

Summary of Recent Research on Gender & High-tech Startups

National Center for Women & Information Technology (NCWIT)

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HIGH-TECH STARTUPS typically use one of five types of employment models. These models reflect founders' ideas about hiring and managing employees, and they have long-lasting effects on firms. Employment models predict the trajectory of women's representation among core technical staff, with one type standing out as least congenial.

Each employment model combines certain founder beliefs about how employees attach to firms, appropriate selection criteria, and proper methods for controlling employee behavior. The table below lists the main types of employment models from most to least common, and it identifies the models' characteristic assumptions about employee attachment, selection, and control.



TYPES OF HIGH-TECH STARTUP EMPLOYMENT MODELS

| MOST COMMON ↑ ↓ LEAST COMMON | | Attachment | Selection | Control |
|---------------------------------------|-------------------|------------|--------------|---------|
| | Engineering Model | Work | Skills | Peer |
| Star Model | Work | Potential | Professional | |
| Commitment Model | Love | Fit | Peer | |
| Bureaucratic Model | Work | Skills | Formal | |
| Autocratic Model | Money | Skills | Oversight | |

ATTACHMENT refers to founder beliefs about why employees join and stay with the firm. Founders assume that employee attachment is motivated in one of three ways:

1. Interesting and challenging **work** binds employees to the firm.
2. Emotional attachment, or **love**, that comes from a feeling of belonging binds employees to the firm.
3. A simple exchange of **money** for work binds employees to the firm.

SELECTION refers to criteria for hiring. There are three types of criteria for hiring:

1. Employer focuses on applicants' **skills** and experience.
2. Employer focuses on applicants' **fit** with the organization's culture, values, and current employees.
3. Employer focuses on applicants' **potential** for successfully tackling the types of projects that the firm will face over time.

CONTROL refers to methods for ensuring that employees perform at high standards. There are four main types of control:

1. Founders expect that employee behavior will be molded by the firm's culture and by **peer** pressure.
2. Founders expect that employee behavior will be molded by **professional** socialization that instilled a commitment to excellence.
3. Founders expect that employee behavior will be molded by direct **oversight**.
4. Founders expect that employee behavior will be molded by **formal** procedures and systems.

As the Table shows, each model has a different blend of assumptions about employee relations. These assumptions lead firms to exhibit common characteristics.

ENGINEERING MODEL firms are the most common in this* Silicon Valley population of firms. Employees are motivated by their interesting and challenging work, and they have a strong peer culture built on demonstrated performance.

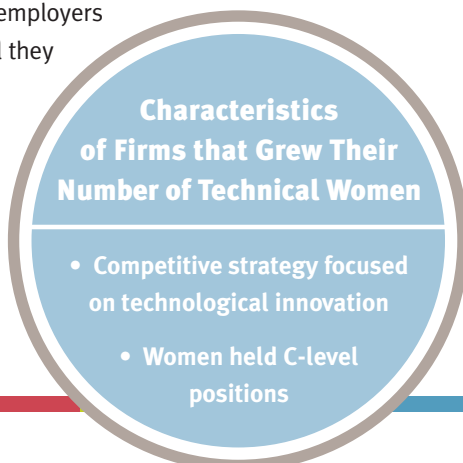
STAR MODEL firms are similar to those seen in academic life sciences departments. Like the Engineering Model, employees are motivated by their interesting and challenging work, but in contrast to the Engineering Model, individual “star” talents are more valued than the collaborative team.

COMMITMENT MODEL firms’ employees exhibit strong feelings of belonging to the firm as they belong to family. So, new additions must fit, not stand out as they would in a firm using the Star Model.

BUREAUCRATIC MODEL firms are less personal and emotional than those with a Commitment Model. Their employees are drawn by interesting work and selected for their demonstrated skills, but interactions are formalized in policies and standardized procedures that can ensure everyone is treated similarly.

AUTOCRATIC MODEL firms are very task-oriented, but the task itself is not what motivates employees.

According to this study and other studies of these high-tech firms, employment models had long-lasting effects on the inclusion of women in technical core functions. These effects influenced how much the number and percent of technical women grew over time. Because employment models are not easy to change nor is it advisable to change them, employers should recognize the model they use and either mitigate or capitalize on its effect.



TECHNICAL WOMEN

In most study firms, the number and representation of women in the technical core grew over time. On average, technical women’s representation rose from 11 percent at the end of the first year to 17 percent by the middle of the company’s fifth year.

Firms based on the Commitment Model, however, demonstrated less growth in the number of technical women over time. They seemed to hire fewer of these women than did firms founded on different employment models. Because this model is also associated with startup success, the poor trajectory for women is a serious problem.

There is no reason to assume that the Commitment Model cannot be congenial to technical women. Lackluster hiring in these firms is likely a consequence of the strong emphasis on fit with the organization’s culture, values, and current employees.

Under these conditions, stereotypes about who belongs can have a profound effect. It therefore becomes essential that firms based on the Commitment Model be especially sensitive to implicit biases in their hiring practices.

Finally, there were other characteristics of high-tech startups that correlated with women’s representation in the technical core. Most interestingly, firms that competed primarily through technological innovation had larger numbers of women both at founding and over time. The researchers speculated that this competitive strategy promoted meritocratic hiring, which improved women’s chances. Also interesting and useful is the finding that having more women at the very top positions in a company, i.e., C-level executives, generally led to more women in technical positions as the company grew. Together, these findings call attention to the implications of decisions made when a firm is founded. With planning and attention, new high-tech companies can become even more gender-balanced as they mature.

*Source: The research findings reported here result from work published in 2007 by James Baron, Michael Hannan, and M. Diane Burton using data from the Stanford Project on Emerging Companies. The data were collected from 173 high-tech Silicon Valley firms founded between 1982 and 1994 and employing at least 10 people in 1994.

A key publication is Baron, J.N., Hannan, M.T., Hsu, G., & Kocak, O. (2007). In the company of women: Gender inequality and the logic of bureaucracy in startup firms. *Work and Occupations*, 34(1), 35-66.



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