



October 23, 2009

## Fostering A More Diverse Infrastructure And Operations Department

How To Recruit, Develop, And Retain Women And Underrepresented Minorities

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### EXECUTIVE SUMMARY

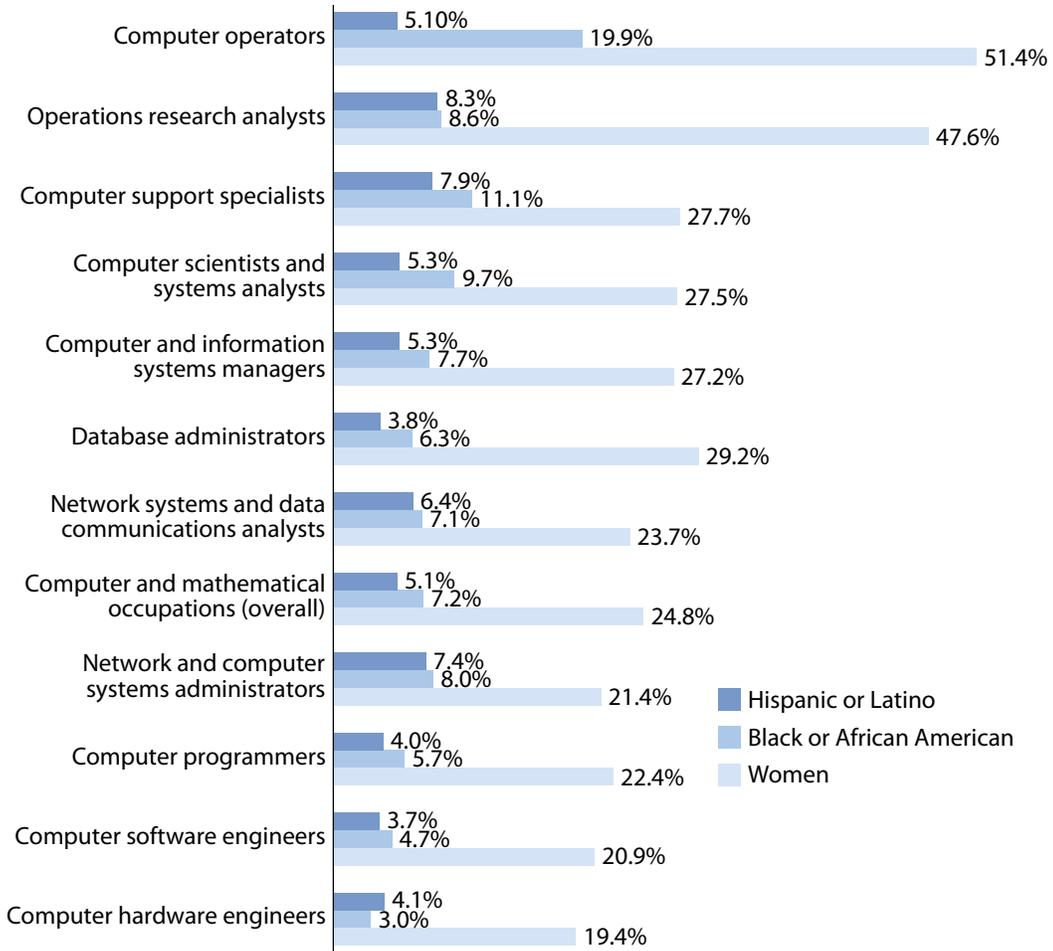
Diversity in IT departments has always been a sensitive subject. Many firms simply don't get a lot of diverse candidates applying to work in their IT departments, but they don't know why. And the problem isn't getting any better. Over the past few years, the number of women and underrepresented minorities (URMs) in IT has been dropping steadily. To combat this, infrastructure and operations (I&O) departments must take a different approach to recruiting and retaining employees. This will not only increase the number of women and URMs, it will also help attract your next wave of employees — the Millennials — which by 2020 will be made up of 44% minorities, the most of any US generation.

### INFRASTRUCTURE AND OPERATIONS IS THE LEAST DIVERSE AREA OF IT

Although diversity in IT departments as a whole is in need of improvement, I&O is the department with the biggest diversity problem. To reverse this trend, I&O departments must consider a complete overhaul of their recruiting and retaining practices.

