
Using Games for Good to Address Diversity in High Tech

Karen Holtzblatt

CEO, InContext Enterprises
Silver Spring, MD 20901 USA
karen@incontextdesign.com

Bill Kules

College of Information Studies,
University of Maryland
College Park, MD 20742 USA

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.

Copyright is held by the owner/author(s).

CHI'17 Extended Abstracts, May 06–11, 2017, Denver, CO, USA

ACM 978-1-4503-4656-6/17/05.

<http://dx.doi.org/10.1145/3027063.3049279>.

Abstract

A constant flow of reporting documents the lack of women and other underrepresented groups in high tech. In response, companies are working to fill the hiring pipeline. But beyond filling the pipeline, statistics show women leave technology fields in mid-career 50% more often than men. Recent research on retention and work-life issues reveals key factors in women's success, which supports interventions that are being developed.

The games for good movement tackles social problems and offers a potentially engaging intervention approach. Working with the research data on the lives and success factors of women in technology companies, the organizers and a group of students are building a set of games to raise awareness and change behavior in a fun way.

SIG attendees will be able to respond to these game concepts, "play" selected games with mock-ups and provide feedback, and contribute ideas of how gaming can be used to support diversity.

Author Keywords

Gaming; Simulation; Games with Purpose; Gaming for Good; Games for Social Change; Serious Games;

Diversity; Employment; Gender; Mentoring;
Organizational Culture; Social and Legal Issues

ACM Classification Keywords

I.6 Simulation and Modeling; I.6.8 Types of Simulation:
Gaming

The Problem: Diversity in High Tech

As widely reported in the news media and many studies, the lack of workforce diversity in high tech is a significant, ongoing problem. Companies are taking steps to address the issue by doing things like creating executive-level positions for Diversity and Inclusion and making significant financial commitments to attract and hire women into their organizations [1]. Despite these initiatives, self-reporting by major tech companies shows minimal progress [2]. One reason is that women leave mid-career at a much greater rate than men—a consistent finding from the Anita Borg Institute [3].

Recognizing the lack of deep research into women's work experiences and to begin addressing the issue of retention, Karen Holtzblatt, widely known for inventing Contextual Design and working with product teams world-wide, launched The Women in Tech (WIT) Retention Project [4].

The research examines the lives of successful women in high tech across all key roles in a product team between ages late 20s to 50s. Looking for success factors, the inquiry focuses on daily work experience, including teamwork, meetings, management interactions, support, promotions, self-esteem, and interpersonal dynamics. Coupled with a survey taken by several hundred respondents to test and validate the factors, a framework emerged for understanding the

challenges of high tech women and to focus interventions to foster success. The factors include:

- A dynamic, valuing team they feel connected to,
- Stimulating, impactful work produced with the team,
- “The Push” to new challenges with support to succeed in them,
- Local role models living a desirable work and home life,
- Nonjudgmental flexibility to deal with balancing home and work commitments, and
- Personal power, the ability to overcome negative self-talk and present professionally.

This action framework and the associated data are now being used to guide the development of interventions, in this case a preliminary set of WIT-y Games for Good.

Delivering Interventions: Games for Good

For some years academia has been developing scholarship and programs to teach game design. Recently both industry and academia have become increasingly interested in developing games that address social issues: “games for good”. For example, Life is Strange is a five part episodic game that allows the player to rewind time and affect the past, present and future [5].

Games for good are part of an overall movement to use game techniques to teach and address social issues [6, 7]. Games for good can be applied to many problems, as evidenced by their adoption by health and education businesses, as well as social activists involved with issues like urban planning, political violence, and sex

trafficking [8]. In the area of women and career advancement, a team from SAP has created a career exploration game based on the *Snakes and Ladders* board game [9].

Games are now used by a large percentage of the population. For example, the most recent study from Entertainment Software Association said that 60% of Americans play games and 31% of that group is women age 18 or older. The total audience for mobile social games is split 59% male and 41% female with an even 50-50 split between women under and over age 35. Of all game players, 48% play social games [10].

Games are especially used to alleviate boredom when waiting or taking breaks and they are another way to have fun with friends. Board games are currently now a rage with young professionals for game night [11]. Millennials and professionals under age 38 (the first 10 years of professional life) are those women professionals who are most likely to leave the industry or a company where they do not feel valued and connected. They also play games. So developing intervention games seems one viable approach.

