



THE BUSINESS OF GENDER: IS YOUR PRODUCT GENDER-NEUTRAL?

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INTRODUCTION

By 2010, women made up just over 50% of the US population, accounted for over half of its payroll, and provided more than half of all purchasing power [1, 2]. There are products built for male audiences and products for female audiences (all too often pink), and products that are intended to be gender-neutral. But exactly how well-designed are the gender-neutral products?

Countless articles in the press stress the importance of increasing the number of women in STEM fields and suggest strategies to achieve it. I want to see these changes in the work force and I invest time working to support these changes. However, I'm a pragmatist. I know that problem won't be solved overnight. In the meantime let's consider the consequences on businesses today of not having many women in technology decision-making positions. Where there are negative business consequences, we should address them now. I worked on software development of commercial products for almost 20 years and have first-hand experience of the decision-making processes that contribute to how products come to be, experience that is relevant to identifying, understanding, and addressing these challenges.

Before proceeding, I want to state that I am a huge supporter of user-centered design (UCD) approaches; I have spent most of my career directing user experience teams. But even the best-intentioned teams that leverage UCD practices have to make hundreds of decisions on a daily basis with limited time and resources. This leads to gut-intuition decision-making. I contend that a team with high gender awareness will produce better products for both male and females with their first design, increasing earlier success in the market place.

A brief review of consumer product history reveals that engineering teams have tried from time to time to offer a female version of a product, possibly having realized that the original version didn't meet female market needs, but this intention hasn't always led to success. Sometimes it has led to ridicule. It would be nice to think that these were historical missteps, but unfortunately they still happen today.

In 2009 Dell decided that women weren't able to get the experience and information they were looking for from the Dell Support site. They launched a site for women called Della [3]. The pastel-colored site received a stream of negative press and public comments and did not last long. In 2012 Eurostar produced the android ePad Femme tablet for women [4]. Eurostar claimed that the gentle pink device took the hard work of downloading away by coming pre-loaded with apps for cooking, yoga, and the like. The strategy of dumbing it down and making it pink was as successful as speaking English loudly to a non-native speaker who doesn't understand the words – it doesn't get you anywhere.

Was there a real market opportunity for these offerings, or were they created to fulfill a need that was not met in the original offering? In both cases, the original offering was intended to be gender-neutral.

There has been a recent swell in attention to the number of women in senior positions in the work place—around 20% [5]. Gender bias is sometimes broken down into first and second generation bias. First generation bias is obvious bias, combatted by laws that proscribe jobs advertisements saying, 'Only men need apply,' for example. Second generation bias is more subtle, often not intended and therefore harder to identify and remove. For example, a male executive may prefer to promote people who behave like him – which increases the likelihood of a successful candidate being male.

A parallel can be seen in products. For example, I found a phone app recently when looking for an expense report app. Its promotional text said "This tool is useful for the busy businessman." The use of the term 'businessman' is a turn-off. Another example is a financial planning tool promotion that described a man coming home to a house gone wild – pots boiling over in the kitchen (presumably left by the woman), and kids running amok. These are probably second generation bias —the designers probably didn't mean to alienate women in their audience but no one noticed the messaging. There was no reason for this; wouldn't these fledgling companies prefer to appeal to a broader audience?

Another example is the recently launched Samsung Galaxy Gear watch [6]. It offers color options, so maybe that was considered the female selling point, regardless of whether or not it fit a woman's wrist.

Unlike some other smart watches, the built-in camera on the strap means smaller straps cannot be exchanged for the larger strap. Will they look for feedback for V2 to early adopters (those with large wrists, mostly men) or to the true broader potential market?

With more technology being molded to our bodies, I thought it would be obvious that gender considerations would be taken into account. This hasn't been the case, suggesting that we cannot assume the obvious. If physical appearance differences are overlooked, we must realize that less visible differences like behavioral and social differences will be overlooked even more, which means that we must increase engineering teams' mindfulness of gender considerations and not leave it to chance.

