INTER-ORGANISATIONAL INFRASTRUCTURE IN THE AUSTRALIAN TRAVEL SECTOR

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Abstract

Recent advances in technical capabilities have facilitated an increase in the reach and range of the connectivity of Information and Communications Technologies (ICTs). It is proposed that one resultant opportunity is an enhanced ability to supply a common service to a group of firms that operate at a similar point in the value chain – referred to here as Joint Service Provision (JSP). It is argued that JSP will be most appropriate for the development of inter-organisational infrastructure as a result of organisational, institutional and industry level considerations. One specific issue, for non-infrastructural services, is the potential impact on the relative competitive positions of organisations using such services. A case study of electronic distribution in the Australian travel sector was conducted to determine whether use of JSP was indeed increasing. The study also sought to ascertain whether the implications for the source and location of value within the sector varied depending upon whether the JSP represented the development of inter-organisational infrastructure or not.

Keywords: Joint service provision, Inter-organisational infrastructure, Industry value, Travel

1 INTRODUCTION

For a number of years ICTs have been seen as a key catalyst for change in the organisation of production (Barrett and Konsynski, 1982; Johnston and Vitale, 1988; Clemons and Row, 1988) leading to a re-allocation of activities across firms and improved business effectiveness (Malone and Rockart, 1992; Handy, 1995; Byrd and Turner, 2000). Often the enabling technology though has been an extension of that used internally by a single firm (Aglietta, 1987) and the primary benefits have flown to that firm (Shapiro and Varian, 1998; Bakos and Brynjollfson, 1993; Hopper, 1990). Malone et al (1987) however suggested that over time there would be a shift from reliance on such proprietary technology to more open approaches.

Historically there have been limitations to the *reach* and *range* of the connectivity that can be provided by ICTs[1] (Keen, 1991). As the level of information exchange increased so did the specificity of the enabling ICTs (Keen, 1991; Venkatraman, 1994; Anderson et al, 1997) serving as a limiting factor to their spread. Recent advances in technology, through the development of the Internet and its associated protocols, standardisation and data mapping (Christiaanse and Markus, 2002; Hagel and Seely Brown, 2001), however offer the potential for more extensive information exchange with a larger number of parties. Steinfeld et al (1995) and Hagel and Seely Brown (2001) argue that "the age of proprietary information systems is coming to an end, and the age of shared services is dawning" (Hagel and Seely Brown, 2001, p105).

One potential outcome of the improved reach and range capability of ICTs is an increase in the potential for Joint Service Provision (JSP). JSP provides an application, or service, to a group of firms that operate at a *similar* point in the value chain. It is proposed here that an area where JSP may be particularly appropriate for is the development of inter-organisational infrastructure. The most suitable specific infrastructure services are likely to be those where there is both a high degree of commonality of needs across organisations and a need for considerable communication between regularly changing sets of parties.

2 JSP AND INTER-ORGANISATIONAL INFRASTRUCTURE

Infrastructure has been defined as "the base foundation of IT capability, which is shared throughout the firm" (Weill, Broadbent and Butler, 1996). It is seen as serving as the bedrock upon which value adding business applications are built (Kayworth et al, 2001; Duncan, 1995; Hamel and Prahalad, 1994). It is typically <u>not</u> in itself the primary source of an organisation's competitive advantage; rather it provides a <u>facilitating</u> capability. Weill et al (2002) identified numerous distinct components to an organisations infrastructure. Such components may provide generic support to multiple different activities, the role of email for example, or alternatively may provide more precise support to a reduced set.

Hanseth (2000) and Weill et al (2002) acknowledge the existence of external industry or public infrastructure. Little work however appears to have been conducted considering what the defining characteristics of infrastructure at the inter-organisational infrastructure level are. Based upon the intra-organisational framework of Weill et al (2002) and Weill and Vitale (2002) it is suggested that inter-organisational infrastructure will exhibit a number of features; specifically that it:

- is relatively limited;
- long term;
- supports the primary activities of the organisation;

[1] Reach refers to the locations the networks supports links to, while range refers to the information that can be directly and automatically shared across systems

- is shared ie used by multiple business areas;
- is adaptive ie can support future as well as current business strategies; and
- facilitates communication.

