

Research Articles

Empowering Women Through ICT-Based Business Initiatives: An Overview of Best Practices in E-Commerce/E-Retailing Projects

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Abstract

Information and communication technologies (ICTs) have been increasingly promoted as a key solution for comprehensive development, poverty eradication and the empowerment of historically disadvantaged groups, such as women and minorities in the Global South. ICT-based business initiatives, and e-commerce projects in particular, have been hailed as “potential goldmines” for women’s empowerment. However, research and experience show that to be successful, projects must balance the need to overcome structural barriers to women’s advancement with sensitivity to the limited space within which many women in the Global South navigate. In this paper, we review literature on ICT and empowerment of women, drawing upon several e-commerce/e-retailing projects as case studies to identify a set of best practices that underlie a successful project: 1) government and institutional support, 2) societal involvement, 3) training and empowerment, 4) expansion of market access, and 5) managerial best practices. We anticipate that the insights generated by this study will be useful both for purposes of effective program development and policy design.

Introduction

This study is motivated by the potentially powerful role that information and communication technologies (ICTs) can play in the empowerment of women in the poor and underdeveloped societies in the world.¹ In this essay, we review the literature on ICTs and empowerment of women, drawing upon several e-commerce/e-retailing projects as case studies to identify a set of “best practices” that underlie a successful project. We anticipate that the insights developed in this study would be useful both for purposes of effective program development and policy design.

ICTs are increasingly promoted as a key solution for comprehensive development, poverty eradication and the empowerment of historically disadvantaged groups, such as women and minorities in the Global South (Bhatnagar & Schware, 2000; Friedman, 2005; Hafkin & Huyer, 2006; Hafkin & Taggart, 2001; Heeks, 1999, Huyer & Mitter, 2003; UNCTAD, 2002; International Telecommunication Union, 2005). An International Telecommunication Union (ITU) study (2005) describes ICTs as potentially

1. For the purpose of this paper, we define ICTs as any communication device and application, such as computer and network hardware and software, the Internet, telephones, cell phones, radio and television, and additional services they enable, for example, long-distance learning.

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powerful “development enablers” and the World Bank currently supports more than 1,000 projects with an IT component (The World Bank Gender Group, 2006). Simultaneously, the Declaration of Agreement in Support Of Girls and Women in Information and Communication Technology, introduced at the United Nations World Summit on the Information Society in Tunis, Tunisia on November 16, 2005, stresses that “ICT allows women increased participation in political, social, and economic arenas and supports empowerment for themselves, their families, and their communities.” However, it also warns that “[f]ailing to recognize and remedy women’s severe under-representation in the development of ICTs and ICT policy, including both access and leadership, limits our ability to advance our global society.”

In recent years, therefore, development agencies, such as the World Bank, USAID and the Canadian International Development Research Centre (IDRC) have substantially increased funding for ICT projects that specifically aim to empower women, such as e-commerce, e-government, business development, and networking projects. Women have increasingly proven to be active and enthusiastic participants in a large variety of ICT-enabled projects, such as computer training and data entry facilities, call centers, billing, computer repair work, and e-enabled businesses. (Hafkin & Huyer, 2006; Lafond & Sinha, 2005; Sciadas, 2005). E-commerce projects (traditional or otherwise) that tap the skills of women and exploit their potential have been particularly popular in global markets. The Georgetown-initiated Cottage Industry-Global Market CI-GM Project, Tortas Peru, the India Shop, ElSouk, EthioShop, Women Entrepreneurs and Handicraft Producers in Bhutan, the World Bank-funded Knitting Together Project and the Rupununi Weavers Society are examples of (at least, initially) successful e-commerce projects. Projects like those by the Delhi-based Datamation Foundation, the Information Village Project in Pondicherry, India and the Grameen Phone Project in Bangladesh serve as models of the potential of ICT-based projects.

Experience has also shown, however, that the effective application of any new technology must recognize that technologies are not gender neutral, neither in design nor in implementation (Boserup, 1970; Hafkin & Huyer, 2006, Rosser, 2005; Wajcman, 1991), and second, that ICT projects must be designed to function within the cultural and so-

cial structure without inadvertently reinforcing existing gender divides or causing even further marginalization in a backlash, such as what happened to the Rupununi Weavers Society (Hafkin & Huyer, 2006; Maneja, 2002; Sciadas, 2005; World Bank, 2007a). Numerous other factors can impact the success of an ICT-based project. While many papers have addressed the theory related to this topic, and there are individual case studies examining the impact of ICT on the empowerment of women, we have, to the best of our knowledge, not seen any systematic work on “best practices” in this area. Our paper, therefore, is motivated by the question: How do ICTs and the development of e-commerce/e-retailing projects facilitate the empowerment of women, and what are some characteristics of successful e-commerce/e-retailing projects? For the purpose of this paper, we define e-commerce/e-retailing as business-to-customer (B2C) and business-to-business (B2B) online sales and purchases of goods or services.

The methodology we developed for this study is to first review the literature and identify factors that facilitated successful e-commerce/e-retailing projects and factors that hindered such projects. We then identify a set of e-commerce case studies that we analyze to understand the extent to which the theoretical findings are validated by the field experiences. Through this process we are able to identify a set of best practices that underlie a project that is successful in empowering women. We define *best practices* as sets of actions, managerial practices, and policies undertaken by women-owned e-commerce/e-retailing businesses that lead to the empowerment of women both working in those businesses and those others who regarded it as a role model to emulate. Many of the case studies included in the paper have been widely discussed in the literature. We are limited by the availability of data since our specific focus is on e-commerce/e-retailing, and we include mainly case studies we found during our literature search that specifically relate to e-commerce/e-retailing (rather than the general use of ICTs). Our experience mirrors the 2004 UNCTAD *E-commerce and Development Report's* spotlight on the “scarcity of reliable data on the value of e-commerce” (p. 13), which is mostly “based on anecdotal and case study evidence” because of an absence of statistical data on e-business, especially in developing countries (p. 25).

