What is a Competency Model?

A competency is a specific, identifiable, definable and measurable skill or characteristic that is essential for the performance of an activity within a specific business or industry context. Some examples of competencies are safety awareness, critical analytical thinking, problem solving, communication, team work etc.

The first competency model was developed in the early 1970s for the US Department of State by David McClelland and his colleagues of McBer and Company as an alternative selection tool for junior Foreign Service Information Officers. Later McBer and Company developed a methodology that is still highly useful today in competency model building and comprises of "*focus on outstanding performers, use of behavioral event interviews and thematic analysis of interview data and distillation of the results into a smaller set of competencies described in behaviorally specific terms*". In the last 30 years this technique has gained importance as an integral practice in human resource management[4].

Based on the US Department of Labor's (DOL) framework, the competency model can be described as a pyramid consisting of a hierarchical set of tiers. The pyramid is divided into 3 main blocks of **Foundational competencies**, **Industry Related** and **Occupation Related competencies**. Each of these blocks is made up of tiers which consist of a set of competencies that represent the skills, knowledge and abilities essential to be successful in an occupation in the industry the model represents.

Source: www.CareerOneStop.org/CompetencyModel

Starting from the base, the tiers cover competencies that are common to several occupations and industries. As we traverse up the pyramid, the competencies become industry and occupation specific. It is important to note that the above picture does not suggest that this is a sequential model i.e. one needs to have all the below competencies in order to posses / develop the higher level competencies. The model is constructed in a bottom-up approach using a combination of research, data collection and analysis, focus groups and case study interviews.

Uses of Competency Models

Competency Models benefit a wide array of users – as a standard set of skills that can be used for recruiting, profiling jobs, evaluating employees, designing academic and professional certification programs. They serve as a bridge between educators, businesses and other stakeholders who are invested in preparing students and workers for today's workplace challenges.

Competency Models can be used by employers as a **useful selection and professional development tool**. It can assist HR staff match specific skills and work requirements to different jobs at selection, promotion, career path development and while developing training programs for the organization. It can help to assess performance of individuals in their jobs as well as in their roles of managers, direct reports, customers and team members. It can also be a means for businesses to communicate their performance expectations to their workers.

Competency Models can serve as a **measure of the gap between employer needs and the offerings of the current education and training delivery system**. Contents of existing coursework can be reviewed and mapped against the tier competencies and a crosswalk can be created and "gaps" can be identified. As education/ training providers evaluate existing programs or design new ones, the Competency model can **serve as a benchmark**, resulting in addition of courses that will match workplace requirements and trends[5].

Training providers can also use competency models to **develop industry-validated certifications**. Acquiring such a certification establishes that the graduate of the particular training program has demonstrated mastery in the competencies as stated in model for that industry or sector[6].

Competency models work as a guide for Workforce Investment Boards and One Stop Career Centers to **match job requirements and skill sets determined by employers to potential candidates**. In this way an even larger group of individuals such as in-school youth, out-of school youth, dislocated workers, current workers and special needs populations are serviced thus increasing the talent pool of available workers.

As these key partners work together by sharing assets and resources, the competency model provides a **good guidance for government investments in workforce preparation strategies** within a region or the state.

Best Practices

A great deal of research has been done to design competency models by both the private sector and government agencies to address the skill needs of these entities.

The Washington State Board for Community and Technical College utilizes Skill Standards for Biotechnology developed by local-area schools and colleges, organized labor and industry. The goal of this report is to prepare individuals for employment in the Biotech/Biomedical field by aligning industry skill standards and educational program learning outcomes and by articulating educational skills standards between educational institutes in the Puget-Sound Region[7].

The state of Texas has adopted the Washington Skills Standards for Biotechnology.

BioLink, a National Advanced Technological Education Center for Biotechnology has developed the Bio-Link Clearinghouse of Instructional Materials for Biotechnology Technician Education. This is a collection of instructional and curriculum materials that are specifically targeted for courses and programs that educate biotechnology technicians and bench scientists. Biolink has partnered with colleges and universities in several states across the country[8].

The Utah State Office of Education makes of use of the Health Science Education Pathways. This is based on the national health care skills standards and national health science career cluster pathways. By taking the prescribed health science courses students can gain an important foundation of knowledge and skills necessary for continued education in health sciences[9].

The Center for Science Education (CSE) a division of Education Development Center Inc, published *Gateway to the Future: Skill Standards for the Bioscience Industry.* This book details a complete set of skill standards and a chart of all the specific tasks performed by a range of beginning level technical occupations in pharmaceutical and biotechnology companies, as well as university and government research and clinical laboratories. The occupations are in manufacturing, research and development and clinical diagnostics. The standards were developed and validated by technicians, supervisors and managers from several bioscience industry workplaces[10].

North Carolina Biotechnology Center published a report, *The Model Employee: Preparation for Careers* in the Biopharmaceutical Industry. This study investigated and presented detailed information about the pharmaceutical and biomanufacturing workforce in order to support necessary curriculum development efforts[11].