

Role of Women in Corporate World: Journey from Kitchen to Cosmos

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Abstract- Today, technology is the buzzword of the 21st century for young and dynamic building generation. Use of technology for skill development can lead to lower costs, higher quality, and greater reach, while reducing the burden on physical infrastructure. Learning by doing is the new mantra for vocational education and skill development in Technical Education of India.

Technology defines our era. In the past few decades, numerous innovations including ever-shrinking computers, mobile phones, automobiles and alternative energies have been introduced in homes and workplaces, changing the way we live, how we work, and what we are able to do. Technology Can Advance Women Economically, also technology is essential to women's economic advancement and clarifies how it puts the process in motion by showcasing technologies that have helped women in developing countries to increase their productivity, create new entrepreneurial ventures, or otherwise access new income-generating pursuits. Women Empowerment and Security through technology is our main motive here.

I. INTRODUCTION

This paper deals with what it takes to enable women to increase their resources and economic opportunities, and strengthen their ability to compete in market economies. Most important, it speaks to the growing number of factors driving innovation from the public, private, and social sectors with practical recommendations on how to improve the way technologies are developed and deployed so they benefit women and enable them to be more successful economic actors, stronger leaders, and greater contributors to their families, communities, and domestic economies.

This paper looks at ways technology has facilitated the economic advancement of poorer women in developing countries and explores what needs to happen to trigger wider economic advancement. The paper begins by introducing a conceptual framework that shows how integrating the needs of women to the technology development lifecycle can trigger a chain of events that leads to economic advancement and, eventually, to wider social and economic benefits. Next, it

uses data from a literature review, in-depth case studies, and interviews with experts in the field to examine the lessons of technologies introduced in the past and discusses the common characteristics and effective strategies of successful initiatives.

It closes with specific recommendations on better ways to develop, introduce, and disseminate technologies—both new and already existing—that could help low- and middle-income women worldwide, particularly in developing countries, to advance economically. While the paper and the recommendations focus on the level of technology initiatives, the conclusion also includes an overview of complementary policy-level recommendations.

II. WHY WOMEN'S ECONOMIC ADVANCEMENT MATTERS

The potential to advance women economically may be the most exciting transformative feature of technology. Empowering women and improving the efficiency of their work is critical for reducing poverty. Mounting evidence confirms that women's improved economic status produces many positive economic and welfare outcomes for children, families, and societies:

Countries with less inequality in men's and women's employment and education benefit from lower child mortality, as well as more transparent businesses and faster economic growth.

1. Women's ability to access income, technology, and paid work improves their children's welfare more than men's access to similar resources.

2. A mother's social and economic status is considered one of the best indicators of whether her children will complete their education and enjoy healthy, poverty-free adulthoods.

3. Increases in household income, particularly income controlled by women, correlate with a boost in children's nutrition and survival.

4. Women with higher earning potential and education tend to vaccinate their children at roughly twice the rate of women with lower education and earning potential.

5. Globally, children whose mothers enjoy higher earning potential and education go on to complete more education than children whose mothers have less schooling.

III. WHY TECHNOLOGY MATTERS

Technology also is an engine for economic growth. Technological capability is one of the five categories for the Growth Environment Scores (GES), Goldman Sachs' composite indicator of the economic growth environment in 181 countries. A GES study of countries in the Persian Gulf

shows that technology is so critical to growth and economic well-being, that if lags in technology use were addressed, along with low levels of investment and human resource development, the region could effectively close its income gap with the G-7 countries by 2050.

Strong links also have been made between use of specific technologies and growth. For example, evidence indicates that economic growth in Malaysia and Thailand between 1995 and 2000 would have been negative without investments in information and communication technology (ICT). It is also estimated that an increase of 10 mobile phones per 100 people boosts GDP growth by 0.6 percent.

IV. THE GENDER AND TECHNOLOGY DIVIDE

Improving women's access to technology has the potential to spur their economic advancement and stimulate broader economic growth. Regrettably, technology has been underused in unlocking women's economic opportunities. The gender divide is evident in both traditional and modern technologies. Despite the fact that most low-income women in developing countries are primarily employed in agriculture, a large literature shows that men have been the primary adopters and shapers of agricultural technologies in developing countries, and agricultural innovations have been designed specifically for men's use. Animal-drawn ploughs, for instance, were developed to pursue men's work in clearing farmland, and are too heavy for women to push or have handles that women can't reach. As a result, women continue to use traditional, more labor-intensive methods, undermining their agricultural productivity. Women in developing countries also are deprived of the basic benefits of technology, such as efficient household energy for cooking, heating, and lighting, as well as for home-based agricultural and industrial activities. The rural poor, the majority of whom are women, largely only have access to fuels that are inefficient in converting to energy. Thus, poor rural women disproportionately lack access to clean, efficient, reliable, safe, and affordable energy service options. Disparities notwithstanding, the global economy and its accompanying rapid technological innovations create a tremendous opportunity to bridge the gender and technology divide and leverage the benefits of technology to propel the economic advancement of lower and middle income women in developing countries.