The development, through JSP, of an inter-organisational infrastructure can be considered to be akin to the establishment of shared services centres within individual organisations. It would enable organisations to concentrate on those activities where their core capabilities lie. The support nature of such an infrastructure could be expected to minimise institutional, organisational and industry level concerns. Considerable scope remains with regard to how the infrastructure is used. Individual organisations would be able to develop their own applications on top to address their specific circumstances. Consequently the need for alignment in areas such as strategy is minimised. Given that differentiation can be preserved, the relative market positions of organisations can be maintained which also increases the likelihood of accommodation with the surrounding institutional framework. Outside of an infrastructure role institutional, organisational and industry level factors might be expected to have a much greater constraining influence on any JSP.

While the introduction of JSP requires consideration of the impact at all three dimensions – institutional, organisational and industry level – the focus of this initial paper will rest at the industry level. Already some initiatives – that might be classed as JSP – appear to be having some potentially unexpected consequences with regard to the distribution of value within an industry. eMarketplaces, for example, have moved beyond an initial facilitation role to provide enhanced capabilities and are consequently appropriating an enlarged portion of industry value for themselves (Christiaanse and Damsgaard, 2001). An improved understanding of what activities or areas JSP is appropriate for might help organisations reduce the likelihood of such outcomes for future initiatives.

	Inter-organisational infrastructure		
Characteristics	• Shared • Supports primary activities • Facilitates communications	• Long term • Adaptive • Regulating	• Incremental • Limited

Figure 1. Inter-organisational infrastructure

3 METHODOLOGY

The industry focused on for the empirical research was travel – more precisely distribution services for lodging accommodation. Lodging accommodation represents a context where there is a need to communication between a large potential pool of providers and customers. It has also historically shown itself amenable to a form of JSP (travel agents). The case study presented here seeks to provide insight into whether and how the use of JSP may change in an electronic distribution environment ie within an environment where it might be expected that the advances with regard to the reach and range of ICTs would favour JSP.

Travel is a sector that has already made considerable, successful use of electronic distribution (Buhalis, 2003; Hopper, 1990). More recently electronic distribution has become widespread in the lodging sub-sector – and shows tendencies of becoming the dominant distribution mechanism. Forrester (Forrester, 2002) estimated that in 2002 10% of travel bookings were made online in the United States and predict this figure will double by 2007. The lodging industry currently uses ICTs to support a wide range of alternative distribution approaches; including the use of partners and JSP (Connolly, 1999; Werthner and Klein, 1999; Choi and Kimes, 2002). A number of accommodation providers though have also seen electronic distribution as means of reasserting their position in the value system. Accor for example has placed considerable emphasis on the development and promotion of its own proprietary online booking system (AFR, 2003).

As Figure 2 illustrates four distinct distribution paths can be identified:

- **Path one** is direct to the hotel via its website, reception or call centre
- **Path two** is via a GDS (Global Distribution System). Large hotel chains often seek to upload their inventory directly to specific GDS. Smaller operations access them via a switch which in turns connects then to all the major GDS. Traditionally it has been the role of travel agents to search for and book inventory for the end customer on GDS. Increasingly however numerous websites have been developed that draw content from the GDS and allow the end customer to self search and book hotels rooms. There are currently four major GDS (Sabre, Amadeus, Worldspan and Galileo), two major switches (Pegasus and WizCom) and a multitude of powered websites (including Expedia and Travelocity)
- **Path three** is via a representation company that is contracted to market a hotel property and take reservations (major representation companies include Hotelbank, Utell and Lexington Services while niche operators include Leading Hotels Of The World). Representation companies may also provide connectivity to the GDS or a switch for properties. Services provided to individual hotels by franchisers (such as Holiday Inn) or consortia (such as Best Western) are also included in this category.
- **Path four** is via a manual 3rd party aggregator web site. Many such websites (including lastminute.com and wotif) exist providing customers with access to a wide range of accommodation options. Room inventory for sale is manually uploaded by the hotel to the site.