Literature Review: ICTs, Development, and Women's Empowerment Through E-Commerce/E-Retailing

ICTs and Development

ICTs are consistently hailed as one of the most effective tools for economic development. An ITU study (2005) describes ICTs as potentially powerful "development enablers:" they are cost-effective with significant transformative power, allow developing countries to leapfrog several stages of the development process and, in furnishing individuals directly with tools for self-empowerment, avoid top-heavy and corrupt bureaucracies (Heeks, 1999; Karake-Shalhoub & Al Qasimi, 2006). Specifically, Eggleston, Jensen, and Zeckhauser (2002) argue that ICTs "can enhance the functioning of markets that are critical for the well-being of the poor" because ICTs can foster greater market integration in many ways:

- They allow firms and individuals in developing countries to participate more competitively and with greater ease in the regional, national and global economies and reduce uncertainty in doing business;
- Information regarding prices enables producers to plan their product mix and input purchases in an efficient manner;
- Access to ICTs allows producers to sell their products in the most profitable markets and determine the optimum timing of sale;
- Availability of price information shrinks the informational asymmetry between the rural producers and middlemen;
- ICTs reduce the exploitation of rural producers by e-middlemen;
- Increased information facilitates technology diffusion, adoption and innovation at a much faster pace;
- Increased information about the availability of jobs could result in better and faster matching between landless laborers and available jobs, ultimately leading to increased productivity;

- ICTs provide greater access to weather-related information and credit opportunities.

In short, access to ICT and proper use of this access could place an economy on a higher income trajectory over time.²

Women's Empowerment Through ICTs

The literature on the enormous opportunities ICTs can provide for women's empowerment is vibrant and wide ranging. Kelkar and Nathan (2002, p. 433) have argued that ITs have the potential to "redefine traditional gender roles" and that "the spread of IT-enabled services has been immensely beneficial to both women and men, especially those who have limited skills or lack of resources to invest in higher education." Drucker (2001) has called ICTs the "great equalizer" and pioneers in the field of gender empowerment through ICTs, both in academe and advocacy, such as Hafkin & Taggart (2001), Haflan (2002), Huyer (2002, 2005), Mitter (2003), Nath (2001), Sharma (2003), Sharma (2004), and Ng (2005) have convincingly shown that access to and effective use of ICTs contributes to women's empowerment and capacity building in numerous ways, frequently with synergetic effects:

- Training in the use and design of computer applications, such as e-mail, word-processing and design applications, builds marketable skills;
- Marketable skills create alternative possibilities for income generation and the possibility of upward mobility;
- An independent income is the basis for individual autonomy, increased agency and control and, frequently, increased self-esteem and self-confidence (Huyer, 2006, p. 30; Garrido & Roman, 2006, p. 170). *The Economist* quotes a female volunteer who helps run an ICT-based "Knowledge Center" in Embalam near Pondicherry in India as attesting that the status of women in Embalam has improved as a result of using the computers. "Before, we were just sitting at home," she says. "Now we feel empowered and more in control"³;

2. Other papers include Rice (2003) and Kenny (2002). Rice (2003) summarizes the benefits of ICT, including the ICT sector's direct contribution to output, improvements in public sector administration, education, better delivery of public and private services such as health care, monitoring ecological situations and maintaining environmental stability, integrating distant regions and areas, providing better communications, promoting productivity gains, efficiency, and growth. Kenny (2002) describes ICTs as "powerful tools for empowerment and income generation in LDCs."

3. Charles Kenny "Behind the Digital Divide," *The Economist*; 3/12/2005, Vol. 374 Issue 8417, Special Section pp. 22–25.

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- Increased agency and self-confidence allow women to travel more and develop a wider network of contacts. Such travel and networking expose them to the availability of more economic opportunities (Eggleston, Jensen & Zeckhauser, 2002; Rice, 2003; Kenny, 2002; Bayes, von Braun, & Akhter, 1999);
- ICTs open new avenues for education, communication and information sharing;
- ICTs can be a valuable tool for the organization and mobilization of women's advocacy and interest groups (Friedman, 2005; Nath, 2006);
- Education and information increase knowledge about the world and the political, economic, social and cultural factors that shape women's lives.

Finally, women's empowerment and a country's level of economic development are inextricably linked (Boserup, 1970; Elson, 1995; Marchand & Parpart, 1995; Nussbaum, 2001; Sen, 2000). For instance, UN Secretary-General Kofi Annan (2005) has called the empowerment of women "the most effective development tool." Sharma (2003) argues that "societies that discriminate by gender pay a high price in terms of their ability to develop and to reduce poverty" (p. 1), an assertion that has been supported by every annual United Nations Human Development Report since 2001 (UNDP, 2001–2006).

Despite these great promises and numerous success stories, one must not be seduced into believing that ICT-enabled development projects for women are panaceas, but be mindful of the very significant challenges faced by women in ICT-based businesses. Indeed, the IT sector remains one of the most gendered sectors (Archibald, et al., 2005; Arun & Arun, 2001; Mitter & Rowbotham, 1997; Patel & Parmentier, 2005; Wajcman, 1991). Ubiquitously, women face barriers to the use of ICTs, mostly lack of training, lack of access, the high costs of equipment and connection as well as software and hardware applications and designs that do not reflect the needs of women (Arun & Arun, 2002; Hafkin & Huyer, 2006; Hafkin & Taggart, 2001; Mies & Shiva, 1993; Mitter, 2005; Mitter & Sen 2000; Momo, 2000; Rathgeber, 2000; Sciadas, 2005). These barriers are often exacerbated by extreme poverty and highly patriarchal social structures that relegate

women to a much inferior status. Hafkin (2000) has also shown that gender discrimination is often transferred, presumably unintentionally, because ICTs are designed by "Western men who do not understand the social, economic, or cultural contexts for use of these technologies" (p. 4).

There are several specific obstacles that prevent women, especially women entrepreneurs, from enjoying the full benefits of the ICT revolution:

Business Challenges

The key two business problems faced by women running micro (e-commerce/e-retailing) enterprises are constraints in obtaining necessary loans for seed money and/or to ensure consistent funding for an existing project (they therefore often develop substantial dependency on government sources) and resistance to women's empowerment by (male) government officials and fellow villagers (Garrido & Roman, 2006; Poster & Salime, 2002). Additionally, women find it difficult to mobilize alternative financial resources, as, unlike men, in many developing countries they are unable to travel on their own to various distant offices and agencies.

