

### Research Question:

What are the key practices that STEM & manufacturing based companies are deploying to drive improvements in the diversity of their workforce, particularly as it relates to improving the number of female leaders?

### Introduction:

Studies have shown that approximately 67% of U.S. manufacturing companies are currently facing a worker shortage <sup>(1)</sup>. This rate is dramatically higher than that of other private firms in the U.S. (See Appendix A). Subsequently there has been a huge push to **recruit and advance female employees**, which have been historically underrepresented. In order to do so, it is strongly encouraged that companies follow a strategy of Attract, Develop, Engage and Retain (A.D.E.R.) and employ as many best practices as possible.

### Attract:

There has been a recent push in STEM and manufacturing companies to attract and recruit women. This is in part due to the rates of women graduating college is now exceeding those of men, thus it makes sense to expand recruiting efforts to make them more attractive to female applicants. Here are some of the best practices recommended to improve the attraction of female applicants:

- **Send female representatives as recruiters to college career fairs** <sup>(2)</sup> – The practice creates a more diverse and inclusive image from the start of the recruit's experience with the company.
- **Endorse STEM education initiatives in high schools** (particularly those in local areas and those in which women are best represented) <sup>(2)</sup>

**Case Study:** Cisco has gone as far as to endorse a study which identifies the location of schools with the highest levels of STEM participants, the rates of employment in fields applicable to those eventual graduates and the breakdown according to gender <sup>(3)</sup>.

- **Eliminate gender specific information on résumés and job application forms** <sup>(2),(4)</sup> – The removes the bias from the process and allows for assessors 'to focus on skills and capabilities' <sup>(2)</sup>.

### Develop:

In order to develop the female employees, it is important to have a work environment which has been developed to reflect the organization's need for gender diversity. Unconscious gender-bias (which exist in a variety of industries) can destroy HR policies designed to improve the performance of female employees. In addition, STEM employees require a diverse set of skills that must be developed over their careers and policies need to be in place to ensure the consistent practice of this development strategy. Below are some practices which have been recommended by studies to improve the development of women in STEM and manufacturing companies (including the case study of Verizon):

- **Organization: Develop relationships with key professional organizations and career influencers** <sup>(2)</sup> – Developing connections and partnerships from the very beginning of an employee's journey will result in improvement scope for development in the future.

**Case Study:** Verizon sought to develop its female leaders by partnering with PRISM International Inc. which is a professional body dedicated to further women in business through events and forums. In doing so, Verizon has created a commitment to improving the representation of women in leadership positions has acted as a "catalyst for numerous diversity and inclusion skill building and personal development opportunities for women" in the company <sup>(6)</sup>. The efforts have been internationally recognized for their success in improving diversity.

- **Organization: Implement diversity indicators for the benefit of the company** <sup>(4)</sup> – The use of metrics can allow for the identification of any company wide gaps in diversity. These should include figures of female populations per business units, pay levels (and any subsequent gaps which may occur) and attrition rates. These statistics should be systemically re-calculated and monitored in efforts to eradicate any problems which may result from the first set.
- **Employee: Use customized learning and development plans** <sup>(2),(5)</sup> – These plans allow for individually-based development to occur. They should be shaped to improve 'technical, leadership and managerial skills' and be directly connected to 'career planning, coaching mentoring and networking opportunities' <sup>(5)</sup> to create a rounded and inclusive approach to development.
  - These should develop a clear understanding of the skills required for advancement, encourage the participants to identify a personal target, recommend self-assessment to highlight any skills gaps and use experiential-based learning (identify on-the-job challenges) to fill in any gaps <sup>(2)</sup>.

