICES INDUSTRY

The IT services market has undergone many changes in the last thirty years. From 1970 to 1987 the market consisted of three distinct types of IT service provider. They were: hardware suppliers; systems houses supplying and developing software; and IT consultancies. From the late 1980s, many new entrants entered the outsourcing marketplace from the traditional IT service providers to other sources [8]. The reasons for this are varied.

First, legislation passed in the UK and US to contract-out *white collar* public services led to increased outsourcing as some in-house IT departments were transferred to an external vendor. For example, in the UK, central and local government was required by law to market test their public services through a process known as compulsory competitive tendering (CCT) [9]. This was seen as an opportunity by many IT service providers to reinvent themselves as specialists in offering strategic outsourcing services from IT consultancy through to applications management and development [10].

Second, economic recession and increased global competition has led many companies to seek cost cutting measures [11]. This, in turn, has led to increased outsourcing of IT and other business services (e.g. accountancy, HRM and marketing, etc). The IT service providers have responded by moving from offering *stand alone* services, such as mainframe, data centre and applications management to, more recently, IT consultancy (e.g. IT strategy formulation),

business process outsourcing, customer relationship management and systems integration.

Fig. 1. identifies six types of IS outsourcing service provider in relation to their strategic positioning in the software and computer services industry. They are IT consultancies/service providers; hardware suppliers; systems houses; generic outsourcers; niche player consultancies and niche player IT suppliers. The diagram further considers the relationship between market differentiation and client/supplier integration. Traditionally, the in-house IT department would serve its *internal* customers from the various business and administrative units. It would therefore be highly integrated with its customer base and may insource additional services (contract programmers) from the external (labour) market. In recent years, however, many internal IT departments have entered into outsourcing contracts with external suppliers. IT sourcing contracts are varied but generally fall into four distinct categories: total outsourcing; selective (multiple contract) sourcing; joint venture/strategic alliance sourcing; and insourcing (buying-in services) [12].

With the advent of increased outsourcing, the in-house IT department has become less integrated with its customer-base, especially since external IT service providers now undertake some of the work previously done by the in-house team. This poses both an opportunity and a threat to a company. It is an opportunity since outsourcing may have the benefits of improving services, reducing costs and gaining access to new capabilities and skills. Yet it is a threat where a company finds that it is not easy to manage several suppliers, as is the case in some selective (multiple contract) sourcing arrangements [13].

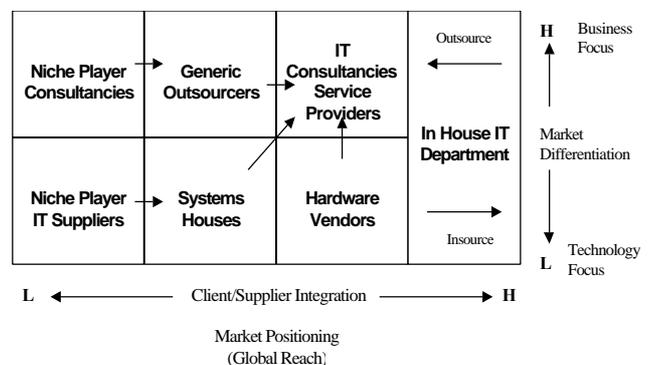


Fig. 1. Strategic positioning of companies in the software and computing services industry

Client/supplier integration is thus an important element in the outsourcing relationship, and there is a current trend which shows that many IT service providers are seeking longer term relationships with their customers, partly to

generate higher margins from outsourcing contracts. Increased client/supplier integration is also enabled by the IT service providers offering highly differentiated business services, and not just by selling technical systems. This is explained in more detail if we consider the six types of IS outsourcing suppliers defined in Fig. 1.