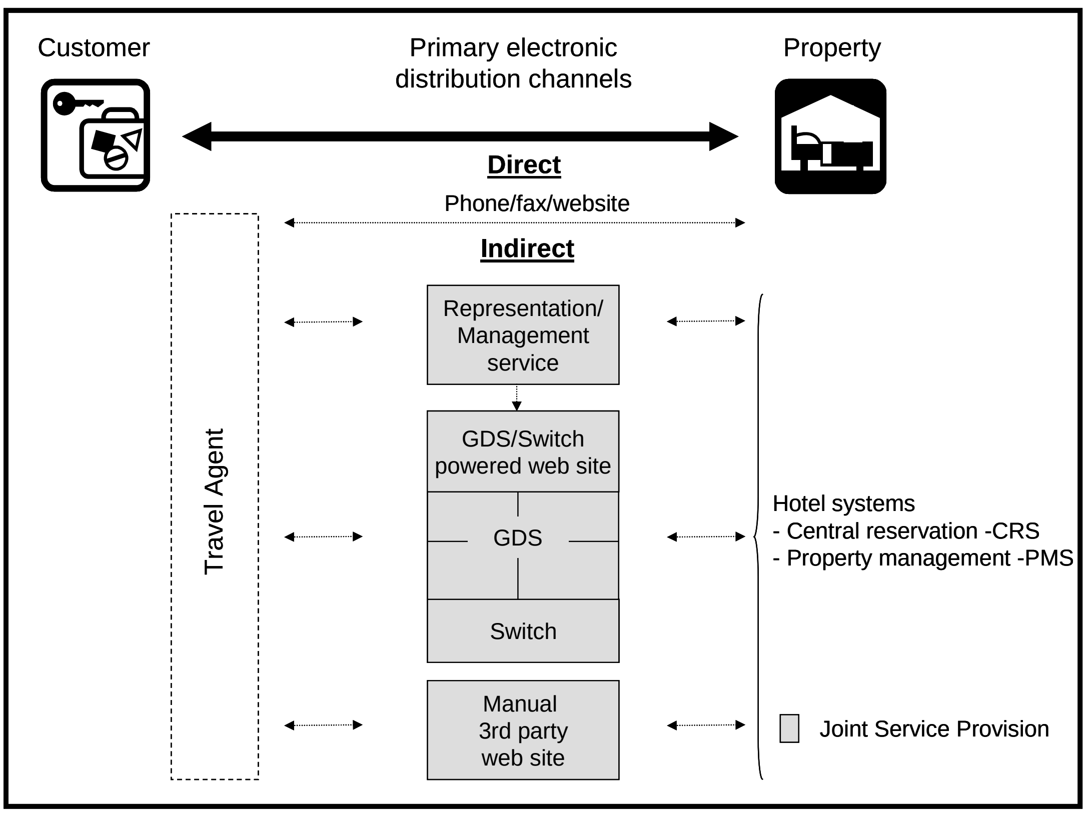

Figure 2. Current electronic distribution approaches in the lodging sector

For all paths there is the potential for travel agents to play a role in actually booking the accommodation on behalf of the end customer. With regard to the indirect approaches – where third parties are used to facilitate distribution – the length of time relationships are in place for varies; from the typically long term for management services to the often short term with manual websites.

The specific questions the empirical research sought to address were:

- How significant a role does JSP play in the electronic distribution of lodging accommodation
- Does the JSP emerging for electronic distribution constitute inter-organisational infrastructure
- What are the implications of JSP for the source and location of value within the sector
- To what extent does the JSP identified depend upon the utilisation of 'advanced' ICTs ie that enable high reach and range

Given that the study of JSP is at an early stage a case study approach was adopted for the empirical research. The case study method is well established in IS research (Benbasat et al, 1987) especially where the primary aim is to enhance understanding rather than document incidence (Yin, 1984). The unit of analysis selected was the distribution chain since the impact of JSP is potentially sector wide (Yin, 1984). Interviews were conducted across the distribution chain in six independent organisations. Interviews were sought with senior business executives and were between one and one half hours in duration. The interviewee was one of the Managing Director, Marketing Director or Chief Operating Officer. Interviews followed a semi-structured approach to ensure consistency while enabling unique insights to be followed up on. Internal and public domain documents (primarily websites, press reports and annual reports) were used to maximise understanding of each party before the interview and to corroborate and augment items raised during those interviews. The research was iterative in that as data was collected findings guided future data collection (Glaser and Strauss, 1967). Interviewees were given the opportunity to comment on the case studies as written up to ensure accurate representation.