In this article I'm suggesting increasing gender awareness in teams that are building products and services in order to increase their appeal to the broadest possible audience from the start. The approach doesn't have to be costly, it need not slow down progress or inhibit innovation – but being deliberate has the potential to insure that a product won't accidentally miss the female market.

GENDER AWARENESS IN OTHER FIELDS

Gender awareness in development is not only a challenge for technology -- it has been identified in other industries, some of which have learned that it is better to be gender-aware than gender-neutral. The Gates Foundation has introduced the process of gender awareness into their project work. They realized that allowing projects to assume gender neutrality if the deliverable was for both men and women wasn't good enough. For example, one project had assumed that gender didn't impact the outcome as the project was to produce a better crop yield to feed a population. After interviewing mostly male farmers, they had a list of requirements, yet when they approached the women they discovered a different set of requirements. Women weeded the crops, cooked the food, and fed the families. They discovered that they had been designing only for the technical aspects of farming. Only by taking into account the women's views could they achieve maximum success. The Gates foundation now requires projects that they fund to be gender-aware; even a project that appears to be gender-neutral must be reviewed with a gender lens to insure that gender issues are raised and considered [7].

Civil engineering and architecture practices are increasingly taking gender-aware approaches. A space, structure, or engineering deliverable may be intended to deliver the same functionality for both men and women, but this doesn't guarantee that it will be equally appealing. This doesn't require costly design, it requires informed design – knowing the trade-offs that are being made at each step of the decision process. Vienna has been taking a gender-aware perspective in urban planning. The initiative is called the 'Fair-shared City'; the initiative avoided using the term 'gender' in the title to minimize anxiety and emotional charge [8].

CHANGE OF INFLUENCE

Gender-aware approaches are rarely found in software development. Once a team decides that the product they're building is not gender specific, once they conclude that it should be gender neutral, the topic may never be discussed again. It is this insufficient consideration that can inadvertently lead to negative consequences. For example, Margaret Burnett and her colleagues have identified different male and female preferences in tools for writing and debugging software; these differences are generally overlooked in the design of commercial software tools, which accommodate the preferences of male developers [9]. It is not a matter of choosing between them: Tools could include features that support both groups, but they generally don't.

Consider an historical analogy. Limitations of early computers forced people to adapt. Mathematicians complained bitterly about having to learn machine language to instruct the first computers. It was Grace Hopper who set out to "free mathematicians to do mathematics" by inventing the first compiler. She then led the design of programming languages that enabled more people to use computers. As the skills required of users changed, far more people used them.

Returning to our discussion, if the need is great enough, women will do what it takes to use an application. However, a company that delivers a solution based on consideration of the female audience as well as men in its design has a better chance of broad success in the market place.

As we look at the growth in services, apps, and devices, we see a world in which business success requires building products that have both a strong task appeal and a lifestyle match. Smart innovators know that to reach the largest number of users, they should not require anyone to change their lifestyle or behavior—adoption is easier when the product complements existing lifestyles and behaviors. It follows that accessing the broadest audience requires understanding the behaviors and desires of both women and men. Women's influence in consumer and business spending has increased dramatically in recent years and their engagement with technology has evolved. Women are the major decision-makers in the acquisition of several major product categories: healthcare, finance, and education. Women are the most active users of social networks and online shopping sites, spend the most time playing online games, and even when not they are not the early adopters of a technology women provide a stable mass market. In the workplace, more women are in influential line management positions in companies and businesses than before and they create a large number of new small businesses. Landing a product badly with women increases the chance of failure. Women are a significant, lucrative audience that businesses should not ignore or fumble through inadvertent gender blindness.

So how can companies address gender blindness, given that the number of women in tech companies is not increasing rapidly enough to align with the customer base for technology products?