Data from the US Bureau of Labor Statistics shows that IT job titles such as computer hardware engineer and network and computer system administrator have some of the lowest participation rates of women and minorities (see Figure 1). Although some IT careers are more diverse than others — computer operators, for example, show evenly represented women and minorities by participation in the workforce — very few women and minorities can be counted in the ranks of management.<sup>1</sup> This cannot be entirely blamed on the lack of qualified diverse candidates. The number of women and URMs graduating with technical degrees is rising, due in part to major efforts by the National Science Foundation and other organizations.<sup>2</sup>

**Figure 1** Women And Minorities' Representation In Different IT Roles



Source: US Department of Labor, the US Bureau of Labor Statistics for 2008

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Source: Forrester Research, Inc.

## Recruiting More Diverse Candidates Into Your I&O Department

The No. 1 action your firm can take when trying to recruit more women and URMs into I&O is to cast a wider net. By enticing more candidates to apply — and recruiting in more talent pools — the odds of more diverse candidates applying for positions increases. Increasing the diversity of your applicant pool is the first step to hiring more diverse employees. You can achieve this if you:

- **Adjust the language in your job description.** Experts say that women are less likely to apply for positions unless they meet every requirement in the job description, while men are more likely to send in an application if they meet three-quarters or more of the criteria on the list.<sup>3</sup> When writing job descriptions, companies often list required qualities in a candidate in the same sentence as qualities that are not required but that are desirable. Instead, if you're writing a listing for a network administrator, for example, and virtualization skills are a plus but not entirely necessary for the position, list this skill separately from the other required skills.
- **Recruit at HBCUs, HSIs, and women's institutions.** Over the past decade, the historically black colleges and universities (HBCU) and the Hispanic-serving institutions (HSI) have received billions of dollars from government agencies to benefit their science and technology programs.<sup>4</sup> These programs graduate thousands of qualified minority candidates in technology and engineering every year. Additionally, several highly regarded women's colleges are starting up engineering and computer science programs that are growing quickly. Smith College's Picker Engineering program is an excellent example of this. Recruiting at schools that have special outreach for women and minorities in science and engineering, such as University of Maryland, Baltimore County, is also highly effective.
- **Reach out through professional groups for minorities and women in IT.** Professional networks for women and minorities in IT are plentiful and are a great way to reach out to diverse candidates (see Figure 2). Many of these professional groups also host online job boards or listings and, often, events.
- **Attend job fairs and conferences aimed at minorities and women in IT.** Besides attending the usual job fairs, consider recruiting at job fairs aimed at women and minorities in IT. The biggest conferences for women and minorities in IT are the Grace Hopper Celebration of Women in Computing and the Richard Tapia Celebration of Diversity in Computing. In addition, many professional groups have job fairs associated with them, such as the National Society for Black Engineers and the Black Data Processing Associates.
- **Post job listings on job sites specifically for diverse candidates.** Many companies use Monster Diversity & Inclusion as their main means of recruiting diverse candidates. Branch out by looking at the job boards associated with professional groups as well as other Web sites like Diversity Working and Diversity Jobs. There are also several publications that target women and minorities in IT, such as Diversity/Careers in Engineering & Information Technology, that list job opportunities on their Web sites.

- **Employ the competency-based approach for interviewing.** Competency-based interviewing, as opposed to technical skills-based interviewing, focuses on real-life situations rather than hypothesized ones. Instead of asking interviewees, “What would you do if . . . ?” tell them, “Give me an example of a time when . . .” Not only will this help to uncover those who do not have the necessary skills and experience for the position, but it also allows interviewees to emphasize some of their softer skills, such as communication and collaboration, that are considered strengths for women candidates.<sup>5</sup> In general, companies are beginning to move away from simply listing skills in a job description and moving more toward competencies that factor in many of the softer skills that are becoming more and more important in I&O.

**Figure 2** Professional Groups For Women And Minorities In IT With Large And Active Memberships

African-American Women in Technology	National Society of Black Engineers
American Indian Higher Education Consortium	Society of Hispanic Professional Engineers
American Indian Science and Engineering Society	Society of Women Engineers
Association of Computing Machinery Committee on Women in Computing	Systems
Black Data Processing Associates	Women in Engineering Organization
British Computer Society Women (BSCWomen)	Women in Technology International
GirlGeeks.org	Women in Technology, UK
Information Technology Senior Management Forum	Women of Color in Technology
Latinas in Computing	Women’s Business Enterprise National Council

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Source: Forrester Research, Inc.

