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INTELLIGENCE ON ALL THINGS WIRELESS



Women in wireless

By Kelly Hill

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Women in the high-tech sector are making increasing in-roads in top positions, but the majority of workers in the wireless industry continue to be men – meaning that half the population is frequently missing out on the career opportunities and innovation happening in the fast-growing, fast-changing wireless industry and the industry itself is unable to leverage the full value of women in wireless.

This report examines the experience of individual women in the wireless industry as well as overall trends and barriers to more participation by women; notes some of the new and ongoing efforts by tech and wireless companies and leadership organizations to attract and retain women in the industry; and outlines the federal rules governing contracts with women-owned businesses and other federal programs.

Women's participation in tech continues to lag

Despite the success of individuals, telecom is not exempt from the overall trend in science, technology, engineering and math fields that actually show the participation of women decreasing over time.

The federal Equal Opportunity Employment Commission recently released a report noting that of more than half-a-million reported workers in the telecommunications field:

- Overall, telecom employment including wireless and wireline telecom

had a gender breakdown of 58% men and 42% women in 2012, compared to 56% men and 44% women in 2010.

- Among executives and senior level managers, 2012 figures show 80% men and 20% women; 2010 numbers were 78% men and 22% women.
- Mid-level managers were slightly more evenly distributed, with men filling 63% of those roles and women 37% in 2012. As in the other areas, however, women's numbers dropped slightly from filling nearly 39% of mid-level managers in 2010.
- Among office and clerical workers in telecom, women dominated by filling 67% of those spots and men 33%. However, even in that area men gained ground since 2010, when women made up 69% of reported clerical and office workers and men 31%.

There are a variety of programs in place – many of them relatively young – to make highly technical industries, including wireless, better able to attract and retain talented women. Efforts to

reach out to women entrepreneurs, and to encourage girls to consider careers in STEM fields include White House initiatives, both via public agency partnerships and encouragement of private industry participation, for mentoring and inclusion of girls in STEM education programs. Google recently committed \$50 million to “Made with Code,” encouraging young girls to get involved with tech-industry careers and learn to code. Verizon Communications has a new ad campaign for its “Inspire Her Mind” initiative to draw the interest of young girls to the telecom industry, citing stats that women hold fewer than 25% of STEM jobs in the U.S. and attempting to draw interest to those fields. In March, the European Union launched a campaign celebrating “digital role models” for young women encouraging people to share their stories via viral videos.

The GSMA's Connected Women program was launched two years ago with the aim of increasing the number and influence of

women in the mobile ecosystem through networking events and mentoring, as well as working on educational policy and examining company best practices for attracting women.

“What we’re aiming to do is position the mobile industry at the front of the movement to accelerate the rise of the female economy – women as the consumer and women as the employee,” said Vicky Sleight, senior director of membership for the GSMA and head of its Connected Women program.

Sleight noted that a recent European Commission meeting on women in the information and communications sector projected that there may be a shortfall of 900,000 ICT workers in the EU by 2020, and if more women entered that field it could boost the EU’s gross domestic product by \$9 billion per year. Additionally, on a global scale women are steadily attaining higher levels of education, control the majority of household purchase decisions and have been projected to gain more of the world’s overall wealth over time. Sleight noted that providing women with mobile technology often enables them to improve their families’ and communities’ standard of living – and having talented women on board to help develop products and services for other women is an important factor for companies to be able to leverage.

In talking with women across the

wireless industry, Sleight said that more awareness of the gender gap and the value of women in the industry is evident.

“I think one of the key points you hear from female leaders in the industry is that it hasn’t changed much since 10 years ago, and it is starting to change now,” Sleight said. “There is a lot more emphasis on it now, and they’re pleased by that.”

When women come to GSMA events, she added, “they don’t want to talk about the glass ceiling any more. People want to come to learn about the future of the industry, they want career advancement. They don’t want to come and hear, ‘woe is me.’ They’re there as professionals with ambition and want to remain as part of an exciting industry.”

Brook Bascom was recently elected as the incoming VP of the Women’s Wireless Leadership Forum, which is a division of wireless industry trade association PCIA. Bascom has been active in the WWLF for several years and also serves as secretary of the Texas Wireless Association. Bascom, who has worked for T-Mobile US, recently made a career move to Smartlink, which focuses on staffing and site development for wireless infrastructure, as its director of national business development.

“I think a defining moment for me was finding the Women’s Wireless Leadership Forum,” Bascom said. “Through this type



Source: WWLF

Brook Bascom, incoming VP at WWLF, which focuses on staffing and site development for wireless infrastructure, and Director of National Business Development for Smartlink.

of organization, you can gain a perspective that you don’t necessarily find in your office.”