As noted above, user-centered design (UCD) methods can be part of addressing this challenge. However, those of us who have applied user-centered design methods in technology companies know that to be successful, one must be strategic in prioritizing where to invest time and effort in persuading others. We also know that critical product decisions are often made outside documented processes: They are made in hallway conversations, in pre-meeting discussions, and through differing interpretations of ambiguous rules and criteria.

So rather than looking to UCD as the only solution to gender blindness challenges, engineering teams must use a gender lens to examine their entire product development cycle to discern where problems arising from gender blindness can appear.

GENDER DISTRIBUTION

Before we look at how products are created, let's start by considering the gender distribution within software engineering teams. Engineering teams are predominantly male, reportedly approximately 80 percent [10], though I personally have always experienced a much lower percentage of women on engineering teams. This low percentage is no surprise given the number of women graduating from computer science programs. For simplicity, imagine a development organization that is 20 percent women, with a much lower percent of women in management positions. Now ask yourself, what's the likelihood that this team can develop a product free of gender-bias for a user base that is 50 percent women and 50 percent men?

Many decisions in the design and development of a complex product or service are made under time pressure by individuals with limited access to information. This means gut-based decision making, or minimal time to look at data. Data that are considered are probably subject to confirmation bias: "Do we have data that support my opinion?" The consequence is that this spontaneous decision-making is made by four times as many men as women (left side of Figure 1), and possibly nine times as many male managers as female managers. Even with no intention to not design for women, speedy decision making contributes to gender bias.



Figure 1. Can the product team on the left build for the user population on the right?

LOOK WHO'S TALKING

Every team member brings a set of insights and experiences. Their perspectives are shaped by their own life experiences—their age, family, education, country of origin, and so forth. I interviewed women and men at different levels of seniority and in different job disciplines. The interviews had two goals: To understand the ways people let personal opinion influence their work on products, and to gauge the impact of personal opinion on the design of products for men and women.

When first asked, men often assumed that the products they were building were gender-neutral because they weren't being built specifically for either men or women. However, when asked to reflect on whether a workforce that is approximately 80 percent male could take into account the female perspective to deliver gender-neutral products, their uniform answer was a sheepish "probably not." Women's first response to the same question was a confident confirmation that their products definitely had a male bias. My questions and topic did not seem as novel to the women I interviewed as it did to the men.

I began the interviews by asking whether personal opinions arose in their work and their decision making. People in every discipline except market research and user research said that yes, they did surface their personal opinions or personal agendas in decision making.

Several factors that led to voicing opinions in decision-making contexts were shared across gender and discipline, such as enthusiasm for getting something that they personally wanted to use in the product or to have the product solve a problem they once experienced. The more a product was something managers and team members would use personally, the more they were aware of bringing personal experiences to decision making—designing for their own benefit. One man noted that he expressed many opinions when working on a gaming platform and fewer when he worked on software for medium-size businesses, with which he had no personal experience. A similar comment was made by a male developer working on a women's shopping experience. People also reported that when they really wanted a product to be liked they expressed enthusiasm for increasing exposure to a feature or adding options for additional features. A third category of personal opinion arose from hidden agendas based on the person's professional discipline, such as the desire to benefit by trying a new approach or tool. For example, a quality assurance manager reported angling for a particular outcome because it would permit her team to try a new engineering approach.

Market researchers and user researchers claimed they did not bring personal opinions and agendas to discussions because credibility for providing unbiased insight from data is critical to their role. A user researcher commented she might like to bring her personal perspective to a discussion, but her top priority issues took all the time and there wasn't bandwidth to add personal interests to the discussion. As is discussed below, there are ways researchers can stay true to data and results yet combat gender bias in research approaches.

One type of opinion that is rarely voiced during product development is opinion that exposes gender differences. Of the women who said that yes, they do bring opinion to the table, all said explicitly that they do not raise perspectives that are related to gender. They described three reasons for not sharing gender-based opinions:

- Women do not want to offer ideas or feedback that would require identifying with women's needs because often they do not want to draw attention in the room to the fact that they are women.
- It is easier to generate support for a gender-neutral requirement, so if battles are to be picked it is better not to tackle a gender-specific case.
- For women who have learned to act like 'male-white-geeks' at work, considering a female perspective often doesn't cross their mind in workplace settings.