One of the most important problems women's enterprises face is undue delay in getting paid by government departments and other agencies for the work they do. Unlike their male counterparts, they are limited in their abilities to collect their dues because of their limited freedom to travel alone. Corrupt government officials may see women's organizations providing ICT-based services as a threat to them, especially where corruption exists in the provision of services. Government officers often do not appreciate seeing work they were previously doing now being handled by women who are less educated and less trained than they. This may lead to deliberate delays in processing applications, granting approvals, making payments, etc. This problem is worsened by the fact that many of these women-owned businesses are dependant to a large degree on specific products/services and on government contracting. They realize the need for diversifying their business activities as key to their long-term survival and growth, but they face serious financial and societal constraints.

Finally, villages are often illiterate and distrust financial transactions over the computer; hence it takes considerable time and effort to build trust and confidence in the business.

Societal Challenges

Women are often discouraged, both at the family and village levels, in their entrepreneurial efforts. Often the fear that it may change or shift the power structure creates hurdles in their path. Many women are also uncertain about their professional opportunities once they get married. In addition, juggling household responsibilities and work responsibilities can be very challenging and may result in women opting out of the ICT-driven developmental efforts (Hafkin & Huyer, 2006).

These structural constraints are extremely difficult to overcome because they reflect centuries of culturally and religiously justified forms of gender discrimination and have been firmly internalized by men and women alike, permeating all institutions of society. These gender inequalities are often enforced by older women in so-called "escalator hierarchies," (Papanek, 1990, p. 170, quoted in Maneja, 2002, p. 25) who depend for their hierarchical seniority on men whose expectations they have served in their youth, such as through bearing sons, obedience to elders, or excellent housekeeping skills. Therefore, development projects cannot automatically depend on the support of all women, especially respected elder women, for fear that these programs might upset the "social appletart."

This means that projects must transform the mechanisms and internalized psychological constraints that restrict women, but must do so slowly and over time. This is of particular importance for e-commerce projects that enable women to earn considerable incomes of their own. This economic empowerment of women substantially changes power relations between women and men (who until then, had exclusive control over the means of production) and is likely to cause conflict, as it happened to the Rupununi Weavers Project in Guyana. Therefore, as Bourque and Warren (1990) have shown, for these women to ever truly benefit from the opportunities technologies can offer, a recognition of the ideological, cultural, and social impediments to the acceptance of technological capabilities is just as crucial to eventually challenging directly or indirectly these impediments as the empowerment of women (through education, awareness-raising, etc.).

It must be noted, though, that while culture may and does inhibit women's ability to engage in economic opportunities, it is not static and does not

preclude women from all sorts of agency. Indeed, as Maneja points out, culture can actually open paths to power (2002, p. 32). For example, women can focus on the "enabling" structures of culture, such as an emphasis on child rearing, their cooking skills or expertise in weaving or embroidery, to open opportunities for social and economic empowerment. Indeed, e-commerce/e-retailing projects, such as Tortas Peru, Women Weavers in Morocco, Elsouk, EthiopiaShop, and the CI-GM project are clear examples of women's successful capitalization on "traditional female skills." Therefore, instead of assuming "culture" to be a static, oppressive force that needs to be broken down or oversensitivity to an idealization of culture, successful ICT4D projects work within a culture, assume that women are resourceful, and if given the opportunity, will exercise their agency for change. Most importantly, development projects must aim to foster the "capacity to aspire." (Maneja, 2002, p. 32, citing Rao & Walton, 2002, p. 28). By "capacity to aspire," Rao and Walton understand the "capacity of individuals and groups to look to the future, assess risks, engage with markets, the state and other groups in the strategies that determine economic and social development paths" (p. 28).

E-Commerce/E-Retailing for Women's Empowerment: Challenges and Opportunities

In 2002, the annual UNCTAD report on *E-Commerce and Development* hailed e-commerce as a "potential goldmine" for women in the developing countries because of its great potential for women's empowerment. Women-owned or women-operated telecenters in Senegal and Morocco, phone shops in Ghana, Internet cafés in Thailand and Malaysia, and the Grameen Phone Project in Bangladesh were cited as examples of how women in developing countries can successfully exploit opportunities offered by new technologies (p. 64). Accordingly, the interest of development agencies, scholars and activists in e-commerce projects has increased significantly over the past five or six years.

As a result, the literature on e-commerce is enormous, and the overwhelming majority of scholars, activists and policymakers agree on the great potential of e-business/e-commerce/e-retailing for women's empowerment, particularly in developing countries (Morgan, Heeks & Arun, 2006; Duncombe et al., 2006; Hafkin & Taggart, 2001; Heeks, 2004;

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Huyer & Mitter, 2003; Mitter & Rowbotham, 1997; UNCTAD, 2002, 2003, 2004, 2005, 2006). At the same time, the literature is characterized by a definite focus on e-commerce in OECD countries, business models, and, surprisingly, especially regarding successful uses of ICTs by women-owned businesses, is based on anecdotal evidence and a few case studies but not on any systematic statistical evidence (Hafkin & Haggart, 2001; ITU, 2002a, 2002b; Mitter, 2005; UNCTAD, 2002, 2004).⁴ For example, only 15% of developing countries, compared with 75% of OECD countries, have collected data on barriers to e-commerce (Partnership 2005, pp. 29–30), and only 10% (!) or fewer of countries (and about the same amount of their population) collected data on the type and value of goods and services purchased over the Internet (Partnership, 2005, p. 15). Data disaggregated by gender are virtually non-existent. The reasons for this dearth of data are a lack of awareness among policymakers of the importance of statistics and limited resources and capabilities to collect and compile these data (UNCTAD, 2004).

Nonetheless, existing research on e-commerce/e-retailing allows us to identify important patterns. Early studies on B2B e-commerce (Goldstein & O'Connor, 2000; OECD, 1997) have argued that e-commerce, especially e-retailing, will only be successful if it can approximately replicate the amount of trust and confidence involved in familiar everyday business transactions, such as payment security and quality control of the purchased product, and governments are able to establish the corresponding regulatory and legal framework to make consumers and producers feel secure when using the Internet (Joseph & Narayanan, 2005). Recent UNCTAD reports have confirmed this assessment.