Bascom said that she sees increasing interest in the industry for mentorship for women – both among women, and among men looking to foster achievement

in their women employees.

“Honestly, there are so many men out there who support what we do, and I think that is gaining momentum,” Bascom said.

Bascom noted that for women in small businesses in the wireless industry, it may be particularly hard to find resources within their organizations and they may not know how to go about finding other women in the industry with whom to network – and that is where groups like the WWLF comes in, Bascom said.

However, despite the interest in attracting more women to high-tech and wireless careers, there remain skills gaps between genders that needs to be addressed through educational

policy changes, according to the GSMA’s Sleight. From a young age, girls are less frequently encouraged to pursue STEM-area studies and careers. A recent Google survey showed that girls who know little about technical fields such as computer science associated it with being boring and difficult – while women who were actually in that field described it as exciting, fun and interesting.

“There is a lack of knowledge of the careers that are available,” Sleight said.

Carlton Hill, VP of device operations and developer services at AT&T, said that she has made a point of extolling the value of an education in a technology field to her own children and acquaintances. With 25 years of experience in the

wireless industry, Hill manages AT&T’s developer support organization. At AT&T “hackathons,” she said, “we see a lot of young girls turn up at those to learn, and we’re able to teach some of them how to code for the first time.”

Those events not only offer the technical knowledge of how to code, Hill said, but provide an opportunity for young women to join in the camaraderie of a collaborative tech environment.

“We hope that not only do we teach young women to code, but we introduce them to all other aspects of being part of the applications industry,” said Hill. “[The hackathons] are a great opportunity to really build networks and alliances and friendships with people that are going to be the senior leaders in the ecosystem.”

The wireless industry, Hill added, presents unique opportunities for women to jump in and innovate in start-ups where they can work and succeed outside the traditional corporate telecom environment.

“Those are opportunities for women and for men – in part for women, because you get out there in front of your own work and prove yourself, and it’s not about having to compete against an existing corporate environment that’s dominated by men,” Hill said.

Along with that, Hill said, comes the challenge for large companies such as AT&T to put effort into changing its public persona from a telephone



Source: RCR Wireless News

WWLF panel on “Winning the Race Wearing Heels,” December 2013.

company to a more application software-driven enterprise that embraces fresh perspectives from both men and women.

Hill also noted that she sees significant change in the prominence of women leaders in wireless, such as AT&T's Kris Rinne, who is SVP of the telecom giant's network and product planning operations and last year was inducted into the Wireless History Foundation's Wireless Hall of Fame.

Doreen Trant, SVP for network implementation at M2M Spectrum Networks, ran her own telecom company for seven years and has more than two decades in the wireless industry, including working at large original equipment manufacturers. Trant sees women slowly broadening their sphere of influence.

"My experience when I started was, I saw women in two roles: it was either [human resources] or it was in marketing," Trant said. "Today you see women holding a variety of roles, it doesn't matter whether it's in engineering, in IT, or whether it's running and managing a large communications company. That's where I've seen the major difference."

Women in wireless: mentorship, slow change and challenges

Many of the programs that aim to increase women's participation in the wireless industry include mentorship opportunities. With good reason – most women in the industry can point to at



Source: M2M Spectrum Networks

Doreen Trant, SVP for network implementation at M2M Spectrum Networks.

least one person – male or female – who encouraged their ambitions.

"Whenever I am asked what is the missing link between a promising business person and a successful one, mentoring comes to mind," Richard Branson, founder of the Virgin Group, has written on his blog.

One of the most defining and exhilarating moments in the industry for AT&T's Hill was running BellSouth's

war room during a spectrum auction, with billions of dollars at her disposal. Knowing that the president of her company believed in her ability to make crucial decisions on where to invest its dollars, Hill said, taught her the importance of conveying trust that inspires confidence.

Patricia Watkins, director of global client management and business development for Sprint's Velocity connected vehicle initiative, said that a male friend who worked in the telecom industry helped her gain a foothold in the industry after a discussion about her career goals. Interested in both a career that involved an analytical field and sales, Watkins went to Sprint and her first national account was with auto maker Daimler Chrysler. In getting to know that customer's needs and collaborating to get the right people from both companies together to serve Daimler Chrysler's needs, Watkins eventually parlayed that experience into managing business development for connected vehicles. Watkins was recently recognized as a leader in the machine-to-machine space for her work by *Connected World* magazine.

