Community Based Approach to E-Commerce: An Alternative E-Commerce Model for Small Communities

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BACKGROUND

Portrayed as the panacea for businesses in the late nineties, Information Technology (IT) is fast maturing into realistic business tool integrating with business processes to make an impact on business performance. The Internet has lowered barriers and provided access to the world market while IT generally has made the core functions of business more efficient. However, has it transformed business practices?

Early exponential growth in Internet use was driven by the simplistic view that Internet presence would automatically lead to business transactions and this has resulted in the Internet becoming a 'cyber junkyard'. With millions of businesses on the worldwide web, the promised competitive advantage of Internet presence has either failed to materialise or been short-lived. While large businesses are able to use conventional media to promote their web presence, small and medium-sized enterprises (SME), because of resource constraints and limited promotional activities (Carson 1985), are unable to take advantage of the web. Studies reveal that the volume of business generated for SMEs through the Internet is small (Venkatesan and Fink 2001; Venkatesan, Fink et al. 2001). Consequently, questions such as 'How do people know about my business?' become relevant to SMEs.

Given the importance of the SME sector in many OECD economies (ABS 1998; Chetcuti 1998; Flynn, Heidi et al. 1998), the adoption or non-adoption of e-commerce tools by this sector will significantly influence the impact of IT revolution in different economies. Several studies acknowledge the low level of adoption of e-commerce by SMEs (Dekleva 2000; Venkatesan and Fink 2001; Venkatesan, Fink et al. 2001).

Experience suggests that the digital revolution has had limited impact in regional Australia (Foreshaw 2000). A study in regional Western Australia (WA) identified several problems that potentially widen the digital divide between city and regional areas (Venkatesan & Robinson, 2002). Limited market, distance and other related factors limited the usefulness of IT based solutions in regional areas.

Apart from technological barriers such as communication networks, speed of access and poor service, non-technical barriers such as knowledge, time and resource constraints of business owners/managers can also limit the use of IT tools. Most small businesses are owner-operated and these owners/managers, unlike their counterparts in large firms, have to be experts in several areas (Carson 1985), thus adding to their knowledge and time constraints.

A major obstacle regional businesses (most of which are SMEs) encounter is their inability to respond to business opportunities quickly. Further, because of their isolation, businesses in one rural community rarely communicate with the next.

Thus, for regional businesses, conventional solutions such as improving the networks, producing websites and joining portals alone cannot provide the competitive advantage. A next generation business tool that enables smarter use of existing network infrastructure is needed. This paper discusses a community based e-commerce business model and examines various issues associated with its implementation. Such a development is in progress in Western Australia.

A HUB AND SPOKES MODEL

Fundamentally, this model takes a community approach to e-commerce. Conventional solutions focus on maximizing revenue for software solution providers and target individual business oriented software. However, small businesses in regional communities require a cooperative rather than a competitive approach. While individual businesses make their own decisions on transactions, they become a collective while searching for business opportunities.

Conceptually, businesses in a town or community are connected to a local hub. Several such hubs are connected to a central hub which provides intelligence, technology and support. The local hub uses basic technology which every business has access to. Local hubs act as a conduit for information flow between businesses and the central hub and store information useful to the local community (such as the member listing). A conceptual schematic is shown in Figure 1. Businesses connect either directly to the local hub or through other service providers. Technically, the central hub can link directly to businesses but the local hubs are being deliberately introduced so that this becomes a true cooperative effort between communities and industry.

Information flow is automatic, from the hub through the node to businesses with little human intervention. The hub will respond to manual queries and suggestions, add new websites for searching and will grow in tune with the needs of regional businesses. Part of the hub will also make use of existing business networks within small rural areas (e.g. Telecentre networks).

Operation of the System

Any small/medium business in regional Western Australia will be able to join the network free of cost for three to five years by completing their basic profile on-line, the type of business they are in, opportunities they are looking for etc. Such details are entered into the system and modified when necessary. Absence of log-ins and passwords is a key feature of the system. Businesses will have the option to revise their details at any time in future.

Technical issues such as security are dealt with at the central hub. Business information is automatically fed into the central hub and stored in a database. The system uses a variety of filters based on geographic and business parameters.

The central hub continually searches for business opportunities at local, regional, state, interstate and international levels depending on the summary profile of businesses. Using key words and web addresses, the intelligent system seeks and extracts information on market opportunities from a variety of sources on the www, in a progressively widening circle. Such information is then stored in a database.