Several recent regional surveys in South Asia, Latin America and Africa have identified key requirements for e-commerce projects to thrive in developing countries (Orbeta, 2001, 2005; UNCTAD, 2004). While the studies have found a general positive attitude by entrepreneurs and consumers toward ICTs and a definite willingness by business owners to integrate ICTs in their business plans, they also make clear that the hurdles are significant. Specific

“make-or-break” concerns were related to connectivity problems (high costs, sparse access, low speed, and inadequate coverage), low computer security (such as encryption technologies) as well as a lack of trust in the respective country’s legal and regulatory framework necessary for e-commerce resulting from a real or perceived lack of enforceable laws on online contracts, banking laws, and security concerns regarding credit card and foreign currency transactions (Orbeta, 2001, 2005; UNCTAD 2004, p. 54; see also OECD 1997).

Several case studies also provide important insights. Singh (2005) identifies the “lessons learned” from an ongoing NGO-supported project whose goal is to empower low-income rural artisans from North and Central India. He argues that successful e-commerce/e-retailing projects of such type encourage and maintain a cooperative environment among community members, provide “revolving funds” to maintain the supply chain, provide assistance and training with regard to international shipping formalities and other supply problems, and run workshops to make artisans self-sufficient, give design input to ensure the marketability of the product and ensure and enforce quality, standardization and deadlines (p. 47). Joseph and Narayanan (2005) show that teaming up with an established NGO, in this case the Foundation for Organizational Development (FOOD), may offer significant benefits for the producers. In the project they analyzed, rural artisans and women’s cooperatives in India were able to generate for themselves a regular, significant source of income. FOOD designed an experimental Web site for the sale of the products, hired and trained e-marketers (educated but unemployed youngsters) to publicize the products provided immediate customer service and helped with shipping and payment logistics. The initial support was free and later supported through a nominal fee paid by the producers.

Mitter (2005) is generally more cautious regarding the enabling potential of ICTs. She outlines the significant obstacles faced by e-retailing/e-commerce entrepreneurs and argues that there are three main limiting factors for B2C e-commerce projects: (1) the

4. For specific information on the dearth of country data on ICT penetration and indicators, see the report by the Partnership on Measuring ICT for Development. (2005). *Measuring ICT: The global status of ICT indicators*. New York: The United Nations Information and Communication Technologies Task Force.

absence of secure payment modes and the high costs associated with non-credit card payments are particularly crucial for women's e-commerce projects which, because of the nature of their products—clothing, food and decorative items—operate on very tight profit margins, (2) the absence of regulatory frameworks in most developing countries and (3) most important, lack of consumer confidence in the quality of the goods sold over the Internet (pp. 5–6). Consequently, she considers e-B2B projects ("insourcing") as the more promising empowerment venue in the long term (pp. 5–6). She also argues that e-commerce projects that require only a small amount of capital, a low level of education or training and that can be done while doing household chores promise to be more successful (p. 7).⁵ In addition, Mitter identifies seven specific barriers that women entrepreneurs need to contend with in order to kick off and sustain e-commerce/e-retailing businesses (p. 8): (1) the mastery of Internet technologies (such as programming and design language and applications), (2) learning the "language of the Internet", i.e., English, (p. 8), (3) gaining access to capital that, at least initially, requires no collateral, such as through micro-finance and micro-credit programs, (4) the acquisition of technical and business management skills to deal with supply and delivery logistics, such as packaging and shipping the product, (5) the acquisition of "information on trade and customs regulations" (p. 8), (6) the ability to deal with technical and regulatory problems for payment over the Internet, and (7) the ability to address consumer confidence about the quality of the product.

Any successful e-commerce/e-retailing project, therefore, needs to overcome these very significant socio-cultural and structural barriers, and numerous projects have been very successful indeed. This literature review provides us with a framework for systematically developing a set of "best practices," based on our analysis of successful ICT-based projects for the empowerment of women. In the next section, we are able to effectively address the questions begged by this analysis. What are the characteristics of these successful e-commerce/e-retailing businesses? What can we learn from them?

Best Practices in E-Commerce/ E-Retailing Projects

We classify our best practices into training and empowerment of women, expanding market access and generating profit-making opportunities, government and institutional support, societal involvement, and appropriate managerial practices, based on the insights from our literature review. Under training and empowerment of women, we identify ICT and business-related training, externalities generated by successful projects and the virtuous cycle of economic independence and empowerment as key drivers. ICTs and e-commerce/e-retailing also facilitate greater and wider market access, better information, and elimination of the middleman, positively impacting the cost structure. Our study indicates that e-commerce/e-retailing projects which focus on quality, firm reputation and product diversification are also more successful. It is important to note that given the inherent biases against women-run enterprises in many societies, these qualities become especially important for such women-owned businesses. Governments and supporting institutions have an important role to play in providing the initial momentum and ongoing support for successful projects as they often provide both the necessary infrastructure and also are a large part of the women-owned business' customer base. Family support is very crucial, especially for women with small children, as it is very challenging to handle both home and business responsibilities without family support.⁶ Finally, sound managerial practices such as a participatory management style, a strong commitment to remaining in the business, good business reputation and good public relations are all key success factors for women-owned e-commerce/e-retailing businesses.

Despite the challenges faced by women in e-commerce/e-retailing and other ICT-based businesses, we have come across several projects run by women that have successfully navigated the impediments to establishing and developing e-commerce/e-retailing projects. We now analyze these projects with a view to developing a set of best practices that have served to overcome the adverse factors.

5. See also UNCTAD (2002) *E-Commerce and development report*, pp. 63–65.

6. Lack of family support is an important determinant of the drop-out rate in these projects.

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We classify our best practices into training and empowerment of women, expanding market access and generating profit-making opportunities, government and institutional support, societal involvement, and appropriate managerial practices. Brief descriptions of the cases we have analyzed are included in Appendix A.