4 RESULTS

To address the research questions results from the interviews have been summarised along two themes: the use of electronic distribution mechanisms and their impact on value.

4.1 Hotel Co.

Hotel Co. operates two four star hotels in the CBD of a major Australian city.

Electronic distribution

The company primarily relies upon a representation company for distribution. Despite the costs incurred, bookings via this route are highly prized because they are typically higher rate customers. Bookings are received via fax (there is no systems integration).

The company uses distressed inventory sites (which market rooms from multiple providers and are an example of the aggregator category) but restricts itself to the leading players. Such sites provide a significant and growing level of business. For example for the year to April 2003 one provider alone generated 4,481 room nights (an increase from 3,226 nights for the year previously). Hotel Co. also operates a booking engine on its own website.

Impact on value

Many forms of electronic distribution are seen as having failed to deliver on their reach or cost potential. The financial benefit of customers booking direct on the company's website , for example, is seen as marginal because the booking engine provider is paid a 10% commission. The GDS operate primarily as booking engines rather than increasing reach. For example 73% of GDS originated bookings are from corporates who have an established relationship (and established corporate rate) with Hotel Co.

Distressed inventory sites are not seen as a threat in terms of cross or switch marketing and it is believed they are only interested in receiving sales commission. Seen as more concern is the trend to net rates[2] where the property loses control of its rates.

While location is seen as a critical differentiator of properties there are typically many, similar standard, providers in close proximity. Electronic distribution facilitates comparison and can consequently cause downward pressure on rates. Hotel Co relies on its independent 5* rating rather than its brand as a differentiator and prices aggressively (its prices are set in line with 4* hotels rather than other 5* ones).

4.2 Representation Co.

Representation Co. operates one of the two major switches. It also offers a wide range of representation and property management services to properties in Australia, including CRS and PMS applications that integrate into its switch offering.

Electronic distribution

The company suggested that very few properties have seamless integration between their back-office and distribution systems. The lack of integration is seen as problematic for properties by Representation Co. because it makes it difficult for them to have a comprehensive overview of rates and availability. Technology is not held to be the primary factor limiting uptake. A variety of alternative implementations are available and standard off the shelf packages are the norm for back-office systems making integration relatively straightforward. The principal inhibitor is held to be the ownership and management structures of large property chains. The greater the independence of the properties the greater the difficulty in adopting a common approach.

Impact on value

Representation Co. stated that in providing representation services it has no interest in owning the customer (for example, for cross-sell or switch-sell purposes). It seeks to focus on back-end efficiencies and allows properties considerable flexibility as to how they present themselves. As well as integrating to the GDS, Representation Co. also provides an alternative distribution channel, disintermediating the GDS, via switch powered third party websites. The primary benefit to accommodation providers is a reduction in cost through the removal of one link in the chain.

4.3 Hotel Management Co.

Hotel Management Co provides a range of services, primarily marketing and booking related, to member properties which are independent accommodation providers.

Electronic distribution

The company operates call centres to takes bookings for members and provides a core CRS and PMS. The system provides a single point of contact through which members can manage their operations

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[2] Whereby a hotel sell or makes rooms available to a distributor at a fixed price which they are then free to onsell as they choose as compared to the traditional approach of providing a rate at which travel agents can sell a room and paying them commission – typically 10% – on that sale

and exposes them to the GDS. Members are however free to establish additional distribution relationships – for example with distressed inventory sites – which can lead to the reintroduction of complexity to rate and availability management. Management Co also maintains and promotes a central website. There is "*very limited*" booking activity through this facility though.

Impact on value

Location and facilities are seen as important differentiators and Management Co believes its brand name provides comfort to potential customers regarding the level of service they can expect. However the company acknowledges that electronic distribution has led to an increased focus on price. Management Co. has sought to combat this trend by entering into partnerships with other service providers to offer "*a full, rounded experience*" to the leisure market and provides a loyalty programme with access to upgrades and guaranteed availability to the corporate market.