The interviews revealed that personal opinions influence decision-making, but the fact that women aren't comfortable to voice their opinions if it is rooted in a female perspective suggests that including some women on a team will not correct for gender bias in the product. Unless organizational cultural dynamics are changed companies will not benefit from these opinions.

These findings are similar to those reported by Mendelberg and Karpowitz [11, 12], who examined how the positions of group participants vary depending on the percentage of women in the group. Women are reluctant to raise certain issues in a face-to-face situation unless a group consists of 60 to 80 percent women; they have no reservations in raising the same issues in an anonymous survey. In contrast, men will voice their opinions when in the minority.

Recently, Paola Antonelli, a senior curator at the Museum of Modern Art, while attending the World Economic Forum at Davos, wanted to pose a question related to gender representation to a panel of 5 white men [13]. Even though she is a highly successful professional, she asked a male colleague to ask the question to avoid being the female raising a feminine issue. There are real and perceived risks associated with raising a feminine point of view, especially if you're female.

Clearly it will require more than 20% representation of women on engineering teams for the power of their full points of views to be leveraged unless we think differently about our processes, organization, and approaches to communication. Methods for achieving a higher percentage of females on engineering teams, and changing organizational cultures to be more inclusive, are important topics, but this paper is not about solving those enormous challenges. It is about making sure that today's innovations don't ignore women's perspectives. This will have a two-fold benefit: making better products for women and increasing the size of a business's customer base.

THE INFLUENCE OF GENDER ON THE ENGINEERING PROCESS

The goal of this article is not to preach about changing the gender distribution in IT (which when successful will contribute to reducing gender blindness), but to pragmatically outline how an engineering team can raise awareness of the drawbacks of inadvertent gender bias, monitor it, and take steps to reduce its impact.

A product or service development cycle can be represented in different ways, but the process phases basically include concept, early development, development, and release and adoption. Most product teams can point to a systematic process, such

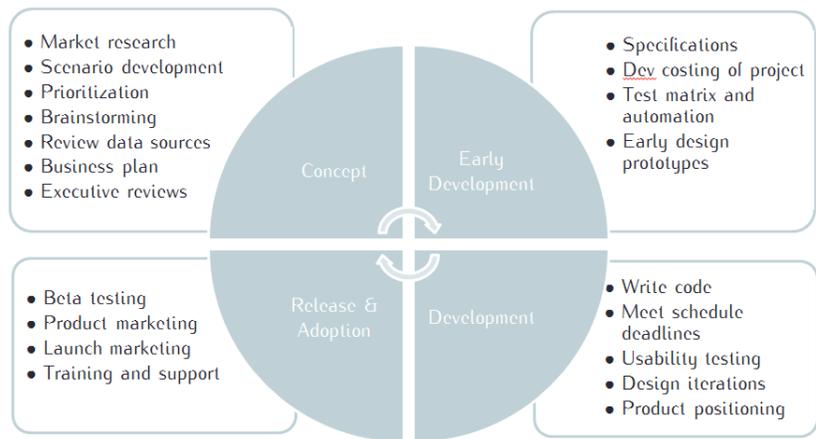


Figure 2. A typical product cycle.

as agile development or a waterfall model, can highlight critical decision points, and can identify the job roles responsible for decisions. Yet everyone working on the product knows that hundreds of decisions are made daily by individuals under time and resource constraints. Even engineering teams that claim to be doing 'lean development' with customer feedback loops can benefit from reviewing how they make decisions, as it's highly likely that gender bias affects the process. By reviewing the engineering processes implemented during a typical product cycle, we can start to identify where gender blindness can occur and consider simple, inexpensive steps to prevent it.