V. WOMEN'S ECONOMIC ADVANCEMENT

A. Economic decision-making

Women have the power to make and act on economic decisions.

B. Economic efficacy and self-confidence

women have a personal sense of worth and the ability to perform in the economic sphere.

C. Access to economic resources

Assets: women have income, property, savings, and financial capital to work productively and foster well-being.

Capacity: women have the education and skills to get jobs or prosper in business.

Opportunity: women have access to credit, property, financial, labor, and commercial markets.

Environment: women have legal and social environments that support their economic participation and success.

VI. BARRIERS AND WAYS TO OVERCOME THEM

A. Exclusion from technology education and design

Not only do men overwhelmingly constitute the users of diverse types of technologies worldwide, but they also dominate the innovation process as developers, creators, and designers. Women are often seen only as "users" or "receivers" of technology, not as innovators, and are underrepresented in higher education programs in science, technology, and engineering. This is partly because women don't have the basic educational foundation for a successful scientific career. Although global gender inequalities in primary and secondary education attendance as a whole have shrunk in recent years, women still make up the majority of the illiterate worldwide. And many women in developing countries lack the education and skills to access and effectively use technologies, much less build a career around them.

B. Little free time.

Across developing countries, women bear a disproportionate burden of household and family responsibilities, such as cooking, cleaning, and fetching fuel or water, as well as child and elder care. These tasks are time- and labor-intensive, leading rural women in some areas to spend from 1 to 5 hours a day gathering biomass for fuel and about 1.6 hours a day just collecting water in the dry season. This heavy burden of unpaid household responsibilities often leads to "time poverty," the absence of discretionary time women can dedicate to personal interests, paid labor, education, or other endeavors. Among those endeavors is learning skills that would allow them to adopt new technologies to improve their productivity or start a small business.

C. Social norms favoring men

Throughout the world, technologies are often considered to be within the purview of men. Gender norms about men's control of technology, information, and knowledge limit women's opportunities to learn, use, and benefit from technologies. At home, husbands might regulate the family radio, mobile phone, or television, controlling when and how other family members use them. At work, men may determine that operating a plow or a computer is not something women should be allowed to learn. Even technology programs that target women can be co-opted by men once their utility and profitability are established—so women who do gain access to a technology do not see the economic benefits associated with it.

D. Financial and institutional constraints.

Women tend to lack the financial resources to use, rent, or purchase established and new technologies. For example, telemeters often provide the only Internet or computer access available in a community but charge a fee that few lower income women can afford. One of the main reasons women lack access to capital is that laws, policies, and social customs often favor men's ownership of assets. Inheritance laws and social customs in many developing countries prohibit women from owning property, limiting their ability to take out loans that require collateral for large technology purchases. So, would-be women entrepreneurs cannot set up their small businesses. Nor can they buy computers or mechanical equipment that would aid in their work or allow them to train others. This inability to borrow leads to a vicious circle: women cannot develop their skills, which prevents them from earning higher incomes, so they cannot afford the technologies that might boost them to the next rung on the economic ladder. These barriers, though formidable, are surmountable. Indeed, our research shows that technologies supporting women's economic advancement often do so by addressing (directly or indirectly) one or more barriers in a way that creates an enabling environment for women to access and use technology. How does technology help women advance economically? The conceptual framework in figure (1) shows the major pathways for technology to increase women's ability to participate in economic activity, facilitate their economic advancement, and in time bestow significant social and economic benefits. Based on findings from literature on women's advancement and technological innovations affecting women, this framework provides a theoretical grounding for why and how technology might be connected to women's economic advancement. The examples of technologies and their impacts on women, discussed in the rest of the paper, test these theoretical connections.

When women are involved in the development and deployment lifecycle of a particular technology, a positive chain reaction is initiated. Women are considered and directly consulted at critical milestones marking the path from

conception to deployment in the field. Women's needs are taken into account at the design phase, and the product is customized accordingly. Special efforts provide women with access to the technology, such as distributing it in the home rather than at a marketplace to which some women may have difficulty traveling. Microloans make it easier for women to buy the technology. And training programs show women how to use and repair the technology to sustain its use.