Using a database matching system, market opportunities are filtered, matched to local business profile and fed back to relevant businesses alerting

Figure 1. Regional Electronic Business Network - A conceptual diagram
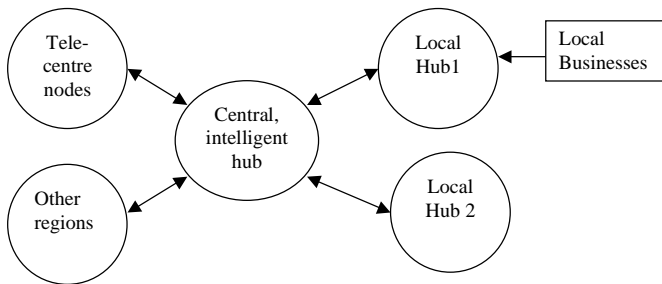
them about suitable market opportunities, through email and similar channels available to regional communities. A business will automatically get the message once its computer is switched on.

For example, if a landscaping business wants to operate only in one specific town, the system will identify all the landscaping business opportunities, filter them and email information on specific town-based jobs to that business. In contrast, if a construction group operates throughout Australia, then all the Australian market opportunities identified by the system will be relayed to that business. The system will continuously learn and expand its capabilities.

The system will also encourage horizontal transactions between businesses in the regions. Each participating business will be able to post their requirements on the system through a series of templates. Instead of acting as a simple bulletin board, the hub will filter the message and relay it to businesses meeting that profile.

At present, this system is being designed to relay the information selectively through the network and no transactions are processed. This is deliberately done because transaction systems are still evolving and there is no standardisation in the market. Further, the theme behind the project is to make smarter use of existing networks and not to compete with the market.

It may be noted that this central hub is not a website, is not in competition with other portals and is not directly visible to businesses. It remains in the background and works through local hubs such as the local Chambers of Commerce. The design of the system is such that local hubs are continually promoted. Essentially the network will go to businesses and deliver information rather than businesses having to struggle with systems and interfaces to extract information.

KEY ADVANTAGES OF THE PROPOSED NETWORK / SYSTEM

- The system is dedicated to businesses in Western Australia.
- It acts as a technology buffer and minimises the effect of rapidly changing technology.
- Resource burdens associated with changing technology is eased. Upgrading of software, need to keep up training and local availability of expertise to solve problems add to ongoing cost. Most regional businesses, being small, can ill-afford such a cost.
- Current portals and web sites are generalised and not intelligent.
- Substantial time is saved for businesses in searching new opportunities.
- The system overcomes the complexity of websites - Some large websites are created by technologists and are not user friendly. The skill and time requirements can be high.
- It is dynamic and grows with the needs of the business community.
- It is in the public domain where business information and profile is confidential and is managed by the local community for their benefit but cooperating with other areas in the interest of regional growth.

- The intelligent hub will substantially reduce the load on the physical network in the regions, resulting in faster access, reduced dropouts etc.
- The same tool can be later used to provide community information through community portals.
- The model will be the first step towards a publicly owned, national e-commerce platform and the hub will be the central element of the regional electronic business network.

Why an Intelligent System for Regional Businesses Only?

Despite significant improvements in the technical infrastructure, information access continues to be a major issue for regional Australia. IT adds another layer of digital divide to existing problems faced by businesses. Thus the need is more acute for regional businesses.

A business may spend considerable time using the Internet without identifying any opportunity. Low success rates, lack of time, financial and knowledge resources to update their technology all exacerbate the situation. Some of these problems are unique to regions and rarely felt in major cities. For example, a major software change will have a lot more impact on a regional small business as compared to its metropolitan counterpart purely because of the lack of access and knowledge. Having a broadband connection has very little effect if the software is not updated or cannot be better implemented. In such cases, the regional hub can be a technological buffer and ensure that businesses use the networks more efficiently.

A regional business network for business to business (B2B) also has a better chance of success because unlike any consumer site, a business hub can be better regulated, the information can be streamlined and in the long run such a network can be self-sustaining using a fee for service mechanism. In such a network, information overload can also be avoided. For the same reason, the regional network will be limited to regional or rural businesses.

COMMUNITY ORIENTED E-COMMERCE TOOL

The technical solution that was discussed earlier is not new and is within the reach of existing technology. However, similar solutions offered by private service providers in the past have failed due to the business motives of such providers, customer perceptions and lack of community ownership. The focus of these software solutions has been on developing a solution that will maximise profit for the IT company rather than meeting community needs. Further, the ownership of such solutions has never rested with user groups. In contrast to conventional solutions, the proposed hub and spoke model will have full community participation and ownership.

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