- (i) **IT Consultancies/Service Providers:** These companies are global and most diverse in terms of offering a wide array of vertically integrated outsourcing services. They have developed from international consultancies specializing in business and IT consultancy including project management, software development and systems support and maintenance. They moved into the outsourcing market in the late 1980s to take advantage of the then lucrative margins and long term nature of contracts. This international element has led to the import of mainly North American approaches to outsourcing and large vendors achieved sizeable contracts by leveraging their North American outsourcing track record, experience and skills. EDS, CSC, Anderson Consulting are examples. ISSC which is part of IBM is also an important player. Smaller companies are CapGemini and FI Group.
- (ii) **Hardware Vendors:** Traditional hardware manufacturers also moved into the market often through hardware maintenance outsourcing as hardware sales declined. In addition, software products have been increasingly commoditised, which has affected the PC hardware market. Revenue streams from selling PC hardware have fallen in recent years. This has led many companies to turn to services to support future growth. IBM, HP, DEC, Siemens, ICL, Unisys and AT&T all offer outsourcing services. IBM set up ISSC which now has many lucrative outsourcing contracts. IBM announced in October 1999 that it would compete with Dell through on-line selling, thus bypassing traditional retailers (intermediaries).
- (iii) **Systems Houses:** This is a dynamic and diverse group of companies offering a range of products and services. The larger companies such as SAP, Peoplesoft and J.D.Edwards have now extended their software products and services portfolio by offering consultancy. Many of the smaller systems companies focus on a specific market sector, e.g. software development for the financial services sector. Others are regionally based, and serve a particular local market.
- (iv) **Generic Outsourcers:** Traditional services providers of security, facilities management (FM) and other services have expanded their outsourcing portfolio by

offering desktop PC support and cabling services, etc. Synstar International offers a wide range of integrated services and solutions in the areas of computer services and business continuity services.

- (v) **Niche player consultancies:** These are usually small firms which offer consultancy in the softer areas of strategic or change management. This may include general consultancy on IS outsourcing, knowledge management, BPR and CRM etc. More specifically, it may contextualise the above within particular business sectors (finance and healthcare) or within the public sector (central and local government agencies). These companies may be relatively large, medium sized or simply *one-man-band* operators.
- (vi) **Niche player IT suppliers:** These small firms offer specialist technical services. A new area for consultancy is Web site development and other Internet/e-commerce related activities. These companies have been called 'infomediaries' and 'cybermediaries'. Other examples include software development, maintenance and support, and system implementation.

There have also been instances where former in-house IT departments become IS outsourcing companies offering their services to a range of clients. ITNet and Barclays Computer Operations are two examples. To some extent, in-house IT management may see outsourcing as an opportunity to initiate a management buy-out (MBO), especially if they are able to compete favourably with external IT service providers on price and quality.

As Fig. 1. suggests, hardware suppliers, systems houses and generic outsourcers are all making inroads into the IT consultancy/solutions providers quadrant. As well as the major companies in this area (EDS, CSC, etc), many medium and large size companies are also expanding their outsourcing portfolios. Reduced margins from traditional IS outsourcing contracts involving data centers and mainframes, for example, has led many suppliers to seek wider margins. This is achieved through the more lucrative IT consultancy and business process outsourcing. To meet their clients' requirements, the traditional hardware suppliers like IBM, HP, DEC, Siemens, ICL and Unisys have all widened their outsourcing portfolios, often through mergers, acquisitions, strategic alliances and joint ventures. Similarly, systems houses are now more likely to seek long-term business with their clients by offering additional outsourcing services. Fig. 2 relates software application diffusion with the maturity of the market. Whilst financial and manufacturing software applications are widespread, there is much scope for companies to enter the energy and leisure industries.

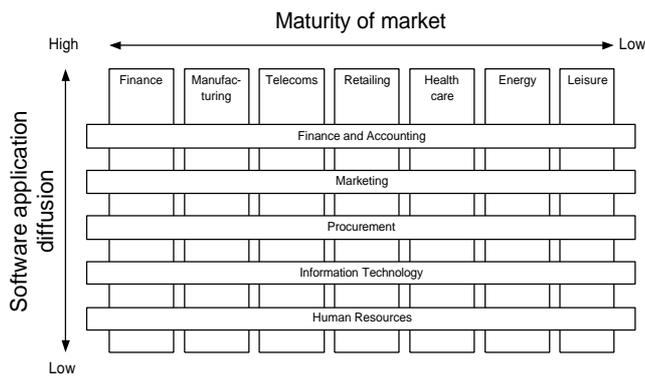


Fig. 2. Market maturity and software application diffusion

The generic outsourcing companies are also attempting to do the same. But systems houses and generic outsourcers are often inhibited by their limited size and service portfolios. It is unlikely that a bank would outsource important long-term systems development work to a 'one man band' consultancy, because of perceived lack of support and back-up. Yet outsourcing contracts with the large IT service providers have not always proved to be successful, in spite of large resources.

