## How Can More Women-Owned Technology Businesses Get Funding?

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**N**O ONE DENIES THAT there are not enough women in technology, but so far the reasons for this gender imbalance remain elusive. One Australian study<sup>1</sup> found that of the three theories—essentialist, social construction, and individual differences—there was the most support for the essentialist theory, that this is a characteristic of women not dependent on context. A German study<sup>2</sup> corroborates this evidence, but finds that while there is a definite gender gap in technology business owners, a firm's success is independent of the gender of its leaders.

While some researchers say women's more limited involvement in the commercialization of science and technology can hold back innovation, others call into question using a measure of women's patenting activities as a true measure of their research efforts and the impact of their work.<sup>3</sup> Other researchers have concluded, "We find no significant gender differences in the likelihood of reporting inventions or successfully commercializing them."<sup>4</sup>

In the United States, a 2011 study of National Institutes of Health Phase II Small Business Innovation and Research (SBIR) grants found that women-owned businesses were as much as 16% less likely to attract private investment dollars compared to businesses owned by men, factors excluding the size of the SBIR award held constant.<sup>5</sup> However, a 2009 study found no differences in the average rate of commercialization among companies that were owned by women and/or minorities than were owned by men and/or non-minorities.<sup>6</sup>

Regardless of divergent views on the subject, the European Union (EU) is taking steps to encourage more women to choose technology careers and to fund their technologyrelated businesses:

- At the national level, a guiding principle across the EU is the Digital Agenda for Europe,<sup>7</sup> which supports research such as Key Action 11, featuring "higher participation of young women and women returners in the ICT [Information and Communications Technology] workforce through support for web-based training resources, game based eLearning and social networking."
- At the organizational level, a model of Women Resource Centres developed in Sweden and promoted throughout Europe "serves as an example of how creativity in the organization of joint action networks can make new knowledge and innovation prosper." This goes beyond the triple helix model (academia,

industry, and government) in its potential to acknowledge alternative creative environments.<sup>8</sup>

• Finally, at the individual level, the annual EU Prize for Women Innovators will be awarded in March 2014. With a top prize of €100,000, this prize attracts women founders or co-founders of EU businesses that have survived the 3-year mark. The funding helps develop a marketable, scientific product or service of economic and social importance to Europe.<sup>9</sup>

Beyond winning a prize, how can women business owners attract more venture capital? One way is to get on the boards of start-ups. A recent Reuters survey of the top 10 technology start-ups showed that 60% had no women on their board of directors. And it's good for business to have women on your board. A study by Credit Suisse Research Institute found that over 6 years, the share price of large-cap companies with at least one woman on the board outperformed companies with no women on their boards by 26%; for small and mid-cap companies, the figure was 17%.<sup>10</sup>

Megan Quinn, an investment partner at Kleiner Perkins, a venture capital firm that made early investments in companies such as Google and Amazon, says, "What is important to me is that we put more women in leadership roles in VC and technology so that the next generation can see these opportunities as an option for themselves. We all need to have people we can aspire to be like."<sup>11</sup>

## References

- 1. Ridley G, Young J. Theoretical approaches to gender and IT: examining some Australian evidence. Information Systems Journal 2012; 22:355–373.
- 2. Dautzenberg K. Gender differences of business owners in technology-based firms. International Journal of Gender & Entrepreneurship 2012; 4:79–98.
- 3. de Melo-Martín I. Patenting and the gender gap: should women be encouraged to patent more? Science & Engineering Ethics 2013; 19:491–504.
- 4. Colyvas JA, Snellman K, Bercovitz J, et al. Disentangling effort and performance: a renewed look at gender differences in commercializing medical school research. The Journal of Technology Transfer 2012; 37:478–489.
- 5. Gicheva D, Link AN. Leveraging entrepreneurship through private investments: does gender matter? Small Business Economics 2013; 40:199–210.
- Link AN, Ruhm CJ. Bringing science to market: commercializing from NIH SBIR awards. Economics of Innovation & New Technology 2009; 18:381–402.

- EUR-Lex. (2010) A digital agenda for Europe. http://eur-lex .europa.eu/LexUriServ/LexUriServ.do?uri = CELEX:52010 DC0245R%2801%29:EN:NOT (accessed Dec. 8, 2013).
- Lindberg M, Danilda I, Torstensson B-M. Women resource centres—a creative knowledge environment of quadruple helix. Journal of the Knowledge Economy 2012; 3:36–52.
- 9. European Commission. (2013) EU prize for women innovators. http://ec.europa.eu/research/innovation-union/index\_en .cfm?section=women-innovators (accessed Dec. 11, 2013).
- Reuters. (2013) Tech still a man's world. http://www.itweb .co.za/index.php?option=com\_content&view=article&id= 69605:Tech-still-a-man-s-world (accessed Dec. 11, 2013).
- Young V. Innovation nation: funding the future. The Tech 2013; 133:9. http://tech.mit.edu/V133/N60/meganquinn.html (accessed Dec. 11, 2013).

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