Training and empowerment of women

Several case studies such as the Village Pay Phones (VPPs) in Bangladesh; Computer Facility at Kasargod, Kerala, India; Divine Computers of Vadakara, India; e-Seva Centres in Andhra Pradesh, India; and India Shop and Cottage Industry–Global Marketplace, India, all point to the crucial role that training plays in the success of ICT-based projects undertaken by women. Some of the key insights are as follows:

1. Successful projects have externalities (i.e., they create benefits that spill over to other entities outside the business itself). For example, the computer center in Kasargod benefited from the excellent reputation of other women-owned ICT-based businesses that were affiliated with their sponsor agency, Kudumbashree. Women own the means of production, thus reforming ownership norms and helping other women with their businesses. Women themselves are in charge of the production and are involved in distribution and sales logistics. Greater decision-making authority leads to greater knowledge, income and empowerment. In the Kasargod facility, there are 10 core women members who handle the finances, assembly and installation, marketing and service of the computers.⁷
2. All the case studies emphasize the importance of training. Women are given ICT training as well as training in management and business practices, marketing, purchasing, how to analyze the data and make good business decisions, personnel management, negotiation techniques, etc. These are skills many women traditionally do not pos-

sess, and hence the training equips them to better manage and develop their businesses.

Expanding market access and generating profit making opportunities

Another important determinant of success as evidenced in case studies such as Tortas Peru, Women Weavers in Morocco, CI-GM, Computer Facility at Kasargod, Kerala, India and Divine Computers of Vadakara, India was expanding market access to profitable business opportunities.

1. ICTs enable women to reach markets far from home and sell their goods, providing greater access to regional, national and global markets. An article in *The Guardian* describes how Elsouk, an e-commerce website set up with World Bank assistance, helps women artisans from Morocco, Egypt, Jordan, Tunisia and Lebanon sell their products abroad and even develop B2B direct relations.⁸ The Tortas Peru confectionary website set up by housewives in Peru enables women with children to work from home and earn an income.
2. Products are sold directly online thus cutting out the middleman and maximizing profits; likewise inputs are purchased directly, once again reducing costs. *The Guardian* article also describes the story of a woman weaver from Kancheepuram in India who wove beautiful sarees that she was forced to sell at a very low price to a middleman as she had no access to other markets for her products.⁹ IndiaShop posted photos of her sarees on their website and was able to procure orders for her at a very good price, thus preventing her being exploited by a middleman.¹⁰
3. Many successful projects encouraged the use of local resources and/or are focused on traditional crafts (combining them with modern technology), thus making the projects more easily accepted by the local community. It is useful to note that while our

7. They also have three male employees who handle work at distant locations that the women are uncomfortable traveling to.

8. The Guardian, "World-Wide Wealth," Dec. 12, 2002.

9. The middlemen then resold them at a much higher price in the big towns. Women in developing countries are often not allowed to/cannot travel far from their homes to sell their goods in distant markets unlike their male counterparts.

10. The Guardian, "World-Wide Wealth," Dec. 12, 2002.

focus is on best practices in women-owned businesses that are successful in empowering women, an important issue is to manage the community's fear and opposition to such projects. Hence, while starting an ICT-based/e-commerce project in an area that has not seen such projects before, it may be useful to start with projects that are more readily accepted and supported by the community. This could pave the way for a broader spectrum of projects in the future as the community sees first-hand the benefits of such women-owned businesses.

4. Firm reputation and quality of the products are also important determinants of success. This is especially important in the case of women-owned enterprises in societies that are biased against women and unsure of their ability to perform well in ICT-based operations that are essentially perceived as a male domain.
5. Gaining the trust of the customers is another important factor; again in societies with a bias against women and where women have less access to resources and facilities, this is particularly difficult. The Seva Centers case study points out that while it was initially difficult for the women there to gain the villagers' trust, they were able to do so because they transacted business in a speedy manner for those who sold their products through e-Seva.
6. The case studies also showed that reputation by way of providing an expanded range of goods and services over time created more stable and profitable businesses. The reason this is especially important as a best practice for women-owned e-commerce businesses is precisely because it is so much harder for women to develop new products and markets given that they face substantially more constraints than their male counterparts, and yet this strategy yields rich dividends. For example, the women at Technoworld Computer Center in Mallapuram in India work mainly on data entry and DTP for gov-

ernment agencies. They recognize the need to diversify their operations and client base, but they have to contend with financial and technical hurdles as well as the challenge of identifying the best direction in which to diversify.¹¹

Government and Institutional Support, Monitoring and Evaluation

Case studies such as the Computer Facility at Kasargod, Kerala, India, and e-Seva Centres in Andhra Pradesh, India, also highlight the import role of institutions and government in providing the initial impetus and the ongoing momentum for these ICT-based projects.

1. The mediating institutions provide the momentum for the project by organizing the women in small groups, identifying suitable projects, providing the training and initial networks needed to start the project and even providing some government contracts. A prime example is the development of ICT/e-commerce projects under the umbrella of Kudumbashree, a Kerala State government organization. It facilitated the formation of the women's micro-enterprise project group for the Kasargod computer facility, provided additional training on business-related topics and helped the women form suitable contacts to procure business deals.
2. The government also plays an import role in providing infrastructure such as telephones and internet access in remote areas. Some projects require financial, logistical, or technical support from local or international development organizations. Projects may also need consistent, long-term funding and assistance until they are self-sufficient.
3. The support of senior government officials also lends momentum to projects. The Seva Centres case study also noted the importance of the strong support from the District Collector, a very strong figure in the government.¹²
4. Proper monitoring, evaluation and corrective action are all key to the success of e-

11. It is important to note that male-owned businesses also face similar constraints and benefit from similar best practices. But in many societies where women have played traditional roles, it is far more challenging for women to overcome these hurdles or implement these best practices.

12. In most of the cases in India, this is most likely to be a male.

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commerce projects. The technology and business methods are unfamiliar territory to most of the women and feedback and corrective action are critical, especially during the initial stages of the business. For example, the e-Seva project case study indicted that regular monitoring and evaluation of Seva centers in terms of the number of transactions and income generated, and then implementation of corrective action where necessary, were both important determinants of the center's success.