An understanding and analysis of the key players in the SCSi is essential, since the industry is witnessing significant shifts with an increase in M&A activity, strategic alliances and joint ventures. Previous research has highlighted the issue of strategic alliances between client and supplier [14, 15] but few studies analyse supplier strategies in detail.

With the increasing revenues of the major IT service providers as shown in Table II, it is likely that supplier 'cartels' in the IS outsourcing marketplace will emerge. Whilst vertical outsourcing markets like defence, aerospace and financial services are mature, pharmaceuticals, healthcare and food are not. Opportunities will therefore exist for major suppliers to make inroads into new markets, and this may only be achieved by developing partnerships.

The 1990s has been a decade of opportunity for companies in the SCSi. Part of this has been because of the upwards trend towards outsourcing [16]. In the late 1980s and early 1990s, senior executives sought ways to leverage outsourcing to control and shape IT costs in conjunction with changing business requirements. Cost savings were often at the root of many outsourcing deals. Conversely, many Chief Information

Rank	Company	UK Outsourcing Revenue (£ millions)
1	EDS	850
2	IBM	450
3	CSC	400
4	Cap Gemini	360
5	ICL	280
6	Sema	255
7	Anderson Consulting	180
8	Capita	160
9	FI Group	110
10 =	ITNet	105
10 =	Perot	105

Source: Holway, 1998 [6].

Officers (CIOs) and IT directors resisted outsourcing initiatives which they interpreted to be against their interests. Many IT service providers won their initial outsourcing contracts by positioning themselves as the lowest bidders. Their rivals were not only other external IT service providers but also large in-house IT departments.

Yet many of these IT departments found themselves outsourced, as external suppliers often won contracts by their effective marketing through presentations to senior executives, many of whom had little knowledge, understanding and experience of IT.

As more companies entered into outsourcing arrangements, they often found external suppliers offered additional value added services in the form of improved quality of service, more flexible and responsive design and implementation of IT infrastructures and systems, faster access to properly skilled technical staff, better alternative schemes for using technology to improve business functions, and far fewer difficulties in managing organisational and internal political issues.

The ongoing drive to re-engineer legacy systems (mainframe and data centers) to alternative architectures (client/server and distributed networks) tended to destabilize many in-house IT departments thus rendering them vulnerable to the threat of outsourcing [17]. Some CIOs and IT directors lost control of IT costs as a trend emerged in North America and, to a lesser extent in the UK, where senior management actively decentralized the responsibility for IT to managers and staff across the various business and administrative units [18]. But even this decision was not always effective in controlling costs, particularly where companies were attempting to invest in new technologies while at the same time supporting their legacy infrastructures. As a result, CIOs and IT directors in the mid-1990s onwards, increasingly turned to outsourcing as a *panacea* to manage the dilemma of maintaining existing

TABLE II
TOP TEN UK OUTSOURCERS IN 1998

systems and applications and introducing new ones at only a marginal increased cost.

Figures for the growth in outsourcing in five vertical markets over the period 1996-2001 estimate that \$94.2 bn show that \$94.2 bn worth of outsourcing contracts will be signed. This is broken down as manufacturing (\$44.4bn); utilities (\$17bn); state/local government (\$9.9 bn); insurance (\$12.3bn) and communications (10.6bn) [19]. Whilst cost control is no longer the paramount issue for outsourcing, risk and reward contracts often fall short of delivering a value-added component to the outsourcing relationship. However, a new value added proposition is now being offered to customers in the form of application outsourcing which we discuss in the following section.

IV. THE EMERGING APPLICATION SERVICE PROVIDERS INDUSTRY

As the global IS outsourcing market matures, companies in the SCSi are repositioning themselves to develop and enter new markets. The well established IT consultancies and service providers have entered into 'mega' outsourcing deals worth many \$millions. The large companies have developed strategic alliances and partnerships with other companies to provide customers with a seamless service. To some extent, this activity has reinforced the position of the major players and served as a barrier to entry to other, less well-resourced companies.