CONCEPT AND EARLY PRODUCT DEFINITION STAGE

How are products and services conceived in the first place? Experience tells us that they are initially derived from a vague understanding of a customer need in the marketplace, paired with an inspired idea based on knowing what technology is capable of and influenced by a revenue opportunity.

Personal needs and experiences are often a source of ideas in early concept phase. Ideas and hunches are offered during brainstorming or blue-sky idea sessions. Brainstorming rules often explicitly state that 'No ideas are bad ideas' in hope of ensuring that all ideas are shared. Yet this approach will not reveal all ideas if women are uncomfortable offering female-informed ideas in group situations. The women I interviewed

said they are very cautious about sharing female perspectives in brainstorming sessions because they don't want to put out an idea that is met with silence or generates little discussion. Gender blindness is also found in prioritization approaches that can follow brainstorming, such as Six-Sigma's lightweight cumulative-voting systems intended to build consensus. It seems democratic—everyone has the same number of votes—but without balanced gender representation, it is less democratic than one might think. In this way, scenario ideation sessions can end up with few ideas informed by a female perspective, compounded by women's lower voting representation. Ideas that women value are discarded early.

If a product is assumed to be without gender bias, market research may ignore gender in their collection and evaluation of data, or may give it a cursory glance as a top level variable but not review it in sufficient depth to reveal potential differences, given the expectation that no differences should exist. One market researcher told me that they were only asked to dig into gender data after the wife of an executive told him how badly positioned for women his product was in the market place; she felt it didn't match her experience. When they looked into it they realized they had missed a huge positioning opportunity—they had overlooked significant gender differences in the data.

The process of creating vision pitches usually includes animated discussions to synthesize input into a single perspective or a single story that will be easy for an investor to consume. This can be a rigorous process, but generally data to support or dismiss positions are combined with ideas that the team has, leading to the creation of a storyboard walk-through of scenarios that the product is to support. The next step is to find funding and sponsorship, perhaps from an executive within a large company or from an investor. Unfortunately, female representation here is low. The majority of executives and investors (venture capitalists and angel investors) are men [14]. This creates two challenges: to shape the idea to appeal to the funder; to overcome gender challenges if a woman is making the pitch.

A short list of must-haves for pitching includes knowing the product's potential customer base, its ability to scale to make money, and an exit strategy. However, it is also advisable to have the pitch appeal emotionally to the investor. Gender plays a hand here when a pitch presentation is enhanced to appeal to the executive personally—for example, highlighting his favorite NFL team in the demo, including his face and friends on a social networking feature, or using photos of fast cars and stock prices. These simple edits to a pitch design prototype can charm an executive, but in the long term they can be detrimental to gender neutrality if the style of a product is influenced by the initial presentation and subsequent discussions that highlight a particular appeal, visual style, or feature enhancement.

The second challenge here is not in the product cycle, it is in gender bias in investing culture. Investors may intend to be gender-neutral, but more than 90% of venture capitalists are male. They generally give money to their extended networks, which are likely to include fewer women. 92% of founders of funded startups are male [15]. Amplifying the gender challenge, women pitching an idea tend to be more conservative in estimating the potential success of their prospective ventures, which does not generally

excite investors; more men, in contrast, are comfortable being very optimistic about outcomes. If unaware of this bias, who will a male investor more likely back?

Technology innovations that specifically target women can also be hampered by the bench of male investors. I'm a regular viewer of the television show 'Shark Tank' in US ('Dragon's Den' in the UK), in which entrepreneurs pitch ideas to a panel of 5 investors including one woman (occasionally two). The male investors regularly seek input from the female investor when the product being pitched is for women. If the female investor isn't interested, the male investors generally pass on the investment; they have no 'gut' reaction. They invest based on intuition and experience, which is not as helpful with products for women. This outcome is also reported in organizations--buy-in from male executives is less enthusiastic for a product that doesn't personally resonate with them. I spoke with a male engineering manager whose job involved championing products designed for females. He explicitly said that when working on a product directed at women, he depended on insights from customers and female team members because he knew he didn't have good intuitions about customer needs. His degree of insight is not common.