Watkins said that in bridging between the wireless industry and the automotive industry, she has had many meetings where she is the only woman in the room.

"It's changing, but very, very slowly,"

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Watkins said. “My approach is not to focus on the fact that I’m a woman in that role. I had this conversation on my team: it’s not about the title, it’s about gaining the respect. If you deliver, you’re going to gain that whether you have the title or not, whether you’re a woman or a man.”

Trant cited both the influence of her parents – both corporate executives – as inspiration for her desire to run her own company, and the mentorship of her current president and CEO in bringing her aboard in her current position and establishing an environment where loyalty is a priority, and good communication and a roadmap for achieving goals is clearly articulated.

Sleight said that women in the wireless industry currently can participate in mentorship programs, in industry events and even simply by looking for opportunities to talk to young people about careers in the wireless industry.

Karen Caldwell, owner of Caldwell Compliance, which specializes in environmental management for wireless network sites at the federal level, started in the wireless industry in 1994, and said that it wasn’t until a major carrier reached out to her to take a leading role in a large network modification project – and concurrently suggested that she start her own company – that the thought of entrepreneurship crossed her mind.

Caldwell said that when she started in the industry 20 years ago, there were few

women, and when she started Caldwell Compliance it was one of the few women-owned consulting companies that existed in the industry.

“There have been tremendous strides,” Caldwell said. “When I started, who knew that this was a career? We didn’t know this was a career.”

Caldwell said that one of her favorite parts of her job is the opportunity to introduce newcomers to telecom.

“I really, really like bringing new people into the business,” Caldwell said, adding that her company has an extensive training program. “I like bringing them in, and training them to be professionals in the wireless industry. I like the idea of being able to help people find a career in this business.”

However, Caldwell recognizes that long hours, frequent travel and possibly needing to relocate for a wireless industry career are challenges.

“I see that challenge, not just for women, but for anybody – but I think it’s more difficult for women, particularly those with children,” Caldwell said.

Motherhood is also generally seen as a barrier for women in the tech industry, particularly in the U.S. According to Bureau of Labor Statistics numbers published by Catalyst, which tracks women’s involvement in the labor force, however, more than 60% of women with children under three years old were in the labor force in 2011. Working mothers

of children under the age of three made up about 8% of all women in the labor force, but fewer than half had options for paid maternity leave.

Hill said that from her perspective, motherhood has made her a better employee.

After having her children, she said, “not only did I go back to work with relish, but motherhood, and having seven-times more things to do than I did, made me much better at my job – more efficient and organized,” Hill said. “It made me more committed to being successful within the large organization that was my company family.”

Heidi Adams, senior director of product marketing for Alcatel-Lucent’s IP routing and transport segment, said a high school guidance counselor noticed her interest in science and math, and encouraged her to look at studying the sciences and see STEM fields as not just about research, but about building and enabling things.

“She really did set me on this course,” said Adams. “I was never in a position to know about it.”

So Adams went on to become an electrical engineer, but also earned an MBA in finance and marketing. She initially worked in a field engineering position helping install communications equipment, with field techs who disliked both engineers and women – and she was both, and told she was bad luck.

“I rolled up my sleeves, I learned how to use the equipment, I pulled cable, spliced



Source: M2M Alcatel-Lucent

Heidi Adams, senior director of product marketing for Alcatel-Lucent's IP routing and transport segment.

cable and I had a great time," Adams recalled. "I think they turned things from resignation to grudging respect."

"My first lesson was: adapt, go with the flow. Roll up your sleeves and adapt, and smile."

Adams went on to do sales training based on analytics to help sales teams become more competitive. She recalls giving her presentation to "a room of engineers – very few women. All very technical, all very knowledgeable, and here I am trying to tell them something

they don't know. And they were a tough crowd," Adams remembered.

One man, she said, came up to her afterwards and told her, "I didn't expect to learn anything from you" – I could see the subtext – 'but I really got something out of this session.'

"My takeaway from that was, know your stuff, which I did," Adams said. "You can't be intimidated by that gender divide, and knowledge builds confidence as well."

Adams noted that women employees of Alcatel-Lucent formed the company's "StrongHer" networking and support group in 2011, which relies on the company's internal social networking platform. The group has more than 950 members in 51 countries, and almost 20% of its members are men, according to Alcatel-Lucent.

Federal programs to support women entrepreneurs

The federal government has made a priority of supporting small businesses owned by women. The Women-Owned Small Business Federal Contract Program went into effect three years ago, and companies must be certified as such before they can compete for federal contracts.

The guidelines include:

- The small business must be at least 51% "unconditionally and directly owned and controlled" by a woman or women who are U.S. citizens.