FIGURE 2: How technology can facilitate the economic advancement of women

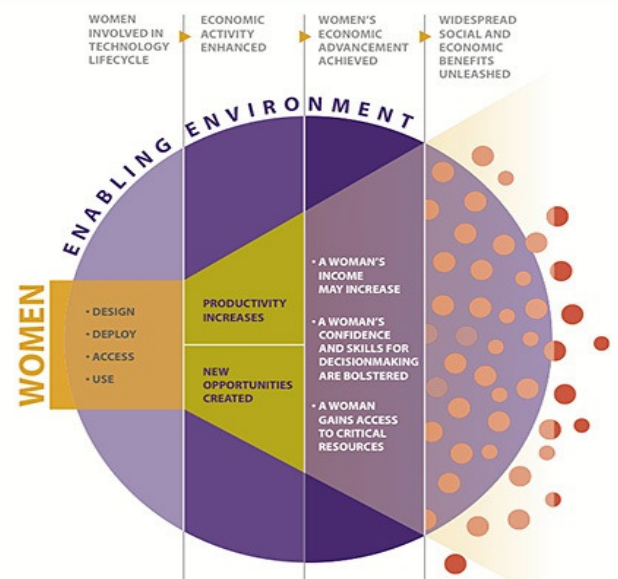


figure (1) How technology can facilitate the economic advancement of women.

Assuming this involvement takes place, women are able to use a given piece of technology in a way that enhances their economic activity either improving their productivity in a position already held or creating new positions and entrepreneurial opportunities. These developments trigger the hallmarks of women's economic advancement: more income is directed to women; their economic decision-making and efficacy at home and in the workplace improves; and they gain access to other assets and financial resources that increase their ability to care for themselves. Having advanced economically, women then use their newfound resources to confer broad social benefits such as better health and education for their children by improving the economic conditions for a community.

First, incorporating women into the technology development lifecycle ensures that they get access to the technology. Second, women advance economically when they use the technology and leverage its advantages in their everyday lives. In the next section, we profile several technologies, demonstrating how they successfully facilitated the paths to economic advancement outlined in the conceptual framework. The profiles examine the social and institutional barriers each technology had to overcome to create the enabling

environment for women's economic advancement, laying the ground for the chain reaction.

VII. WHAT MAKES A TECHNOLOGY HELP WOMEN ADVANCE ECONOMICALLY?

A review of the literature on technologies used by women in the developing world yielded two critical findings. First, fact-based information about the impact of technology on women is scarce. But second, some promising success stories can be assembled and analyzed to draw broad observations about what enables some technologies to be embraced and applied by women in a manner that advances them economically.

- A. Nine technologies captured our attention. The process to develop and deploy them integrated women in ways that recognized them as more than end users. And the results available indicated that applying the technology enabled female users to increase productivity, pursue new entrepreneurial opportunities or skills, or otherwise improve their economic opportunities. Successful technology examples clustered in the energy and ICT sectors, reflecting recent trends in innovation and the great need for energy and information in developing countries. Modest innovations in these sectors make significant contributions to women's economic advancement because they have the potential to benefit all women and often have advantages for their families and communities as well: Improved fuel-efficient cook stoves, such as the Upesi stove in Kenya, reduced the time rural women spend on household cooking tasks.
- B. Motorized scooters provided large numbers of urban women in countries such as China, India, Malaysia, and Thailand with a safer and more reliable mode of transportation, making it easier for them to access employment and educational opportunities.
- C. Alternative household power (aka multifunctional platforms), which uses diesel engines to power food processing and carpentry tools, increased the productivity of women's domestic and income-generating activity.
- D. ICT educational academies, such as those promoted by Cisco Systems and UNIFEM in the Middle East, trained women in technical and career skills to enter and compete in the high-skilled ICT labor force.
- E. Treadle water pumps enabled women farmers to irrigate small plots from underground or surface water sources and, in turn, to increase their harvests and incomes.
- F. Solar dryers to process fruits and vegetables, such as those used by rural women's groups in Uganda,

increased the efficiency of processing dried fruits for export.

- G. Village mobile phones facilitated women's roles as entrepreneurs who operate businesses that require communications services or who even own the pay phone center serving a community.
- H. Outsourced ICT services in Asian countries such as India, China, and the Philippines generated many new employment opportunities for women.