## Retaining Diverse Employees In Your I&O Department

Recent studies have shown that 52% of highly qualified women in science, engineering, and technology quit their jobs and that almost half of all minorities leave technology jobs to enter other occupations. Studies also show that women in technology feel that they are judged more harshly, treated more unfairly, and discouraged more from voicing opinions than women in nontechnical careers.<sup>6</sup> Why is this? Many experts cite isolation and lack of peer communities as the main cause of the high attrition rates and job dissatisfaction. This might sound like the beginning of a vicious cycle, and you will struggle to retain women and URMs until you have a good-sized community. However, there are several steps you can take to grow a more diverse workplace:

- **Promote work/life balance and a flexible workplace.** Work/life balance, as well as a culture of flexibility in the workplace, is the single most important factor when attracting and retaining women and minorities. A culture of flexibility can include anything from flextime to flex careers, but the key is that employees feel they can use flexibility without experiencing negative consequences.<sup>7</sup> Although these types of cultural adjustments have historically been aimed at attracting and retaining women (who are more likely than men to be juggling childcare along with a career), anecdotal evidence suggests that these qualities in a workplace are important to minorities as well, especially if they are foreign-born. One unintended, and positive, consequence that companies have seen when adjusting their work culture to be more flexible and balanced is an increased number of Millennials — those born between 1980 and 2000.<sup>8</sup> This is due mainly to changing attitudes around household work and childcare: New data shows that full-time employed Millennials (both men and women) expect to spend more time during the workweek caring for children, although this is also due to the fact that Millennials value free time and flexibility more highly than their predecessors.<sup>9</sup>
- **Focus on service delivery and I&O's role in the big picture.** Studies have shown that women and minorities look for work that they feel is more meaningful, helpful, and engaging.<sup>10</sup> The least desirable position would be a replaceable “cog in the wheel.” It's therefore important to avoid the trap of becoming an I&O department that is completely inwardly focused and heads-down in the daily grind. To create a culture that is attractive to women and URMs, make sure you focus on the services that I&O provides to the business and on what these services enable the business to do. A focus on the big picture and more meaningful work will also help to attract Millennials, who, like women and URMs, have a strong interest in social change and meaningful work.<sup>11</sup>
- **Make time for training and skills advancement during the workday.** Almost 80% of midlevel women in IT who have partners claim that their partners work full-time. For men, this number is almost 38%.<sup>12</sup> The end result? Women in IT are much less likely to have free time outside of work to invest in developing and maintaining their technology skills. Thus, it's important to make time during the workday for all employees to engage in training and skills development and allow all employees to excel in their positions.

Once you have a number of women and URMs in your department, fostering communities and setting up mentoring programs will help with retention and satisfaction of employees. Additionally, since a large part of a company's desirability to a woman or minority candidate is how it presents itself, advertising the existence of these communities and mentoring programs will help to attract diverse talent:

- **Mentoring programs.** Studies have shown that mentoring improves effectiveness, confidence, work satisfaction, and talent retention.<sup>13</sup> Furthermore, when women in IT were surveyed on what barriers existed for them in their field, most cited lack of role models, mentors, sponsors, or champions.<sup>14</sup> The success of mentoring programs in IT has been demonstrated at several large organizations, such as Sun Microsystems. Sun's mentoring program, Sun Engineer Enrichment and Development (SEED), pairs new hires and established staff with upper-level engineers and executives. Although the program was open to any employee, women and minorities were much more likely to sign up to participate than their white male colleagues. The mentors counsel their protégés on soft skills such as teamwork and office politics, while at the same setting a positive example — leading to four times the number of SEED participants to be promoted than the company average.<sup>15</sup>
- **Affinity groups and communities.** Studies have shown that retention and satisfaction rates of minority students are higher in IT-related academic programs that have communities of like students.<sup>16</sup> The same theory applies in the workplace. Companies such as Texas Instruments and McDonald's, which have won awards for their diversity and inclusions programs, set up internal support networks for women and minorities. Advertising the existence of these groups or communities will also help with the recruitment of minority candidates. Other companies partner with preexisting professional networks for women and URMs in their departments and encourage employees to participate in events — for example, Comcast is partnered with the National Society of Black Engineers and many other groups for minorities. Connections with larger groups and events can help to connect employees to the larger community where new ideas are exchanged on ways to improve the workplace.