## Engage:

Developing and engaging employees are synonymous terms, however, studies have shown that STEM workers are frequently more attached to their specific role in the company rather than the company itself <sup>(5)</sup>. In an effort to stimulate employee (specifically female) engagement, the following practices have been recommended:

- **Mentoring, sponsorship and coaching programs should be established and participation should be encouraged** <sup>(2), (4), (5)</sup> – These practices link employees together and create a sense of commitment beyond their role. They facilitate work in networking <sup>(4)</sup>, an informal practice often felt to be difficult for women to participate in. Some studies even recommend that participation in such programs be a promotion criterion <sup>(5)</sup>.
- **Making Executive participation in initiatives is essential** <sup>(2), (4), (5)</sup> – Senior progress and participation in all diversity programs should be linked to incentives and rewards <sup>(4)</sup>. This creates a top-down approach to work/life balance and flexible work policies and organizational support for the policies which will encourage workers throughout the organization to follow suit.
- **Create training programs that improve awareness of inherent gender bias in organizations** <sup>(2), (5)</sup> – Women are often described as not quite ‘fitting in’ to a company’s culture, a thought primarily driven by an unconscious bias against women in STEM and manufacturing positions (particularly those of high influence). By simply admitting that this exists, companies can take the first steps to eradicating this attitude and encourage reflection on thought processes which affect the female working populations.
- **Establish women’s networks to reinforce diversity stance of culture** <sup>(4)</sup> – Create semi-informal networks geared at improving female development and simultaneously engage them in the company.

**Case Study: *Procter & Gamble*** have created the **Corporate Women’s Leadership Team (CWLT)** <sup>(7)</sup> to help ‘ensure that women’s skills and insights are well represented throughout our global company, and all levels of leadership’. The company is aware that the majority of its customer base are female and thus appropriate organization of the workforce to reflect that fact is essential. The team is very involved in P&G events which involve mentoring, sponsorship, flexibility and leadership skills development. As a result of their efforts, substantial improvements have been made in the representation of females in management positions in the company (See Appendix B).

- **Reward teamwork values in promotion and evaluation process** <sup>(5)</sup> – This is conducive with switching the reward and appraisal structures from being ‘presence-driven’ to being ‘results-driven’ <sup>(2)</sup>. By rewarding high-performing groups as opposed to singling out individuals, the company eliminates bias favoring those who typically work long hours (men) and creates a more balanced culture for women to participate and be rewarded in.

## Retain:

Ultimately, retaining competent and hard-working senior female leaders is the goal of the STEM and manufacturing companies. In order to do so, the following practices have been recommended to foster and reinforce a culture of inclusion and balance and thus successfully implement HR policies designed to benefit the female employees and those employees with a family:

- **Establish a positive attitude within the company towards work-life balance** <sup>(2), (5)</sup> – Introduce policies such as *parental leave* (not maternity leave), emergency childcare and both on-site and off-site daycare facilities or options <sup>(5)</sup>. The key with this practice is multitude. If there are more options available for the employees, they will perceive the organization as having a vested interest in their experience with the company and thus be more likely to use the programs without fear of repercussions.
- **Create an inclusive and flexible work environment** <sup>(2), (4), (5)</sup> – Studies have shown that by increasing the flexibility, job satisfaction and engagement, and health statuses in employees, the rates of employee retention remain high <sup>(2)</sup>. It has been suggested that **diversity indicators** (as mentioned above) could be used to make appropriate changes in policies and, indirectly, culture <sup>(4)</sup>.

**Case Study: *Kraft Foods*** was experiencing challenges in ‘employee dissatisfaction, particularly among hourly workers in manufacturing plants’ <sup>(8)</sup>. Their solution was to adopt ‘a flexible work options program called “Fast Adapts” for hourly employees and production supervisors who work in 24/7 facilities’ <sup>(8)</sup>. The program allows for workers swap shifts with co-workers and to pick up shifts of absent (ill) co-workers. The result was an improvement in employee satisfaction regarding the work-life balance integration in the organization <sup>(8)</sup>.