Societal Involvement

The important role that the support of the local society plays is emphasized in case studies such as the Computer Facility at Kasargod, Kerala, India; e-Seva Centres in Andhra Pradesh, India; Women Weavers of Morocco; and Rupununi Weavers Project, Guyana.

1. Involvement of community elders and officials in projects was very important to their success. In general, those projects that did not directly challenge gender roles, social order and power distribution were more successful. Again, it is important to note that while these are the findings from the case studies, the authors are cognizant of the fact that it is not possible to empower women without redefining traditional gender roles. It is important to challenge, directly and indirectly, impediments to the empowerment of women, not only through the projects themselves but also by creating institutional and policy changes. But it is also important to avoid a power struggle and its destructive consequences as in the case of the Rupununi Weavers Project in Guyana. The phenomenal success of the women involved with this project and the respect they received threatened the position of the traditionally minded regional leaders who took over the project in a "coup." This does not mean that women should not challenge gender roles. The point we want to emphasize is the need to develop smart strategies to act as catalysts for change from within

the system, instead of direct attacks that often result in confrontation and undesirable outcomes.

2. Involvement and support from immediate family were also valuable, especially where the women had children and other household responsibilities.¹³
3. Many women also felt that utilizing profits for family care, education, medical needs, the purchase of a house, etc., highlighted the value of women's entrepreneurship and provided more support for them both at home and in the society.

Managerial Best Practices

All of the case studies highlight the importance of sound managerial practices as important determinants of successful e-commerce ventures. The key managerial best practices are discussed below.

1. A participatory and open management style is an important factor in the success of women-owned e-commerce projects. Peer group support and advice, from both women and men, are valuable in overcoming challenges and achieving success. Members at the Kasargod facility stated that their unity was a key factor in their success. At Divine Computers in Vadakara, the women reiterated this view, emphasizing collective decision making and a strong sense of togetherness in tough times as key to their success.
2. Investment in initial and supplemental training is key to providing high quality products and service and helping the staff cover tasks during each other's absences. This is particularly true in cases of women-owned e-commerce businesses where the technology and business practices are new to most of the participants.
3. Good public relations in the local community, with the government agencies and with customers helped garner new business and facilitated growth. This was especially significant for women-owned businesses and helped the women deal successfully

13. The Malappuram case indicates that one member left the group because she got married and moved away and the other was on maternity leave. It was uncertain if they would return.

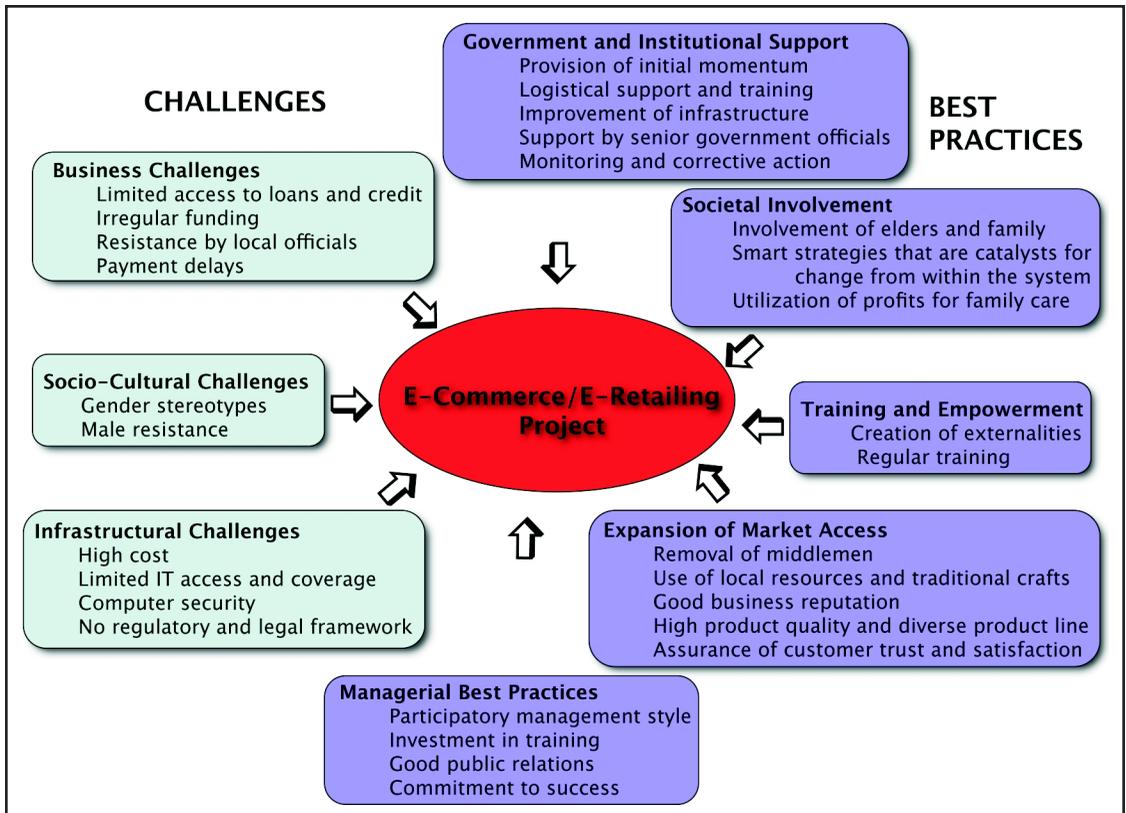


Figure 1. Challenges to and Best Practices of E-Commerce/E-Retailing.

with many of the prejudices they faced from more traditionally minded groups who felt threatened.

4. All the successful projects exhibited a strong commitment on the part of the women to stay the course and succeed despite several social, economic and other obstacles.

Conclusion

The main goal of this paper was to develop a set of best practices in the areas of ICTs and the empowerment of women through e-commerce/e-retailing. We began with a review of the existing theoretical literature regarding the main factors influencing the success of ICT-based e-commerce/e-retailing projects for women. In light of the theoretical framework, we then examined specific case studies to understand how well theory correlates with the practical realities of women-owned e-commerce/e-retailing projects, and to develop a set of best practices.