## RECOMMENDATIONS

### EXECUTIVE ACCOUNTABILITY AND COMMITMENT ARE KEY TO ACHIEVING DIVERSITY

Getting executives onboard and creating a formal accountability program for diversity is the first, and some say the most critical, step. You will need executive support for most of the initiatives listed above, such as promoting a culture of flexibility, offering additional training, and instituting community and mentoring groups. Creating a formal program will not only help to keep the initiatives on task, but it also sends a positive message to potential employees. In addition to a formal action plan, some companies, like Telia Sonera, created task forces to draft the initiative and monitor its progress. Benchmark your success with an annual employee survey on job satisfaction and additional services they feel you should offer.

## SUPPLEMENTAL MATERIAL

### Companies Interviewed For This Document

Anita Borg Institute for Women and Technology

Diversity in Information Technology Institute, UNC Charlotte

Women in Technology, UK

## ENDNOTES

- <sup>1</sup> Technical men are more likely than technical women to hold high-level positions. In our sample, the odds of being in a high-level position are 2.7 times as great for men as for women. Women comprise an increasingly smaller proportion of the workforce at each successive level (from entry to mid to high). Midlevel women are predominantly white or Asian. There are few underrepresented minority women at this rank. Source: Caroline Simard, Ph.D. and Andrea Davies Henderson, Ph.D. (et al), "Climbing the Technical Ladder: Obstacles and Solutions of Mid-Level Women in Technology," Anita Borg Institute for Women and Technology, October 2008.
- <sup>2</sup> Although the number of women graduating with computer science degrees has been falling since it reached its peak in 2001, the number of other underrepresented minorities graduating in these fields has been rising steadily. Additionally, the percentage of graduates in engineering who are women or underrepresented minorities has been rising steadily since 1997. Source: National Science Foundation, Division of Science Resources Statistics, special tabulations of US Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey, 1997–2006.
- <sup>3</sup> The view is that women will only apply if they are sure they can meet every criterion, while men will send in an application if they can match about three-quarters of the criteria. Source: Christina Evans, Judith Glover, Yvonne Guerrier, and Cornelia Wilson, "Effective Recruitment Strategies and Practices: Addressing Skills Needs and Gender Diversity Challenges in ITEC and Related Sectors," School of Business and Social Sciences, Roehampton University, June 2007.
- <sup>4</sup> Lists of historically black colleges and universities and Hispanic-serving institutions can be found online at <http://www.ed.gov/about/inits/list/whhbcu/edlite-list.html> and [http://www.hacu.net/assnfe/CompanyDirectory.asp?STYLE=2&COMPANY\\_TYPE=1,5](http://www.hacu.net/assnfe/CompanyDirectory.asp?STYLE=2&COMPANY_TYPE=1,5).
- <sup>5</sup> Source: Christina Evans, Judith Glover, Yvonne Guerrier and Cornelia Wilson, "Effective Recruitment Strategies and Practices: Addressing Skills Needs and Gender Diversity Challenges in ITEC and Related Sectors," School of Business and Social Sciences, Roehampton University, June 2007.
- <sup>6</sup> Source: Sylvia Ann Hewlett (et al), "The Athena Factor: Reversing the Brain Drain in Science, Engineering, and Technology," *Harvard Business Review*, May 2008, and David Worthington, "Computer science lacks women, minorities," *SD Times*, September 4, 2009. Perceptions of fairness in performance evaluations were slightly more positive than perceptions of fairness of management decisions and trust of employee

judgment. Fifty-nine percent of women in technical roles — compared with 70% of women in nontechnical roles, 64% of men in technical roles, and 67% of men in nontechnical roles — responded that their job performance was evaluated fairly. With respect to voice within their companies, 58% of women in technical roles — compared with 61% of women in nontechnical roles, 65% of men in technical roles, and 63% of men in nontechnical roles — agreed that it was safe to speak up in their companies most of the time. Source: Heather Foust-Cummings, Laura Sabattini, and Nancy Carter, “Women in Technology: Maximizing Talent, Minimizing Barriers,” *Catalyst*, February, 2008.

<sup>7</sup> Source: Ellen Galinsky, Shanny L. Peer, Ph.D., and Sheila Eby, “2009 Guide to Bold New Ideas for Making Work Work,” Families and Work Institute, 2009.