4.4 eHoliday

eHoliday is a government agency, operating at the State level in Australia, and charged with the promotion and development of tourism.

Electronic distribution

eHoliday operates a website serving as "a complete guide for holiday information, accommodation and events". Operators either input their data themselves (increasingly the case) or can have it input for them via eHoliday. There is no systems integration with accommodation providers and none is envisaged. While recognising that there might be some benefit from greater standardisation and integration – eHoliday is of the opinion that it would be difficult in practice because of the fragmentation of the industry, the lack of technical sophistication of the smaller operators and the likely expense.

Impact on value

The website is designed to function primarily as an advertising mechanism for operators, increasing reach, rather than as a booking channel. Users can search for accommodation by type, facilities and price range. Descriptions of the properties together with the contact details of the operators are returned but not room rates. All customer contact, including bookings, is direct with the operator. eHoliday are of the opinion that they have successfully secured the input of the majority of operators in the State.

4.5 Integrated distributor

Integrated distributor operates a GDS and travel websites powered by that GDS.

Electronic distribution

Integrated distributor suggested that there is a significant body of small operators who can not justify the expense of connecting to GDS (either directly or via switches or representation companies) and are thus substantively excluded from electronic distribution. In terms of systems integration a problem with connecting via switches is held to be that, because of the constraints imposed by the switch's need to connect to multiple GDS, the ability to vary the offers available to different users is compromised.

Impact on value

The company suggested that accommodation providers will increasingly move away from GDS based distribution through travel agents to use website aggregators – powered or with manually input content. Providers however face the twin challenges of avoiding replacing one dependency with another and maintaining their yields as the choice available to potential customers proliferates. At this stage switching between distributors was seen as relatively straightforward given the lack of integration that exists[3]. One avenue given for differentiation was to enter into value-added partnership with particular distributors providing them premium access in terms of room allotments, available rates and special offers. It was accepted though that such partnerships run the risk of potentially introducing dependency in the long term. An increased focus on brand was also proposed. At the current time it was suggested there was too much within brand variation and not enough between brands. It was acknowledged though that such a move would be difficult for many operators because they served as management companies for independent properties or franchisers.

4.6 Wholesale Travel Agency

Wholesale Travel Agency historically offered packages – including accommodation, transfers and entertainment – to inbound groups. In 1995 the company diversified to become an online distributor of accommodation.

Electronic distribution

Wholesale Travel Agency provides two different online services. The first involves the company negotiating rates directly with hotels – net rates[4] – and offering rooms for resale online. With the second the accommodation providers set rates and manage inventory themselves. In both cases data is entered manually.

Wholesale Travel Agency makes its net rate service available to other travel agents and online sites that want to incorporate a travel component as part of their overall offering. The objective is to maximise overall distribution. Such users receive a preferred rate (typically retail minus 10%).

Systems integration between Wholesale Travel Agency and accommodation providers does not exist at present but is in the process of being implemented. The driver for integration is the ability to provide customers with instant confirmation of their bookings. At the moment this is not possible for on allotment rooms. The company is of the opinion that integration should be a relatively simple proposition because most accommodation providers use common, standard systems. Wholesale Travel Agency is also seeking to integrate with the GDS to increase the inventory available on their net rate site.

Impact on value

Wholesale Travel Agency is expanding the services it provides beyond accommodation into new areas such as tours and attractions to increase the overall attractiveness of the site. The additional services are run and hosted by third parties. The company sees the extension as providing a location to which customers will return for multiple purchases at different times rather than a package bought as a whole.

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[3] Integration was seen as being hindered by the lack of common data standards and many systems also contain multiple free text fields. There are moves however by consolidators to restrict variation by compelling accommodation providers to complete standard forms to list their properties

[4] In some cases Wholesale Travel Agency actually purchase the room nights in others the company is granted the right to sell them (ie the rooms are on allotment). With the latter scenario the same room can be provided on allotment to multiple distributors.