Among the best practices that empowered women are strong initial and continued training, access to necessary resources, help in expanding the market, government and societal support, good networks in the community and an open and participatory management style. Among the challenges that women in ICT-based e-commerce businesses still have yet to overcome are dependence on government contracts, societal conflicts that arise as existing power structures are threatened by the increasing economic independence of women involved in these projects and issues related to work-life balance in more traditional societies.

The best practices we have identified and discussed will serve as a useful framework for further development of ICT-based projects and also provide valuable guidance to policymakers and prospective entrepreneurs. Eliminating the need for "trial and error" significantly reduces the start-up costs, which is particularly important for women. The best practices are easily replicable and their systematic follow-

through will considerably facilitate the long-term viability and success of women-owned e-commerce/e-retailing projects.

Appendix A Examples of Successful E-Commerce Projects By Women

1. Village Pay Phones (VPPs) In Bangladesh

Bayes, von Braun, and Akhter (1999) study the case of Village Pay Phones (VPPs) in Bangladesh. The Grameen Bank of Bangladesh leased cellular mobile phones to women members. Their purpose was two-fold and implemented with two aims: the women themselves would make a living by selling services, and the villagers would benefit by buying the services. Their research indicates several ways in which this has proved useful to villagers from a developmental perspective. Approximately half of the phone calls made were for economic purposes such as obtaining market prices of commodities, employment opportunities, land-related and other business-related transactions, and remittances. The poor and nonpoor groups accounted for more or less the same proportion of economic/finance-related calls (46% and 47%, respectively).

One of the important effects of VPPs is that they reduce the volatility in demand, supply, and the prices of commodities and inputs through dissemination of useful information in a timely manner to remote villages. The researchers found that the average prices of agricultural commodities (especially rice and eggs) were higher in villages with phones than in control groups without phones. The supply of agricultural inputs such as diesel and fertilizer was also smoother and more stable in villages with phones than in control villages without phones. Access to accurate pricing and market information increased the sellers' bargaining power, enabled the sellers to identify the most profitable markets, curtailed the power of e-middlemen, and thus reduced the exorbitant marketing margins the e-middlemen once pocketed.

VPPs also facilitated development in other ways. Two main uses for the profits from this venture were savings and expenditure on children's education, clothing, and health care. They also facilitated better access to emergency medical care, dealing with other emergency situations such as natural disasters,

livestock emergencies, and even secured better rates for foreign exchange transactions.

The following three (numbers 2–4) case studies regarding the impact of ICT in India are from the "Women's ICT-Based Enterprise for Development" project at the University of Manchester's Institute for Development Policy and Management. They offer useful insights into the ways in which the introduction of ICT has impacted the lives of women in India as well as the difficulties and challenges that arise because of the gender biases and culture.

2. Computer Facility at Kasargod, Kerala, India

The computer microenterprise at Kasargod was facilitated by Kudumbashree—Kerala State's poverty eradication agency. It initiated the efforts to form a group suitable for the microenterprise by linking with local women below the poverty line who were a part of a desktop publishing (DTP) course. The facility has 10 women employees including the group leader and the secretary, all in their twenties, and three male employees. The main activities of the unit are PC assembly and installation, service and sales, computer training, and data entry operations. The unit uses one landline telephone, two mobiles, one PC and printer, an Internet connection, and software, including Windows98, Windows XP, Linux, Office XP, Script Easy (Malayalam software), PageMaker, Photoshop, and Corel Draw and has uninterrupted power supply.

This facility has helped the women employed here in several ways. Their knowledge of IT has increased substantially given the training they have undergone and their on-the-job experiences. Their participation in various district- and state-level events exposed them to business opportunities, helped them make connections, and led to business deals. All this has increased their self-confidence and communication skills, as well as their professional networks and travel opportunities, thus expanding the spectrum of opportunities available to them. They are able to support their families financially, help with the education of siblings and home loans, and facilitate banking and other financial transactions. This enterprise was facilitated by Kudumbashree—Kerala State's poverty eradication agency and benefited from the reputation of women's IT enterprises run under its supervision. The unit's success was also facilitated by the availability of a steady stream of customers including lo-

cal governments in five Northern districts of Kerala State, the nearby municipal government, schools, banks, shops, DTP centers, and individuals (Planet Kerala, Research Consultants).¹⁴

3. Women Providing Online Services: e-Seva Centres in Andhra Pradesh, India

The e-Seva Centres are staffed and run by women. They provide a wide range of services including bill payments, issuance of land/birth certificates, Internet browsing, telemedicine and tele-agriculture, access to online auctions, the filing of complaints and grievances, and matrimonial services. The actual number of computers at each e-Seva Centre varies from place to place based on local needs. In a small village an e-Seva Centre will operate with one computer, a scanner, Xerox machine, digital camera, and printer. In a town there would be more computers and provision of Web cams, for example. Each center has an Internet connection—in villages they use dial-up; in towns they use a leased line connection.

The women who are a part of this project have benefited in many ways. They are able to find local employment and increase their income significantly. On average, each woman is earning US\$45 per month. In addition, they also receive substantial training and development opportunities, and they are able to provide valuable services that benefit their rural communities. All this has increased their own self-respect and the regard and respect for them in their communities.¹⁵

4. Delivering IT @ School: Divine Computers of Vadakara, India

The IT @ School Programme, launched by the government in Kerala State, India, to deliver computer education to school students at subsidized rates, was the motivation behind Divine Computers at Azhiyur Secondary School in Vadakara. Divine Computers is run by a team of six women (all previously below the poverty line) who provide computer training to school students as well as short courses to the students and local citizens in the summer. The benefits for the women are numerous: they feel valued, respected, and satisfied in their roles as teachers; their average monthly payment of US\$22 each has enabled them to better support their families

and develop a sense of personal self-reliance; and they have enjoyed greater personal freedom, travel, and networking opportunities in addition to greater self-confidence and self-esteem. This is also another Kudumbashree success story, as the effort was also facilitated through this agency.¹⁶

5. India Shop

India Shop is a successful online shop that sells indigenous products such as sarees, leather goods, sculptures, and other handicrafts made by rural artisans and women cooperatives in Tamil Nadu. Promoted by FOOD (the Foundation of Occupational Development), a 20-year-old nonprofit organization based in Chennai that seeks to encourage economic empowerment of the rural and urban poor, India Shop enables rural artisan women to directly market their products to local, regional, and global customers, thus cutting out the middleman and ensuring higher profits. According to the final report by FOOD, the project, in the past 6 months, drew an average of 8,000 visitors per month to its Web site, and the women cooperatives earned a profit of about 75,000Rp.