But now a new trend in outsourcing is emerging in the form of application outsourcing where ASPs will play a central part. Companies involved in the ASP industry include computer software and hardware companies, network service providers, Internet service providers (ISPs) and ASP companies. The major IT service providers are now positioning themselves to either establish an ASP arm or partner with other ASPs. The ASP market is expected to grow to \$2 bn by 2003 according to International Data Corporation. Forrester Research predicts the market to grow to \$6 bn by 2003, whilst Durlacher Research estimates the European Market to grow to \$1.5bn by 2004. The ASP model offers many opportunities for companies within the SCSi, but the key question is the extent to which it will be successful in practice.

Although there is some variation in the definitions of the core activities of ASPs, they share a number of key characteristics. In short, ASPs procure and implement complex systems for their customers. Some ASPs provide customers with a comprehensive alternative to building and managing internal information technology operations. As with traditional outsourcing practice, the customer may use an ASP because they seek to control their IT costs through

entering into a scheduled payment scheme agreed with an ASP. But unlike traditional outsourcing, the application service is managed at a central location and not at the customer site.

The core business of ASPs is to offer an applications centric service to customers. Over time it is likely that software will not be sold directly to customers as a *product*, but instead be licensed through an ASP, and thus become a *service*. The ASP will establish a one-to-many relationship with customers as opposed to a one-to-one relationship (which is a characteristic of traditional outsourcing). To further develop the ASP model, it will be necessary for ASPs to seek partnerships with other suppliers to package off-the-shelf or standardised solutions. The ASP will *own* the customer relationship and this will be a move away from many outsourcing contracts where customers encourage competition between their suppliers. Fig. 3 identifies the key stakeholders in the ASP industry. It shows partnering arrangements between services, network and applications providers. An ASP brings together these services on behalf of the customer. The success of the ASP will depend on how well it develops, co-ordinates, manages and nurtures these relationships.

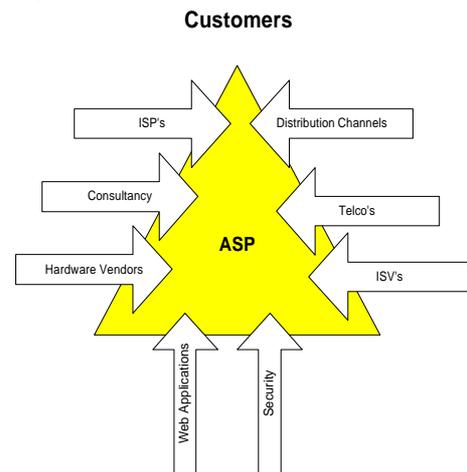


Fig. 3. A stakeholder analysis of the ASP model.

CONCLUSION

This paper has addressed some relevant issues relating to the strategic positioning of companies in the SCSi in the context of their attempts to expand outsourcing services. The above discussion demonstrates that significant changes are afoot as major IT consultancies/service providers enter into M&As and joint ventures to consolidate their strength and position within this industry. Equally, traditional hardware

suppliers, systems houses and generic outsourcing suppliers are also attempting to extend their global reach, although it is likely that many of these companies will be subject to take-overs by the key players. As the large IT service providers consolidate their position in vertical markets by entering into increasingly larger, multi-dimensional outsourcing arrangements, significant changes will occur in the structuring and shaping of the SCSi.

An important new development is the emerging ASP industry. ASPs will offer a new model of outsourcing by providing a contractual service which includes deploying, hosting, managing and renting access to an application via a centrally located facility. At the time of writing, many large companies including IT service providers ISVs, telco's and hardware manufacturers are re-positioning themselves to enter this new market space. If the ASP is to develop, research will need to consider its value added proposition for customers. This will extend previous research on tangible and intangible benefits from outsourcing [20]. Another important issue is the extent to which ASPs will offer their customers a competitive differentiator in the marketplace.

In conclusion, this paper suggests that future research on the SCSi in an outsourcing context should address the wider issue of the strategic positioning of IT service providers across vertical markets. Whilst outsourcing may offer strategic benefits to some companies, these may become inextricably linked to the fortunes of their suppliers, whether ASPs or otherwise, especially in large scale outsourcing contracts.

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