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Critical Skills: Hitting a Moving Target

A starting point for discussion

Prepared for the Expert Panel on Skills
by Paul Gallagher,
with contributions from
John McLennan and Geoffrey Poapst

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Canada

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Backdrop

Over the past decade, three immutable forces have worked together to transform the commercial and economic landscape and reshape the challenges facing Canadian firms and their employees.

Globalization has expanded the competitive arena. We no longer compete only with each other. Now, we go head to head with the best in the world.

New Technology changes the tools in the competitive arena. We can produce more with the same inputs and we can choose from an ever broader range of production processes than ever before.

Deregulation has changed the rules in the competitive arena. Now, there are no holds barred and it's innovators, creative thinkers and risk-takers who come out on top.

To survive in this environment, organizations must meet steadily rising quality standards and respond quickly to market developments and new technology. This requires agility, flexibility and, above all, the capacity to muster a broad range of skills in short order. Firms in the knowledge-intensive industries, for example, can no longer survive solely on the strength of their engineering team. They must also have innovators who can identify and create opportunities. They need risk-takers who dare to put new ideas into action. They need leaders to follow through and seize opportunities and communicators who can secure the support of managers, employees, and shareholders.

To prosper in the knowledge-intensive industries, organizations and individuals must also have an appetite for change. From the shop floor to the boardroom, people must see the opportunities which economic, technological and regulatory change create. They must be able to identify and develop the critical new skills, knowledge and attitudes required to seize those opportunities. And, they must develop and apply new skills at the daunting rate which change demands. In other words, they must continuously and consistently hit a fast moving target.

To protect our competitiveness, prosperity and quality of life, employers, employees, governments and educators must develop and apply the skills upon which our knowledge-intensive industries depend. Finding the best ways of working together to hit this moving target defines Canada's "skills challenge".

Mandate of the Expert Panel

Against this backdrop of unrelenting change, the panel has been asked to identify the “critical skills” which must be available in Canada over the next five to 10 years in order to sustain the competitive position of our knowledge-intensive industry sectors. We believe that actions taken to ensure this supply of “critical skills” will also speak to the broader challenge of protecting our quality of life and ensuring equal access to opportunity for all Canadians.

As a first step and to facilitate its work, the panel has agreed on some important definitions.

What Do We Mean By Skills?

The panel uses the term *skill* in its broadest sense. A *skill* is the combination of knowledge and the ability to apply knowledge. In other words, it involves both the “know-what” and the “know how” to perform a certain task. We also distinguish *skills* from *occupations* which are the names we give to people who have particular groups of skills such as a computer programmer, pipe-fitter, or medical doctor.

The panel also believes that it is useful to group work-related skills into five basic categories¹.

1. *Essential skills*: refer to the ability to read, write, calculate and operate basic computer applications. They also refer to the ability to think; analyse and solve problems; learn independently; exercise responsibility; adapt to a range of situations; communicate effectively; cooperate with others; and work in teams. Essential skills – coupled with attitudes such as drive, determination, enthusiasm and commitment – are broadly recognized as basic building blocks for productive participation in the workforce.
2. *Technical skills* (including professional and scientific skills): refer to the “ability to do” or to perform specialized tasks which may be particular to a single occupation or industry or across a range of industries.
3. *Management skills*: refer to the ability to undertake organizational activities such as planning and marketing, evaluation, as well as the ability to manage people, capital, budgets, etc, that has broad application across industry sectors.
4. *Leadership skills*: refer to the ability to motivate and assist others to achieve their full potential, to take risks, and to formulate and champion a vision.

¹ Based on the definitions of skills used by the Conference Board of Canada and Human Resource Development Canada.

5. *Contextual skills*: refer to the ability to operate successfully in different settings, such as in different countries, in different regions, or in a culturally diverse workplace. Each organization and industry sector operates within its own context and some may operate in several contexts. Each context requires different skill sets.

What Do We Mean by Skill Levels?

In examining the work environment in the knowledge-intensive industries, the panel believes it is also useful to differentiate among four distinct skill levels.

1. In a *low skill* environment, work is commonly of a repetitive and routine nature. The required skills can often be learned on the job and generally require limited formal schooling. There is very little low-skilled work at the core of the knowledge intensive industries.
2. In an *intermediate skill* environment, work requires the ability to apply learning to customary and new situations, often independently. People with intermediate level skills are the “operators” in the economy generally and in the knowledge-intensive industries. There is a substantial amount of important intermediate skill work in many knowledge-intensive industries.
3. In a *high skill* environment, work usually involves applying new (or old) technologies to new situations and regularly requires creative thinking and problem solving. By definition, a large proportion of the work in knowledge-intensive industries is high skilled work.
4. In an *“at the edge” skill* environment work routinely involves developing new technologies, creating new industries or expanding existing ones. People with “at the edge” skills drive knowledge-intensive firms and industries into uncharted territory.

Further Assumptions About Skills

In addition to classifying skills by type and level, the panel takes the following characteristics of skills as a given:

- Skills of any kind atrophy when not used. This has important implications for how and when skills should be developed, and how they are to be maintained and refreshed.
- Many “jobs” require blends or combinations of skills at different levels.
- Large corporations, private and public, and small and medium-sized enterprises usually have different skill needs: the latter commonly require more people with multi-skills at all skill levels.

- Low skill workers, particularly those with low literacy skills, are in plentiful supply in Canada and form the bulk of economically “at risk” population. Addressing the learning needs of this disadvantaged group should be given high priority.

Focusing on Skill Sets

Since employers in the knowledge-intensive industries seek employees who possess particular groups of skills, the panel’s work will focus on *skill sets* rather than individual skills. Desirable skill sets will often evolve over time, becoming broader and more complex, in response to changes in technology and the organization of work.

Demonstrated Competence vs. Credentials

Panel members agree that “skill sets” should be identified and described in terms of specific job requirements while avoiding reference to job or professional titles such as technician, engineer or programmer. We also accept that people may follow different routes – formal institutional studies, self-directed or on-the-job learning, employer sponsored training, etc. – to acquire the same skill set. We believe, however, that demonstrated competence in the tasks entailed in a certain job, as opposed to academic or professional credentials, should determine whether a person is or is not qualified for that job.

A Functional Definition of Critical Skills

Critical skill sets are the groupings or combinations of skills without which an industry cannot compete in the international marketplace and reach its full potential. Critical skill sets exist in low and intermediate skill environments as well as the high skill or “on the edge” categories and the critical skill sets for one industry may overlap with those of another. A persistent shortage of critical skills in an industry sector points to fundamental problems in the education and training systems, to inadequate recruiting and employment practices, or both.