To an HCI professional it is encouraging to see the use of scenarios and personas in planning stages, but these also introduce challenges and require monitoring. An incubation team working on new technologies once presented a scenario to me in which a woman asked her husband to get flowers for the hosts of a dinner they were attending later that night. When I saw the image in the prototype of a big beautiful bouquet in a basket, it communicated, 'Congratulations on the birth of your child,' and not 'Thanks for the nice dinner.' I realized that no woman had been consulted by this all-male team. The seemingly innocent error of selecting a big extravagant bouquet image had cascading effects. It implied business models and other features that wouldn't have materialized had the image been a bunch of tulips. The project was subsequently abandoned.

THE DEVELOPMENT PHASE

The development phase of product creation can be scary for diversity consideration. Development teams make tradeoffs among features to code as they struggle to meet a ship date, basing decisions on 'informed' opinion (informed to the extent that confirmation bias can be avoided). At the same time, tradeoffs are made in terms of design – the initial push in coding focuses on functionality, and despite good intentions to leave time to code the design to meet the 'red-lines' (images that designers provide developers to define the design in detail), it is a negotiation. To be fair, every discipline makes trade-offs. Decisions are guided by explicit and implicit principles. Explicit business-focused principles can rely on scorecards, bug counts, or feature sets. Implicit principals are derived from personal experience, priorities and opinions (which could reflect a person's job discipline, personal experience, or personal agenda), and they surface in meetings where loud voices and force of personality make a difference.

As mentioned earlier, when team members consider themselves to be representative users they rely more on intuition. When ideas are reviewed by peers who are similar to themselves, their confidence in their shared intuitions is reinforced. When personas (or similar design constructions) are not used, male pronouns are usually the default in descriptions. A colleague who moved from a large software company to a commercial merchandising dot-com told me that it always takes her by surprise when a senior manager refers to a hypothetical user as 'She' rather than the default 'He' she'd been accustomed to. And even when a female persona is used in a scenario, a male team might not notice incongruities that undermine its realism.

Market researchers and user researchers I interviewed claimed to not use personal opinions, which may be true when they report research data, but bias could still affect their initial research questions and methods. One researcher commented on bias in the approach to researching shopping, a task known to have gender differences. She loved shopping and thought it would be great to work on that feature area. The male researcher who got the assignment saw shopping as a chore, not a task one could get pleasure from. Who would have been more appropriate for the assignment—a researcher excited and personally connected with the task or someone reluctant to engage with it?

THE PRODUCT RELEASE PHASE

The final stage of product development typically includes a beta cycle. The original purpose of beta releases was to have people outside the development team use the product in different environments and find bugs. Today, qualitative feedback captured during betas is mined to guide the next version of a product. A typical beta user is a male who is unafraid to try buggy software (and who perhaps has time available to try it).

To their great credit, many quality assurance (QA) testers today work to get representative users to install betas; however, because the feedback tools typically input data into bug databases and often don't easily accommodate feedback from non-geeks. We are seeing investment in efforts to make the experience less daunting—another good thing. Nevertheless, obtaining representation from women in the beta process requires a team to consider whether or not women are sufficiently motivated to try a beta product or service that is intended to be gender-neutral, and more fundamentally, whether women have the time to participate. These issues—simplifying beta tools and locating female participants—could be costly for a business to address; the return on investment must be examined, but proactively acknowledging that beta feedback often suffers from significant gender bias should be acknowledged and managed.