## Conclusion:

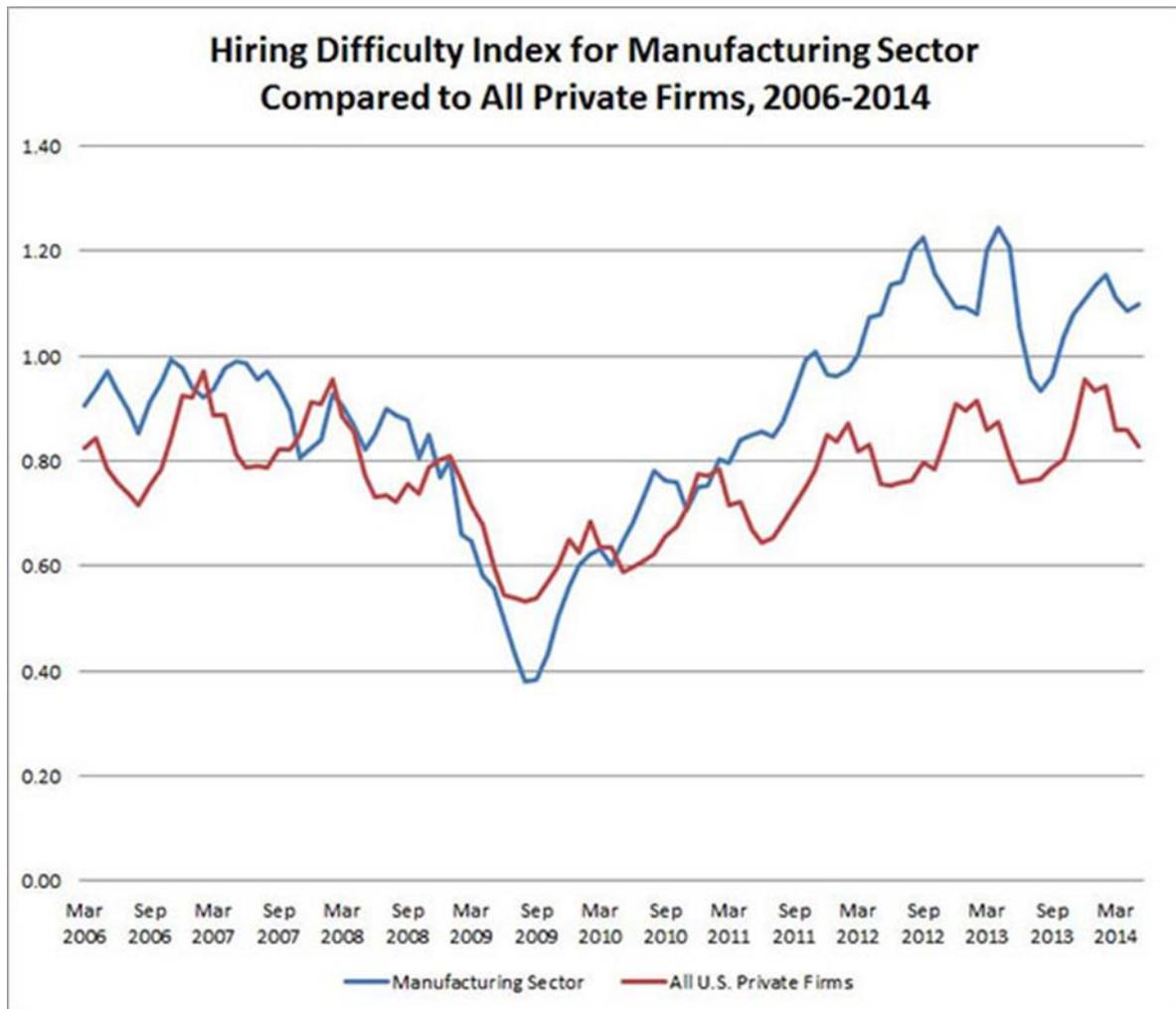
There are many A.D.E.R best practices for creating and capitalizing on gender diversity in STEM and manufacturing and case studies which showcase the resulting positive effects. In order to maximize the female representation in these industries, it is recommended that as many of the aforementioned practices as possible are used. This will modify the internal culture of the company to become more inclusive and result in the attraction and retention of a more diverse workforce.

## Works Cited:

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## Appendix A

‘STEM Shortage Is Most Acute for Manufacturers’



Source: <http://www.industryweek.com/stem-roots>

## Appendix B

Proctor and Gamble. Diversity and Inclusion Annual Report 2013-2014

<b>Leadership Metric</b>	<b>2000</b>	<b>2014</b>
<b>Total female managers (globally)</b>	n/a	44%
<b>Women at the president executive level</b>	8%	20%
<b>Women at senior executive levels</b>	15%	30%

Source: [http://www.pg.com/en\\_US/downloads/company/purpose\\_people/PG\\_DiversityInclusion\\_AR\\_2012.pdf](http://www.pg.com/en_US/downloads/company/purpose_people/PG_DiversityInclusion_AR_2012.pdf)