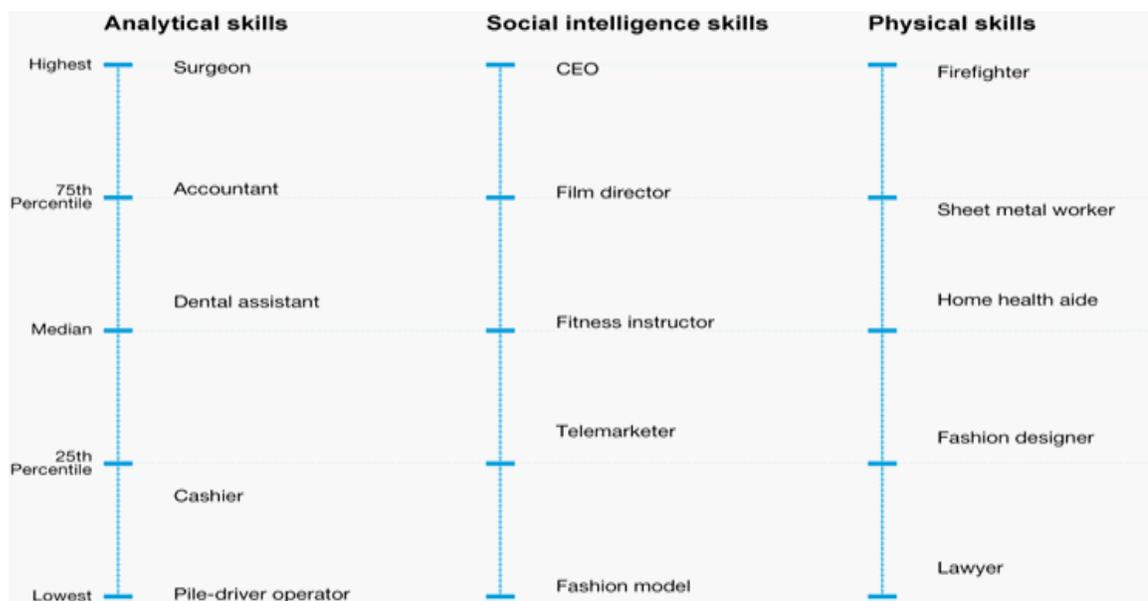


Occupations Draw on Three Types of Skills

The Martin Prosperity Institute has developed some new measures of the elements of occupations that draw on workers' knowledge and creativity. In this and future issues of Martin Prosperity Insights the MPI will share some of these results.

For years researchers have attempted to measure “human capital,” the stock of knowledge possessed by an individual (Becker, 1964). Traditionally, they have used an individual's years of education or level of educational attainment (Lucas, 1977; Glaeser and Saiz, 2003). Another approach instead links the skills required with the jobs that people are actually doing (Bacolod and Blum, 2005; Gabe, 2009; Scott, 2009) For example, think of a film director – an occupation which doesn't necessarily need many years of education and so by traditional measures its human capital is low. However, it is well known that film directors require high amounts of sophisticated skills, particularly in the management of creative talent, a skill that is part of the social intelligence skill set.



In work done as part of the *Ontario in the Creative Age* report MPI researchers dug deeper into the detailed Canadian and US labour force data to determine what the sets of skills are that really matter in today's economy. Using statistical techniques and some judgment, researchers were able to boil down the myriad occupational skills used by government statisticians to three broad sets of skills.

So what are the skills found in jobs today?

Analytical- This skill set consists of logical thinking, number facility and general cognitive functioning. It includes capabilities such as determining how a system works and how changes in conditions will affect the outcome. It also includes the abilities to develop and use rules and methods to solve problems and quickly and accurately compare and contrast patterns or sets of numbers. Occupations that draw most on analytical skills include surgeons and biomedical engineers, and those that draw least are pile-drive operators and fashion models.

Social Intelligence- This skill set has a personal element. It includes complex thinking skills that are essential for assessing fluid, ambiguous human situations – skills like deductive reasoning, the ability to apply general rules to specific problems to produce answers that make sense and judgment. Occupations high in social intelligence skills require strong interpersonal skills – such as understanding, collaborating with and managing other people. Not surprisingly, occupations that require the highest levels of these skills are psychiatrists, chief executives, marketing managers and lawyers. Note that this skill is not just related to any level of human interaction; instead the skill refers only to two-way communication, cooperation, and comprehension.

Physical- This skill set focuses on the ability to use motor skills and strength in an occupational capacity. It includes arm-hand steadiness, coordination and dexterity. Derrick operators are at the top of this list, along with steel workers, fire fighters and electricians.

Why does this delineation of skills matter?

As will be shown in subsequent Martin Prosperity Insights, the current economy values analytical and social intelligence skills to a much higher degree than physical skills – and all signs are that this trend will continue. The insights will also reveal that cities with jobs drawing more on analytical and social intelligence skills are outperforming others.

Sources:

Becker, G. (1964) Human Capital, New York: Columbia University Press for the National Bureau of Economic Research.

Bacolod, M., Blum, B., Strange, W. (2009) Skills in the City. *Journal of Urban Economics*, 65:136-153.

Gabe, Todd. (2009) Knowledge and Earnings. *Journal of Regional Science*, 1-19.

Glaeser, E., Saiz, A. (2003) The Rise of the Skilled City. NBER Working Paper, 10191.

Lucas, Robert. (1977) Hedonic Wage Equations and Psychic Wage Returns to Schooling. *American Economic Review*, 67, 549-558.

Scott, Allen J. (2009) Human capital resources and requirements across the metropolitan hierarchy of the USA. *Journal of Economic Geography*, 9: 207-226.

The Martin Prosperity Institute (martinprosperity.org) at the [University of Toronto's Rotman School of Management](#) is the world's leading think-tank on the role of sub-national factors – location, place and city-regions – in global economic prosperity. Led by Director [Richard Florida](#), we take an integrated view of prosperity, looking beyond economic measures to include the importance of quality of place and the development of people's creative potential.