Prior to a product or service being released, quality gates can be established to determine when it is ready. Easiest are gates with quantitative criteria that can be measured regularly and tracked on dashboards. Diversity criteria are established by policies such as accessibility regulations or language requirements that

must be met to sell into certain markets. In contrast to these positive steps, insuring that a service is optimally designed for both genders is not generally a requirement. Quality gates are measurable, but gender blindness influences priorities for identifying features. The more significant to the committee in charge a bug or scenario is, the higher the likelihood it will be addressed. Of course, if the creation and execution of the measures of the quality gates are without bias, gender criteria won't be required, so that should be a focus.

Eventually the product or service ships. It is in the hands of the public. Early adopters are usually disproportionately men. When the first version is released, the development team pays attention to press reviews, often written by male journalists, feedback in forums (often from male early adopters), blog posts, and so forth. The team decides how to improve the product, often without realizing that the feedback is predominantly from men. The female adoption curve is slower, but women are often more loyal to a product or service than are the early male adopters.

Finally we reach advertising. In advertising a product intended to be gender-neutral, bias can once again subvert the intent. In one case, a product team previewed an advertisement for a gender-neutral game. The advertisement included a joke at the expense of a woman. The team was male except for one woman, who said nothing but later expressed shock to the senior manager, observing that if the ad had poked fun at people with disabilities or a racial minority, no one would have approved. She had the courage to communicate her female perspective—not in the meeting, but the private communication was effective. The manager realized that she was right and blocked the release of a potentially offensive ad.

WHAT CAN BE DONE

Building successful products and services without gender bias need not await a more gender-balanced workforce, although achieving such a workforce will help. I believe that technology teams want to make the best products possible for their customer base. They do not want to be blind to gender bias. Below are suggestions designed to help teams remove unintended bias and to enable the views of women to be heard. Removing blindness doesn't require costly efforts, laborious processes, or more hurdles; the key is raising awareness and understanding that bottom-line profitability can be impacted if habits don't change.

COSTS NOTHING

1. Always use 'she' as the default pronoun in your company.
2. Executives and investors should push back on personal appeal customization in demos and pitches. They should ask for female customer representation in demos and prototypes.
3. Require that data in presentations be broken down by gender (e.g., beta feedback: 92% male, 8% female).
4. Don't misrepresent wives, daughters and mothers in discussions—ask them, text them, call them, use them as data sources, but don't assume you know their answers.

SMALL EFFORT

5. Investors and executives should have a trusted female reviewer for balanced insight.
6. When brainstorming activities are important, assemble one group that is all women, or at least 60% female.
7. When using informal voting systems, consider equal vote distribution by gender.
8. Have a representative who is comfortable channeling ideas and feedback on products from women on the team, including
 - a. Feedback on designs
 - b. Quality criteria discussions
 - c. Any other product and marketing specific issues
9. Allow women to post anonymous product feedback related to 'improving the product from a female perspective.' Explicitly consider gender suggestions and differences.
10. If a team believes there is no gender difference in behavior or preferences, then challenge the team to do female-only research to balance the high male engagement in building the product.

BIGGER THAN SMALL EFFORT

11. Convene women panels of early adopters to balance the more technically proficient male early adopters.

In summary, business opportunity is the driver for reviewing how products are built and where gender bias blindness influences outcomes. Women are playing a more substantial role in the workforce and in how money is spent; therefore it behooves businesses to insure that they are not blind-sided by an erroneous belief that gender-neutral products happen by chance. Businesses need to be gender-aware in order to be deliberate in their process. This article is not about driving change to increase the number of women in software development—that remains a complex systemic challenge. It is about raising awareness of bias in processes where there is immediate opportunity for change, and the reason to change is business opportunity.

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Gayna Williams is founder of If She Can I Can, and passionate about increasing the value of women: to themselves through career and leadership development, and to business through increasing female customer value. She provides workshops, custom training and coaching for women and for businesses. Her extensive industry experience includes working at Microsoft for more than 17 years as Director of User Experience for a broad range of products including Windows, MSN, Internet Explorer, Education Products, and Developer Communities. As a consultant she has worked with tech Fortune 500 companies, government agencies, and non-profits.

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