Wholesale Travel Agency suggests that as electronic distribution increases price is becoming the primary driver of the initial decision – multiple good quality, price and location combinations are available. If the customer has a good experience however their preference is often to return to the original choice. The company was of the opinion that accommodation providers should seek to mitigate price competition by differentiating themselves through facilities and inclusions or if possible by making themselves a destination in their own right.

5 DISCUSSION

In considering the specific research questions:

- How significant a role does JSP play in the electronic distribution of lodging accommodation

In an electronic distribution environment the role of JSP appears to have increased and new providers have emerged. Such developments have potential implications for the role of previous providers – primarily travel agents – and the distribution efforts of individual organisations The role, and benefit, of company websites may, for example, become increasingly uncertain as compared to aggregator websites. While they may retain a valuable role as low cost booking platforms for returning customers it is less certain whether they will retain the same value as mechanisms for reaching new customers.

Some previous constraints to JSP appear to remain. The structure of the industry can still be problematic. For example many properties trading under the same brand name are actually franchised or independent operations. This can lead to difficulties when trying to instigate a unified approach. A new obstacle specific to the realm of electronic distribution concerns the ease with which it is technically possible to connect to a JSP.

- Does the JSP emerging for electronic distribution constitute inter-organisational infrastructure

Multiple alternative forms of JSP, some of which partially overlap, are being developed. It is questionable whether <u>all</u> though can be classed as inter-organisational infrastructure. While some of the criteria such as being adaptive, shared and facilitating communication appear to generally be met the same is not true for others. For example the provision of representation services often serves as a replacement for an activity rather than support for it. In itself such an outcome is not necessarily problematic <u>unless</u> distribution and customer relationship management are core activities of an accommodation provider.

- What are the implications of JSP for the sources and location of value within the sector

JSP offers the potential for profound changes to the location of value in the sector. Previously dominant players – such as GDS and travel agents who operate via a physical presence – are subject to increased competition. Some are already looking to provide alternative or additional services. Wholesale Travel Agency, for example has diversified to become a provider of aggregator websites itself.

With regard to the accommodation providers themselves. By facilitating comparison, a number of the JSP offerings have intensified price competition, driving down margins and transferring value from providers to customers. At the same time JSP can actually increase the costs of accommodation providers if they serve to <u>extend</u> the distribution chain causing additional fees and charges to be incurred In the extreme a room sold via an aggregator website, powered by a GDS and connected to by the accommodation provider via a switch could result in commission charges from the aggregator and fees levied by the switch and GDS. The effect of the two forces is compounded where services are being used by existing customers seeking lower prices!

Joint service providers are also seeking to leverage their activities into new areas and capture a greater share of the sector's value. Representation Co., for example, has moved to offer PMS and CRS services. In some cases providers positioned at different points along the distribution chain are attempting similar strategies. Hotel Management Co. and Wholesale Travel Co. for example, are both attempting to offer product 'package' offerings. There is evidence though that price could also become the primary basis for competition between alternative providers. Representation Co., for example, is already moving in this direction promoting cheaper switch powered (as opposed to GDS powered) websites.

- Is JSP dependent upon 'advanced' ICT usage ie that enable high reach and range

Clearly a number of the JSP examples identified depend upon the emergence of the Internet for their existence. Beyond that foundation however, relatively simple technology often appears sufficient – at least during the initial adoption phase. Systems integration, for example, is limited and basic communications mechanisms such as fax and email remain heavily relied upon. It would appear that developments that have increased the reach of ICTS have probably had a greater impact at this stage than those that have increased the range.

The case study suggests that there is substantial JSP for electronic distribution within the lodging sector and that the nature of that JSP varies considerably. Where it appears not as infrastructure but as an activity in its own right there appear to be significant implications for the competitive position of accommodation providers (and others) – *if* distribution represents one of their core capabilities. Such JSP may replicate what occurred with travel agents but in a more price competitive environment. The pressure to seek out and develop alternative core capabilities will consequently be increased. Once a JSP service attains a critical mass – as some appear to have already done – it may become very difficult for an individual organisation to choose not to use them. The relative power of the provider will potentially surpass that achieved by travel agents by virtue of the increase reach of their service.

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