Working with University of Maryland iSchool students in the Master of Human-Computer Interaction and Master of Library and Information Science programs, three viable game concepts were developed that seek to simultaneously support awareness and behavior change while also being fun. Using the data and framework from the Women in Tech Retention Project, the students used a modified Contextual Design ideation process to develop game concepts that addressed the framework issues:

1. **Company Cats:** Connect with local peers and potential mentors to meet virtually and face-to-face to have fun with pet cats (Team Connection and Local Role Models).
2. **Office Challenge:** Your character must fight off monsters (Project and Team Challenges) and open doors (Personal Choices) to escape the office (Team Connection and Personal Power).
3. **Team Board Game:** Make it through the work and advance your career to win with collaboration. (All Factors).

The games stimulate awareness and encourage behavior change in a variety of ways. They provide scenarios that prompt players to consider a situation (e.g. "There a five male engineers and one female engineer. The female engineer is not participating in the meeting. What would you do?") and choose an action (ask her ideas; let her be silent; round robin ideas). Each choice impacts their ability to advance in the game environment. For example, in *Company Cats*, players teach their pets tricks and share virtual pet experiences with other players, helping people connect through their pets in a fun way. This encourages connection between team members and helps build a wider network.

The SIG will share concept boards for these games and participants can respond with their interest level and design ideas. They also play one or two of the games. They provide feedback, contribute to the design and gain awareness of the issues. Finally, participants are introduced to the WIT data and framework, generate more game ideas for consideration, and gain awareness to take back to their organizations.

Acknowledgements

We thank all the volunteers working on the WIT Retention Program, especially the women who allowed us to interview them and those who took the survey. We especially acknowledge our University of Maryland students who co-invented the game concepts: Gowtham Ashok, Christopher Robeck, Rebecca Annis, and Xuan Zhang.

References

1. Stacey Jones and Jaclyn Trop. "See how the big tech companies compare on employee diversity". *Fortune*. July 30, 2015. Retrieved December 30, 2016 from <http://for.tn/1K5nQPL>.
2. Georgia Wells. "Tech Companies Delay Diversity Reports to Rethink Goals". *The Wall Street Journal*. December 5, 2016. Retrieved December 30, 2016 from <http://on.wsj.com/2gYqhiZ>.
3. Anita Borg Institute. *Top Companies for Women Technologists Key Findings & Insights*. 2016. Retrieved December 30 from <http://anitaborg.org/insights-tools/top-companies-participants/key-findings-insights-2016/>.
4. The Women in Technology Project. <http://incontextdesign.com/articles/the-women-in-technology-project>. Accessed December 30, 2016.
5. DONTNOD Entertainment. Release Date: January, 29, 2015. *Life is Strange*. Games for Change. <http://www.gamesforchange.org/play/life-is-strange/>.
6. Luis von Ahn and Laura Dabbish. "Designing Games With A Purpose". *Communications of the ACM*. 51 (8/08).<http://dl.acm.org/citation.cfm?doid=1378704.1378719>.
7. Robin J.S. Sloan, Dayna Galloway and Iain Donald. "A Sweetspot for Innovation: Developing games with purpose through student-staff collaboration". *2014 6th International Conference on Games and Virtual Worlds for Serious Applications: VS-Games 2014*. September 9-12 2014. <http://dx.doi.org/10.1109/VS-Games.2014.7012027>.
8. Laura Parker. "Not Just Playing Around Anymore: Games for Change Uses Video Games for Social Projects". *The New York Times*. April 21, 2014. Retrieved on December 30, 2016 from <http://nyti.ms/2hHRbg6>.
9. Uma Rani T M, Krithika G, and Shylaja Sabbani. "Turning your Snakes into Ladders – A Career Exploration Journey". Presented at the *Grace Hopper Celebration of Women in Computing Conference*. October 19-October 21, 2016. <http://signage.showprg.com/GHC2016/session6820.html>.
10. Entertainment Software Association. *2016 Sales, Demographic, and Usage Data: Essential Facts about the Computer and Video Game Industry 2016*. Retrieved January 9, 2017 from <http://essentialfacts.theesa.com>.
11. Luke Graham. *Millennials are driving the board games revival*. CNBC.com. December 22, 2016. Retrieved January 9, 2017 from <http://www.cnbc.com/2016/12/22/millennials-the-board-games-revival-catan-pandemic.html>.