VIII. LIFECYCLE OF SUCCESSFUL TECHNOLOGIES

An in-depth look at successful cases of technology intervention for women's economic advancement reveals one common strategy employed: Each involved women in at least one (and often more) of the eight phases in the technology development and deployment lifecycle thereby ensuring women's greater access to and use of the technology . Besides considering women's needs at a particular phase in the technology lifecycle, in most cases these initiatives actively engaged women in the process, resolving the specific issues related to that phase. They thus helped create the conditions for women to become part of the solution to their problems. The phases of the technology lifecycle include:

- Identifying the problem the technology will help solve.
- Designing the technology to meet the needs of potential users.
- Researching the market to test and increase use by target populations.
- Introducing mechanisms to address barriers to access.
- Training users to operate, repair, and maintain the technology.
- Supplying and distributing the technology to ensure access.
- Creating and maintaining market linkages for women's technology-generated goods and services.
- Assessing and evaluating the entire process to gauge and strengthen each phase of technology development.

IX. RECOMMENDATIONS FOR ACTION

Technologies can promote women's economic advancement by improving the productivity and quality of women's work and generating new employment opportunities. But the countries that most need the benefits of technology often lack the financial and human resources to create the environments needed to foster new technologies. Furthermore, the development of a new technology is only the first in a series of steps that must be fine-tuned if a given technology is to be the key that unlocks the economic potential of women. Many existing technologies had the potential to benefit women but, for a host of reasons, were never embraced or adopted. Thus, developing and distributing technologies that

meet women's needs must focus on key steps of the process that carry the technology from conception through use and widespread adoption in the field. Particular attention should also be paid to existing technologies that haven't been adapted or distributed to the full benefit of women. Later phases of the lifecycle can help guide the revamping, reintroduction, and deployment of an existing technology. But to avoid such problems, innovators should first ask critical questions about needs, barriers, markets, training, and assessment at the earliest phases of research and development to ensure a technology will aid women in developing countries.

External stakeholders the private sector, multilaterals, bilateral, and NGOs that partner with innovators to develop a technology can create the environment where these questions are asked and ideas are tested in a way that changes how technologies are brought to market.

X. WHAT TO DO

A. ENGAGE WOMEN THROUGHOUT THE DESIGN AND DEPLOYMENT PROCESS

Too often, women are taken into account only when marketers want to sell to them. Early engagement in focus groups can often help innovators identify the broad problems that technology can solve and the best ways to customize it for women's use. Once a technology is developed, women can be critical voices about how to position and distribute a product as well as essential endorsers in a community grappling with whether to embrace or reject something new. Because women are particularly well-placed to identify solutions for their own problems, engaging them at key points throughout the design and implementation process ensures the technology will be used and will create results meaningful to businesses as well as to individual women. And for the most effective results, wherever possible women should be actively leading the effort to design and deploy technologies to meet their needs—as technology innovators, designers, developers, and distributors, as well as advisers.

B. FOCUS ON SECTORS LIKELY TO CONVEY RAPID AND SIGNIFICANT BENEFITS.

ICT and energy technologies can address immediate issues affecting women and communities, making it easier for women to gain support for accessing them. For example, an alternative household power source (the multifunctional platform) provides energy that lengthens the productive day for all members of the home where it is installed, not just the women who live there. ICTs, including mobile phones and computers with Internet connections, have allowed women to develop new careers as village phone owners while also giving communities access to these services. Focusing on these two sectors—while also listening for great ideas in sectors with innovative potential or already renowned for their gender impact—would direct technology development efforts in a

way that could be particularly beneficial for women in developing countries. We never know where the next groundbreaking idea will come from, but rather than diffusing investments across many sectors, concentrating in a few sectors may produce synergies and collaborations that otherwise would not occur.

C. REACH FOR PARTNERS WITH COMPLEMENTARY CAPABILITIES

Different sectors have different strengths and weaknesses. Many NGOs have access to lower- and middle-income women that the private sector lacks, whereas the private sector has the experience of creating markets for products that might be necessary for a technology solution to become sustainable. By building partnerships across organizations with complementary skills, innovators and implementers of technology initiatives can strengthen the viability of a technology.

D. INVEST IN TRAINING THAT IS OBVIOUSLY NEEDED

It is not enough to introduce a technology and expect women to use it—they need to be trained in how to use it and reap its many benefits. When developing training programs, a number of practical factors need to be considered: Could it be conducted at home or during "off hours" when women might be most able to attend? If a training center is involved, is it in a neighborhood women will feel comfortable traveling to? There also are downstream training needs to consider. For example, like the Village Phone model, if a technology will give women the ability to create a business, then consider the skills they will need to develop a successful one. Although an accounting class might seem to have nothing to do with pay phones, it might very well be the critical skill a woman needs to manage her business, strengthening her entrepreneurial capabilities.

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