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Strategies to Enhance E-commerce in Rural Areas

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Abstract

Recent economic statistics and future projections by experts indicate that opportunities for economic growth in the future is going to come mainly from businesses of the “new economy” that utilize the powerful strategy of e-commerce. The recommendations in this article emanate from extensive primary research in the rural parts of North East USA with special focus on the rural parts of Pennsylvania. The primary research is combined with secondary research of the status of e-commerce in rural parts of several other countries thereby rendering the recommendations generically applicable.

1. Introduction

It is important to determine if the rural parts of a state, country or region have the necessary ingredients to participate in the “new economy” and reap the economic benefits that certain other regions of the world are experiencing. For example, the rural parts of Pennsylvania State had been a leader in the steel and coal industries of the 20th century but have been slow in adapting to e-commerce and attracting high-technology businesses. Small businesses that dominate the economy in most rural parts need to be capable of engaging in e-commerce and be convinced about the business advantages of engaging in e-commerce. There are very few studies that assess the awareness of e-commerce issues in rural areas and develop strategies to enhance e-commerce activity. This comprehensive study fills that void. This article describes the results, conclusions and recommendations from this study.

2. Problem Description

The following are some broad issues that were dealt in this study:

- a. The need to and the process used to understand the *perception* and assess the *readiness* of rural business owners pertaining to e-commerce especially in the areas of: a) safety and security of the Internet, b) access and availability of technological and human resource infrastructure, c) tax and government incentives and d) business advantages of engaging in e-commerce.

- b. Assessing the *needs* of small businesses pertaining to communication and Internet-related infrastructure in the region, and availability of human resources (staffing, hiring & training needs), government support, and incentives.
- c. Benchmarking e-commerce activity and infrastructure in their region with other “successful” regions in their country and similar regions in other parts of the world.
- d. Making policy recommendations to region, state and federal governments that can help enhance e-commerce activity in rural regions.

3. Related Literature

Literature is replete with articles pertaining to advantages, success stories and drawbacks of e-commerce. However, almost all of these articles are *descriptive* in nature or they present basic statistical results. Also, most articles address either the technological aspect of e-commerce or issues pertaining to dot.com businesses. A brief literature review related to issues pertaining to e-commerce and small business is presented in the following paragraphs. However, a detailed bibliography is attached in the appendix.

In spite of the recent economic downturn, the US Census Bureau reports that “retail e-commerce (B2C e-commerce) sales in the US during the final three months of 2001 (Q4) came to over \$10 billion, slightly more than one percent of the country's total retail sales of \$860 billion. The latest e-commerce figures from the US government are the highest ever, by a margin of over \$1.1 billion, since the bureau began keeping such records in late 1999. Moreover, while total retail sales in the US were up only 5.3 percent from the same time in 2000, e-commerce sales saw a 13 percent increase” [12]. In addition, the Forrester Research estimates the Business-to-Business (B2B) e-commerce revenue to increase from \$109 billion in 1999 to \$2.7 trillion in 2004 (forrester.com). For these to occur, the small businesses constituting about 50% of the nation's economy, need to participate in e-commerce in a significant way. Long reports the findings from a 1999 Computer Reseller News survey [29] that although 55% of the small businesses polled (mostly with 25 or fewer employees) were using the Internet for business, *e-commerce* still may be in “the feeling-out stage” for most of them. Wallace [56] discusses the lack of diverse routes in rural areas of the country through separate switching links to AT&T, MCI, Cable & Wireless, etc. This lack of alternate switching links is a drawback for these rural businesses since their Web sites will not have the highest level of availability. Several businesses have started providing web-based services and

solutions for small businesses [6], [19], [[23], [57]. However, many of these businesses focus their activities on “high-tech” areas such as Seattle, San Francisco, etc. [44].

Many countries in the world and the states in the U.S. are encouraging e-commerce activity by providing tax breaks. In addition, please observe the following examples of government assistance in developing e-commerce. Singapore is developing infrastructure, providing education, and creating an e-savvy culture [39]. Canada is developing an unique relationship between the government’s space agency and Telesat Canada which will enable Telesat to support initiatives such as e-commerce through its satellite services to citizens in urban, rural and remote communities in the country [7]. The Australian federal and state governments, in partnership with industry, are encouraging the use of e-commerce among small and medium enterprises through a combination of training and awareness programs, access to web-based information resources, etc.

In 1999, Ernst & Young’s e-Commerce Coalition addressed two issues of greatest concern to business and government: (1) the impact of e-commerce on state and local government tax revenues, and (2) the challenge of reporting and collecting sales tax (especially by small businesses) in the online world [32]. Proponents of e-commerce vehemently oppose taxing e-commerce as they claim it to be a major hurdle for small businesses in utilizing the Internet for their competitiveness. Since sales tax represents more than 25% of total state tax revenues across the US [38], critics of the Internet Tax Freedom Act have delineated negative effects of loss of sales tax revenues for the state governments such as cutting funding for state schools, hospitals, fire/police departments, etc. (e.g., [2]).