This project was so successful that the Council for Advancement of People's Action and Rural Technology (CAPART), a division of the Government of India, supported it for an additional 3 years. Additionally, India Shop also provides other job opportunities. For instance, it is currently hiring through its Web site 1,000 telecommuters to sell India Shop products online from home, full- or part-time.¹⁷

6. Women Weavers in Morocco

Set up by anthropologist, United Nations and World Bank consultant, and former Peace Corps member Susan Schaefer Davis, this project enables women weavers from rural Moroccan villages to sell handmade rugs without the middleman, thus maximizing their profits. About 50, mostly Berber, women of all ages participate in the project and determine their own prices for the rugs, pillows, and wall hangings in traditional local designs. Prices range from US\$100 to \$750 for new and US\$500 to \$5,000 for vintage rugs, not including shipping and handling and a small contribution to a village association project in N'kob. More than 100 orders have come in,

14. See <http://www.womenicnterprise.org/kasargod.htm>

15. See <http://www.womenicnterprise.org/eseva.htm>

16. See <http://www.womenicnterprise.org/vadakara.htm>

17. See <http://www.xlweb.com/indiashop/> and <http://foodindia.org.in/projects.html>

and sales pay for medical expenses, school fees, books, clothes, and visits to relatives. The Web site, which is run pro bono by Schaefer Davis, features pictures of the rugs and short biographical sketches of the women.¹⁸ (See also the article on this project by Susan Schaefer Davis in this special issue).

7. Tortas Peru

Tortas Peru is an innovative women-owned enterprise that enables women to earn an income while working from the home by baking cakes. Founded, run, and designed by Lima homemaker Maria del Carmen Vucetich, Tortas Peru gives the more than 2 million Peruvian expatriates the opportunity to order cakes (which cost an average US\$20) online, which are then baked by one of the women in the group of "homebakers" and delivered to their loved ones anywhere within Peru. This project enables women who might be reluctant or prohibited to work outside the home while raising children to earn their own income and get comfortable with a new technology. It is a doubly attractive job opportunity for women, especially those with few marketable job skills, because by just baking two or three cakes a day, a woman can already earn twice the minimum wage in Peru of US\$125 a month. The enterprise is expanding and the Web site actively encourages women to become "house entrepreneurs."¹⁹

8. Cottage Industry—Global Marketplace (CIGM)

This project was begun in 2000 by the Communication, Culture and Technology (CCT) program at Georgetown University, with US\$90,000 funding from the World Bank, and involved about five dozen women in the district of Kangra in Northern India. The project goal was the economic empowerment of local women who used their artistic skills to produce hand-woven shawls and sell them online for about US\$50 to \$60, mostly to American and European customers. In India, they would receive about US\$2 per scarf. This project has empowered the women of Kangra in numerous significant ways: they developed more self-esteem and self-respect and acquired valuable and marketable skills because they had learned how to use computers. Despite

some obstacles, the women weavers enthusiastically participate in the project. The main problems reported were picky American customers who were disappointed with the natural irregularities in the fabrics and dyes. Additionally, several hours of daily household and child-rearing chores still rest almost exclusively on the shoulders of the women of Kangar (Bhatt, 2001).

9. Rupununi Weaver's Society in Guyana

The Rupununi Weavers Society, numbering 300 members at its peak, was founded in 1991 by two indigenous women from the Wapishana and Macushi tribes in Southern Guyana. The women joined forces to make a living for themselves and families from the ancient art of hammock weaving from locally grown cotton. With the financial and logistical support of the Guyana Telephone and Communications Society—which supplied the technology, hardware, and training—the women hired a Web designer to take their wares global, and in 1999, they sold 17 hammocks for as much as US\$1,000 per item. However, their phenomenal success and the respect they received threatened the position of the traditional-minded regional leaders who took over the Society in a "coup." The Weaver's Society has struggled to stay afloat since.²⁰

10. TechnoWorld Computer Centre, Malappuram, India

TechnoWorld was started with 10 members (now reduced to seven) drawn from various women's neighborhood self-help groups (NHGs) in Malappuram under an enterprise scheme of Kudumbashree: Kerala State's agency for poverty alleviation.²¹ Since none of the 10 members had any background in computers, they received substantial training. With bank loans and some personal contributions, they purchased five computers. Most of their work involves data entry and DTP for various government departments, and these contracts are mainly provided through Kudumbashree.

The enterprise uses one landline phone, one mobile, 10 PCs that were paid for from the profits of the enterprise, and one Internet connection. Software includes SQL Server, Windows 2000,

18. See <http://d2ssd.com/www-source/weaversoverview.html>

19. See <http://www.tortasperu.com.pe/tortasperu/ingles/indexi.php>

20. See www.gol.net.gy/rweavers

21. The three who left did so due to illness, moving away, and being unable to meet the loan repayments. One other is on leave after her marriage and has moved houses, and another is on maternity leave. It is uncertain if they will return.

VisualBasic, Crystal Report, MS Office, and PageMaker. In 2004, the total sales volume of US\$9,500 was mainly generated through data entry contracts with four government departments and minor data entry jobs for the public. It appears that the group had more work than in previous years and this suggests a higher income.

The main factors for their success were the unity of the group members, a supportive work environment, their inner drive to grow and succeed, support they received from Kudumbashree in terms of getting work orders and receiving training, and support from their families. The main benefits for the women included tremendous growth in their confidence and a decrease in their anxiety, a wider social network, greater income, and the consequent ability to help family members, support their husbands' earnings, start their own savings, and manage their personal life with their own money. The main challenges the women face include undue delays in getting paid by government departments for their work, the need to diversify their business, financial constraints to diversifying, and the lack of toilet facilities in the complex where their office is located.²² ■

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