- A woman has to be involved with day-to-day operations and make long-term decisions for the business; hold the business' highest officer position; and work at the entity full-time during normal business hours.
- While there is no minimum amount of time that a company or individual must be in business to qualify, the individual woman must have a work history that shows "managerial experience of the extent and complexity required to control operations, decision-making and long-term planning."

In addition, some women-owned small businesses can qualify for the category of being an Economically Disadvantaged WOSB, which includes the added requirements that at least one of the women who owns the business has a net worth of less than \$750,000 (excluding certain factors such as primary residence); has an average adjusted gross yearly income for the previous three years of less than \$350,000; and has assets, including the business, valued at less than \$6 million.

Erin Andrew, the U.S. Small Business Administration's director for women's business ownership, emphasized that the agency has access to capital, contracts and counseling to help women succeed as entrepreneurs. The federal government spends \$500 billion per year, and the SBA helps direct 23% of

that to small businesses, with about 5% going to women-owned small businesses. In addition to the WOSB program, Andrew said that women in tech fields should consider SBIR grants for technological research, and making use of the SBA's network of 104 business centers and 11,000 volunteers for training and advice on various aspects of starting and building a business.

"We need more women in those STEM fields to start businesses, especially in the wireless industry. It's a growing sector," Andrew said. "I would say work with the SBA, look at the programs. We have to think about the federal government as a potential source of revenue, look at the business opportunities that are available through the various agencies and see if they're eligible."

Andrew said that in addition to girls and women being less encouraged to study high-tech fields and view them as a viable and interesting career path, fear of failure and risk aversion is another barrier to women's entry as tech entrepreneurs.

A study released last year by the SBA, conducted from a data set following new small businesses from 2004 to 2010, found that women-owned small businesses typically operated with significantly less capital than businesses owned by men, and with a different mix of debt and equity capital. Women business owners relied far less on equity capital than male owners, and more

women consistently reported that they had avoided applying for credit even when they needed it because they feared the application would be denied. Meanwhile, high-tech firms in the study had the highest rate of applying for credit (17%) and in most years of the study, had a higher approval rate than small businesses overall.

That tendency toward being risk-averse can lead women to undermine their own business opportunities, limiting their resources – and the potential rewards.

"Don't be afraid of failure," Andrew advised. "Failure is going to happen if you're an entrepreneur. Failure is going to happen in a lot of those STEM fields. Failure sometimes is a good thing because you learn from it, to get back up and not to take it personally or as the end of the world."

Another SBA study noted that despite the growth among women-led businesses, a lack of social contacts in the venture capital world to women entrepreneurs (and vice versa) probably miss good opportunities to invest. That study found that the performance of venture capital funds improved as its ratio of investment in women-led businesses increased.

Andrew also emphasized that women already in male-dominated, high-tech fields should not underestimate their ability to inspire others to see those industries as viable and exciting career paths.

"It's always important as individuals

to learn from good examples, and those women that are out there in the STEM fields, I don't think they always realize the influence they have in getting women and girls into that type of field," Andrew said.

Key takeaways

- Women's participation in the wireless industry continues to change and individuals report high levels of satisfaction and opportunity – but the industry's overall statistics still reflect less participation by women overall. This is in line with trends in other STEM fields.
- Significant resources, programs and attention are being put forth to attract and retain talented women, through individual company programs, industry groups, networking events, educational resources and more. Many of them are relatively young initiatives.
- Formal and informal mentorship of women, family-friendly work policies and spreading information about telecom careers and the opportunities in wireless all contribute to the industry's ability to fully leverage the value of women in wireless.
- Federal programs, particularly through the Small Business Administration, are a potential source of revenues and support for women entrepreneurs in the tech industry. (☞☞☞)



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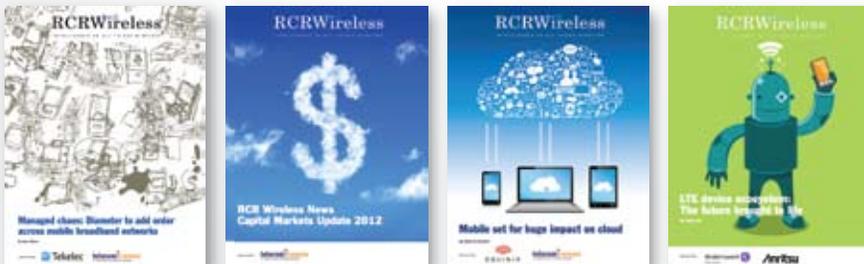
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