The benefits and challenges of e-commerce are discussed and debated at length in the literature. However, the reported *empirical research* in the area of E-commerce is minimal while that pertaining to small businesses and e-commerce is infinitesimal. The Winter 2000 Newsletter of AACSB-I, the premier accrediting body of business schools, underscores the need for the type of research outlined in this current proposal—“...the best research that can be done with e-commerce now is fundamental research that has an applied emphasis.” This e-commerce project had a strong applied research emphasis.

4. Research Methodology and Focus

- A comprehensive mail survey was sent to a stratified sample of 5,000 rural businesses in nine industry categories (the response rate was close to 10%).
- In-depth telephone and personal interviews of rural businesses that have been successful in deploying e-commerce were conducted to better understand the perceptions and needs of small businesses. The interviews also addressed the region-specific

opportunities provided and the challenges posed for rural businesses to engage in e-commerce.

- In depth telephone interviews of technology businesses were conducted to understand their telecommunication infrastructure and their pertinent service offerings to rural businesses in the region.
- Secondary research of relevant catalogs, brochures, journals, magazines and web sites was conducted to determine the educational offerings, and the telecommunication and human resource infrastructure in the region pertaining to e-commerce.
- A policy-making focus group session was conducted to: a) discuss the research findings pertaining to e-commerce deployment in the region, b) have an interactive dialogue on relevant e-commerce issues among a diverse, knowledgeable and influential group of individuals and c) devise strategies to develop policy recommendations to enhance e-commerce activity in rural parts of the state. The focus group participants included state legislators, representatives from Department of Community and Economic Development, county planning offices, e-commerce experts, business college dean, small business owners, venture capital experts and technology experts.

Five prominent regional parameters that the rural businesses indicated as important ingredients for e-commerce growth were explored in more depth:

- ❖ Conducive business climate
- ❖ Readily available venture capital
- ❖ Knowledgeable/skillful workforce
- ❖ Strong collaboration/networking among a region’s public and private sectors
- ❖ Image of the region possessing a technology culture

Internet security issues that the businesses were concerned with while conducting e-commerce:

- ❖ Secured trading and access of information
- ❖ Assurance of confidentiality
- ❖ Precision of authentication
- ❖ Guarantee of integrity
- ❖ Reliability of service
- ❖ Minimal threat of virus attack and other e-crime
- ❖ Trouble-free back-up and data recovery services

5. Findings & Conclusions

- It is evident that e-commerce is more prevalent in manufacturing, service and Finance, Insurance and Real-estate (FIRE) than in other sectors. The agriculture sector is far behind all other sectors in engaging in e-commerce.
- Businesses are engaging in mainly the marketing aspects (B2C—business to consumer) of e-commerce (e.g. advertising / selling / customer service) and very little in the supply chain management (B2B—business to business) aspects of e-commerce.
- The top reasons for businesses to engage in e-commerce are improving flow of information, enhancing organization’s image and increasing productivity. These three were also the top benefits experienced. Surprisingly, increased sales and access to new market

were not reported as top reasons to engage in e-commerce.

- Statistical analysis confirmed that businesses that had identified a specific initial reason for deploying e-commerce reaped greater *corresponding* benefits in that category.
- Top reasons for businesses to *not* engage in e-commerce include: a) strategically not important for business (overwhelming reason), b) uncertainty of Internet's performance, reliability and security, c) lack of affordable technical infrastructure and d) lack of knowledgeable and skillful workforce.
- There is no real barrier in the rural areas to get started in e-commerce—technology is available in all rural areas. Practically every point in the rural region can be served by telecommunication providers, but the cost of service can be extremely prohibitive in *some* remote areas.
- Inadequate bandwidth and lack of redundancy to assure uninterrupted service were the two major technological deficiencies.
- Businesses, *in general*, are in favor of *not* taxing e-commerce and do not believe that it will result in lost revenues for the state and local governments.
- There is a general lack of awareness on e-commerce legal issues—e.g., legality of e-signatures in some regions.
- Businesses successful in deploying e-commerce attributed their success to management basics--performing careful strategic analysis and cost/benefit analysis.
- If the region as a whole does not have an image of being high-tech, it results in disadvantages such as lack of critical mass of technology businesses and lack of availability of skilled workforce and consultants.
- Many rural businesses outsource their web-hosting activities to third-party providers, many of whom were located outside the rural regions.

6. Recommendations

To promote e-commerce among rural businesses, the following are suggested:

- Educate entrepreneurs and small business owners & managers about the strategic importance of e-commerce and its potential benefit to businesses.
- Develop resources for providing short-term, practically oriented, hands-on training and free consultancy to small, rural businesses to adopt e-commerce.
- Develop and promote initiatives to encourage public-private funding for developing technological infrastructure in the region.
- Encourage public-private partnership to develop more sources of venture capital to promote high tech businesses.
- Attract and keep the younger generation in the region.

- Aggressively foster the right image—changing the image of “blue collar workers” to “smart people living a smart life” is very useful.
- Do no tax e-commerce.
- Publicize a few e-commerce success stories to serve as a role model to attract other e-businesses.

This study was made possible, in part, by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly

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