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Why women innovators need to save India, and the world

Silicon Valley is blind to gender equality but Indian IT needn't be, especially with the rise in number of female IT students over the years.

Vivek Wadhwa

Silicon Valley surprised me when I first moved there. I had been researching the success of Indians and concluded that it must be the perfect meritocracy. My research teams at Duke, UC-Berkeley, and Harvard had documented that 52 per cent of Silicon Valley's start-ups were founded by immigrants with Indian entrepreneurs founding more start-ups than the four immigrant groups from Britain, China, Taiwan and Japan combined. Despite constituting only six per cent of its working population, Indians started about 15 per cent of its companies. Given the disadvantages immigrants have in education and back- ground, this is quite a feat. So Silicon Valley must be a model for the rest of the world, I thought.

It was eye-opening to be at a technology conference hosted by the popular blog TechCrunch and note how the only women on stage were staff and a circus performer. Of the more than 100 companies featured, there was not one led by a woman. The audience was mostly young white males. Yes, there were a few Indian and Chinese-but these were just the westernised nerds. When I researched the executive teams of leading technology companies, I found almost no women. The entire management team of Apple didn't have a single woman. Virtually all of Silicon Valley's investment firms were maledominated. The few women found on their websites were either in marketing or human resources. Venture Capital firms, or VCs, were the worst offenders- of the 89 VCs on the 2009 TheFunded.com list of top VCs, only one was a woman.

The bigger surprise to me was the backlash that I experienced when I wrote about this. In a February 2010 blog for TechCrunch I wrote, "Silicon Valley: You and Some of Your VCs have a Gender Problem". I was surprised at the intensity of the response I received in a barrage of hate mail, immature online chatter, and personal attacks on me over Twitter. I was further stunned to receive emails from highly respected VCs-who I used to call my friends. One asked what my "agenda" was in bringing up an issue like this. Another warned "this was not the way to achieve success in the Valley". Another asked if I was "trying to get laid" and suggested there were "better ways". Some of these VCs were famous Indians that you read about in the press. Sexism doesn't have national or racial boundaries.

I have since researched the differences in backgrounds between men and women entrepreneurs. To put it simply, there are none. Men and women have almost the same motivations and success factors. Women do have many advantages over men, however. To start with, firms founded by women are more capital-efficient than those founded by men. Women-led high-tech start-ups have lower failure rates. Venture-backed companies run by a woman have annual revenues 12 per cent higher than those by men; and organisations that are the most inclusive of women in top management positions achieve a 35 per cent higher return on equity and 34 per cent higher total return to shareholders. Companies with the highest proportions of women board directors also outperform those with the lowest proportions by 53 per cent. They have a 42 per cent higher return on sales and 66 per cent higher

return on invested capital.

Silicon Valley is reforming itself. There is outrage at the sexism that is coming to light; solutions are being discussed and implemented; women are beginning to help each other; and the venture-capital system is looking at itself critically and mending its ways. After researching this problem, I decided to crowd-create a book about the challenges that women have faced and how they are surmounting them. To my delight, more than 500 offered to help and worked with me on this project- including dozens from India. This book, Innovating Women, which will be released in September, tells the story of these women and shares the secrets of their successes. Indian industry needs to learn from these women. The majority of publicly traded Indian companies, including those in IT, have no women on their boards.

Overall, women hold barely five per cent of board seats in India, in comparison with 17 per cent in the US. Executive management is equally bad. Infosys, Wipro, TCS, Tech Mahindra and the others hardly have any women executives. This is a big loss for them, particularly in this new era of computing. With the advent of tablets, apps, and cloud computing, users of IT have direct access to better technology than their IT departments can provide them. They can download cheap, elegant, and powerful apps on their iPads that make their corporate systems look primitive. These modern-day apps don't require internal teams of people doing software development and maintenance-they are user-customisable and can be built by anyone with basic programming skills. That is why the customer base-the CIO and IT depart- ment-of India's outsources is in decline-and so are they.

There are many other advances happening that is changing the entire technology landscape, creating new trillion-dollar opportunities, and setting the stage to solve humanity's problems. Several technologies, such as computing, medicine, artificial intelligence, 3D printing, robotics and sensors are advancing exponentially while their prices drop. Inexpensive sensors can, for example, be used to monitor soil humidity, optimise watering, and build on-farm diagnostic systems that minimise the amount of harmful chemicals used. These can revolutionise agriculture. Other types of sensors can monitor human health and test for disease. Computer apps can combine health data with genomic data to understand the correlation between our genome, habits and disease, and to develop holistic treatments. They can design robotic assistants to help care for the elderly and build tutors to educate the hundreds of millions of children who don't have access to schools. Robots can automate manufacturing and 3D printers can make it possible to produce sophisticated products anywhere.

In building these technologies, education is important and knowledge of more than one discipline provides a big advantage. There are more women now than men studying many areas of science and women have broader education and interests than do the boys in Silicon Valley. If you combine a crossdisciplinary education with woman's empathy and a desire to do good, you have a powerful combination. That's why women are best positioned to solve humanity's grand challenges-and to save the world. And that is why it is important to teach and inspire them.

There's good news in the ranks of Indian engineers and this gives the country a long-term advantage. Whereas the proportion of women studying computer science fell from 37 per cent in 1987 to 17 per cent in 2012 in the US, India's numbers for female IT students are increasing. According to NASSCOM, women represent 24-32 per cent of employees in various businesses in IT, 34-42 per cent of employees in business process management (BPM) services and 38-40 per cent of entrylevel recruits.

India's best hope to dominate the future of technology and to build the next $100 billion industry is to enable its women to take their rightful role in the innovation economy.

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