<sup>8</sup> The Families and Work Institute’s study of the 2008 winners of the Alfred P. Sloan Awards for business and excellence in workplace flexibility uncovered that the companies that introduced greater flexibility into their workplace were more successful at attracting and retaining top Millennials. Source: Ellen Galinsky, Shanny L. Peer, Ph.D, and Sheila Eby, “2009 Guide to Bold New Ideas for Making Work Work,” Families and Work Institute, 2009.

<sup>9</sup> Both Millennial fathers and mothers are spending considerably more time with their children. Today’s Millennial fathers spend an average of 4.3 hours per workday with their children under 13, significantly more than their age counterparts in 1977, who spent an average of 2.4 hours per workday with their children — a dramatic increase of almost 2 hours (1.9 hours). Mothers under 29 spend an average of 5 hours per workday with their children under 13 in 2008, up from 4.5 hours in 1977 — a half-hour increase. Source: Ellen Galinsky, Kerstin Aumann, and James T. Bond, “Times Are Changing: Gender and Generation at Work and at Home,” Families and Work Institute, 2009.

<sup>10</sup> Midlevel technical men and women value having an impact on their team, their organization, and on technology users. They strive to understand how their work contributes to the team or organization. Interviewees in particular refer to a feeling of accomplishment when their technical contributions achieve organizational goals. Source: Caroline Simard, Ph.D. and Andrea Davies Henderson, Ph.D. (et al), “Climbing the Technical Ladder: Obstacles and Solutions of Mid-Level Women in Technology,” Anita Borg Institute for Women and Technology, October 2008.

Teresa Dahlberg, Ph.D., director of the Diversity in Information Technology Institute at UNC Charlotte, says that many women and minorities are looking for work that is socially relevant and meaningful. “Women are becoming doctors; it’s not about being good at math, the technical rigor is the same. The big difference is that [medicine] is seen as a helping profession. Women are more represented in the sub-disciplines related to family and children.” Dahlberg believes that the social relevance attraction is different for minorities as for women. “I have had African-American men tell me that the only options that they thought they had growing up were to be a teacher or [a] preacher,” Dahlberg said. “So, this might be more about a lack of role models. However, anecdotally, if you are an under-represented person in school or at work, doing work that helps others helps you to feel more engaged in your work.” Source: David Worthington, “Computer science lacks women, minorities” *SD Times*, September 4, 2009.

- <sup>11</sup> Source: David Madland and Ruy Teixeira, “New Progressive America: The Millennial Generation,” Center for American Progress, May 2009.
- <sup>12</sup> Source: Caroline Simard, Ph.D. and Andrea Davies Henderson, Ph.D. (et al), “Climbing the Technical Ladder: Obstacles and Solutions of Mid-Level Women in Technology,” Anita Borg Institute for Women and Technology, October 2008.
- <sup>13</sup> Source: “Mentoring Basics – A Mentee’s Guide,” National Center for Women & Information Technology.
- <sup>14</sup> Source: Heather Foust-Cummings, Laura Sabattini, and Nancy Carter, “Women in Technology: Maximizing Talent, Minimizing Barriers,” *Catalyst*, February, 2008.
- <sup>15</sup> In the past five years, 385 protégés and more than 230 mentors participated. Women and non-US staff take advantage of the SEED program at a consistently higher rate than their representation in Sun Engineering overall. About 25% of all SEED participants are women. This percentage far exceeds the percentage of new hire or existing women engineers. SEED’s effectiveness has been measured through program satisfaction ratings and by comparing participants with nonparticipants. Although participants are preselected for likely success at Sun, annual reviews of participants’ cumulative progress since 2001 showed the following patterns of career achievement among participants: About four times the number of SEED participants than the company average were promoted. This trend continues even in the year after participation. Participants earn about double the number of Sun’s highest performance rating (Superior) compared with the company average. All participants and their managers provide a quarterly summary of their participation, level of satisfaction, suggestions, and professional development activities. SEED’s reported satisfaction levels consistently run about 90%. Source: Lecia Barker and J. McGrath Cohoon, “Sun Engineering Enrichment and Development (SEED) Program (Case Study 1): Mentoring Technical Women at Work,” National Center for Women & Information Technology, 2007.
- <sup>16</sup> Teresa Dahlberg, Ph.D., Tiffany Barnes, Kim Buch, Audrey Rorrer, Anthony Chow, and Sally Berenson, “Students in Technology, Academia, Research and Service (STARS) Final Evaluation Report” National Science Foundation, August 2007.