

# Skills of Women Technologists

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## INTRODUCTION

Women technologists practice careers in various fields of information technology. They traditionally are educated and trained to acquire primarily technical skills. However, in response to organizational change and industry shifts, today's women technologists are acquiring a multitude of diverse skill sets—on top of their conventional technical skills—to excel and succeed in the workplace.

This article delves into various skill sets in today's IT workplace and how women technologists have adopted and updated their skill sets to redefine their role to align with today's industries.

## BACKGROUND

### Skills

A skill is defined as a proficiency, talent, or ability that is developed through training, education, or experience (Beckhusen & Gazzano, 1993, p. 10). Throughout a woman technology professional's career, a unique combination of on-the-job training, technical apprenticeships, internships, job shadowing, and formal education results in acquiring basic skills. This basic foundation later develops into specialized expertise through years of work experience (Gordon, 2000, p. 133).

Skills vary in use and purpose. Beckhusen's et al. work (1993) on strategic skills assessment divides skills into five main categories. This assessment is an excellent baseline, which covers numerous skill sets of technology professionals. Some skills are transferable and portable, and thus are listed under multiple categories. The following are the seven main skills categories.

### Creative Expression Skills

Skills in this category are designing, developing, authoring, composing, displaying, inventing, performing, and producing (Beckhusen et al., 1993). Skills of creative expression serves key for technology professionals involved in such roles as architecting software, designing user interface or developing new hardware. They use their artistic inclinations to develop innovative solutions and designs. Examples of technical professionals who have highly developed creative expression skills are software developers, Web designers, graphic user interface (GUI) designers, and research/development specialists.

### Communication Skills

Skills in this category consists of consulting, facilitating, explaining, speaking, writing, interviewing, persuading, selling and motivating (Beckhusen et al., 1993). Communication skills are critical for successful interaction between various stakeholders of projects—from the client and all the way to the project team. Communication is vital throughout all phases of project management, planning, and development processes. Gill (2002) states that communication is a major determinant for the success or failure of a project. Brooking (1999) adds that in an organization, it is important to know “who needs to know what” and make sure they get the information they need at the right time they need it. Examples of these technical professionals with highly developed communication skills are project managers, functional analysts, business analysts, technical writers, documentation specialists, and system diagrammers.

### Mental Creative Skills

Skills in this category consist of intuitive, conceptualizing, brainstorming, improvising, memorizing, syn-

thesizing, and visualizing (Beckhusen et al, 1993, p. 10). Advances in technology that are results of using mental creative skills are expert systems that capture deep knowledge to derive conclusions based on if-then analysis (Brooking, 1999, p. 89). Examples of technology professionals that rely heavily on mental creative skills are software engineers, architects, project managers, quality assurance testers, systems assurance analysts, and performance capacity analysts.

### **Mental Analytic Skills**

Skills in this category consist of analytical, budgeting, categorization, editing, investigating, observing, monitoring, researching, and problem solving (Beckhusen et al., 1993, p. 10). Mental analytical skills are used extensively during information management efforts that are both the responsibility of business experts as well as the information technology functions. Information is seen as having a key role in business processes (Evernden, 2003, p. 6-8). Examples of these technical professionals heavily utilizing these skills are database administrators, programmers, functional leads, business analysts, and systems analysts.

### **Leadership/Management Skills**

Skills in this category consist of initiating, coordinating, deciding, delegating, implementing, organizing, mediating, negotiating, and supervising (Beckhusen et al., 1993, p. 11). These skills are used by developers and testers when coordinating a team, organizing a meeting and supervising progress. Furthermore, according to Cohen (2002), exceptional negotiation skills are at play when the team ends up mutually committed to fulfilling the agreement they have reached (Cohen, 2002, p. 3). Technical professionals having strong leadership skills are project managers, senior architects, lead system administrators, technical leads, and Web directors.

### **Physical Skills**

Skills in this category consist of building, constructing, operating, and restoring (Beckhusen et al., 1993, p. 11). Physical skills are directly used by profes-

sionals dealing with computer hardware in performing troubleshooting, configuration, set-up and installation tasks. Examples of technology professionals requiring strong physical skills are computer technicians, PC operators, help desk support specialists, customer support representatives, telecommunications specialists, and infrastructure support personnel.

### **Humanitarian Skills**

Skills in this category consist of advocacy, coaching, mentoring, counseling, instructing, listening, and training (Beckhusen et al., 1993, p. 11). Humanitarian skills include empathizing and building rapport with fellow project team members. Empathy is the art of relationship building and used by project team members to show their support for team performance. Rapport is insightfulness regarding other's feelings, motives, and concerns (Johnson, 1997, p. 230). These skills are exhibited by all technical professionals such as trainers, managers, team leads, and LAN administrators as they do their daily jobs.

## **SKILLS OF WOMEN TECHNOLOGISTS**

Women technology professionals possess diverse and multiple skill sets that enable them to successfully work in their field. As industries and businesses evolve, today's organizations now need fewer yet far better educated and skilled workers due to technical advances in the workplace (Gordon, 2000, p. 2). Fields (2001) calls people who have a diverse set of skills "indispensable employees".

Field generalizes that most organization's ultimate goal is to recruit and retain these competent indispensable employees. In order to achieve this status, women technology professionals strive to have most or all of the skill categories above either as their core and/or secondary skill. The following sections differentiate core from secondary skills.

### **Core Skills**

Core skills comprise of mental analytical skills. They are acquired through intensive technical training.

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