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High Tech Jobs in the Low Tech Sector?

Highlights

- There are more high tech jobs in the "low tech" sector than in the "high tech" sector.
- High tech jobs make up only 3% of all jobs in the "low tech" sector.
- Most high tech jobs in all sectors are services related.

Introduction

The August edition of Business Indicators looked at the actual number of high tech jobs that exist in the "high tech sector". [1] The data revealed that over half the employment in the high technology sector involves occupations requiring a scientific or technical knowledge base. Considering all the support work that must be done to maintain any economic enterprise, this proportion could be considered quite high. It would be fair then to identify the high tech sector as a substantial and effective producer of high tech jobs.

This edition looks at the rest of the story, by examining high tech jobs that may exist in the "low tech" sector. The term "low tech" can be misleading. In fact, for a firm to be in this category only means that it is not in an industry that has received the "high tech" designation. Individual firms in such industries can be highly innovative and may use very advanced processes or deliver complex services. Further, it is clear that technology has diffused throughout the entire economy, and that even average firms may employ individuals with advanced skills.

Four Industry/Occupation Blocks

In 1996, the latest year for which detailed occupational information is available, the Census indicated that there were nearly 1.7 million workers employed in BC. These workers were found in the high tech sector (that is, in high tech industries) and in the non-high tech sector, and were in high technology occupations (those requiring a scientific or technical knowledge base) and non-high technology occupations. This produces four possibilities, as illustrated in figure 1.

Although the high technology sector uses a much higher concentration of workers with high technology occupations than non-high technology sectors, there are actually more workers with high technology occupations outside of the high technology sector. This is because the number of non-high technology sectors is large enough to more than compensate for their sparing use of workers with high technology occupations.

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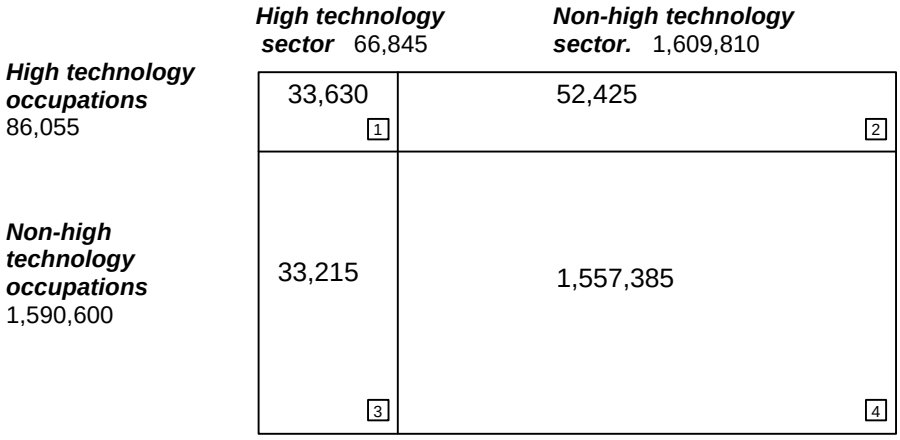
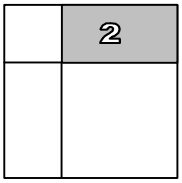
[1] *BC Stats uses a definition of the high technology sector that includes a selection of industries that stress research and development, that employ scientists and technicians, or that produce or use sophisticated products. The annual report* "Profile of the British Columbia High Technology Sector" (available at the BC Stats web site) *provides measures of GDP, revenue, employment, wages and salaries, etc., for these industries.*

Figure 1. BC employment distribution by industry and occupation, 1996



(Diagram not to scale)

Employment in the non-High Technology Sector



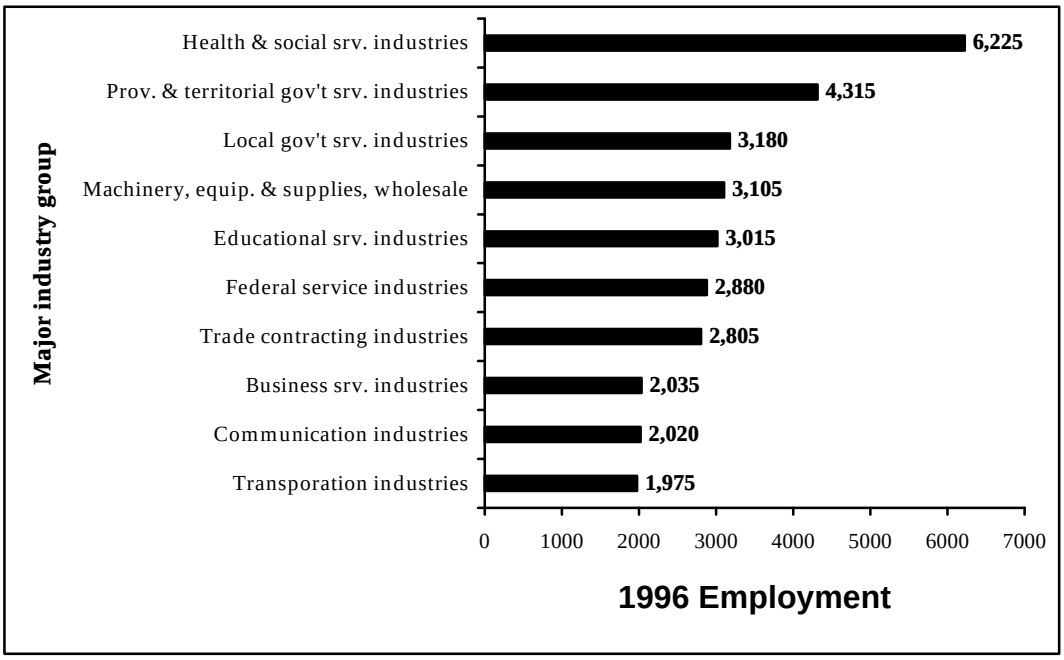
Block 2 in figure 1 above represents workers with high technology occupations outside of the high technology sector

Just over sixty per cent of workers with high technology occupations work in industries outside of the high technology sector. Although there are more workers with high technology occupations outside of the high technology sector than inside, their percentage of the workforce is much smaller outside. In the high technology sector, roughly half of the workers have high technology occupations. In the non-high technology sector, only three per cent of workers have high technology occupations. The reason there are more workers with high technology occupations outside of the high technology sector is simply that the rest of the economy is so much bigger, that even its sparing use of high technology workers adds up to more than the total in the high technology sector.

Figure 2 shows that the largest industry employer in block 2 is *Health & Social Services Industries.* Two thirds of these jobs are in medical technology jobs ranging from *Medical Laboratory Technicians* to *Respiratory Therapists & Clinical Perfusionists.* These high technology occupations are classified as high technology because they use high technology equipment that requires scientific understanding to operate.

The rest of the industries listed in Figure 2 fall into two broad categories. All three levels of government, federal, provincial, and local are on the list. Governments need technology specialists to help deliver its services and carry out research. The rest of the industries on the list are industries that use high levels of mechanization or automation. The *Communications Industry*, for example, relies on sophisticated equipment to transmit information quickly and accurately. Specialists are needed to ensure that these systems are set up properly and run smoothly.

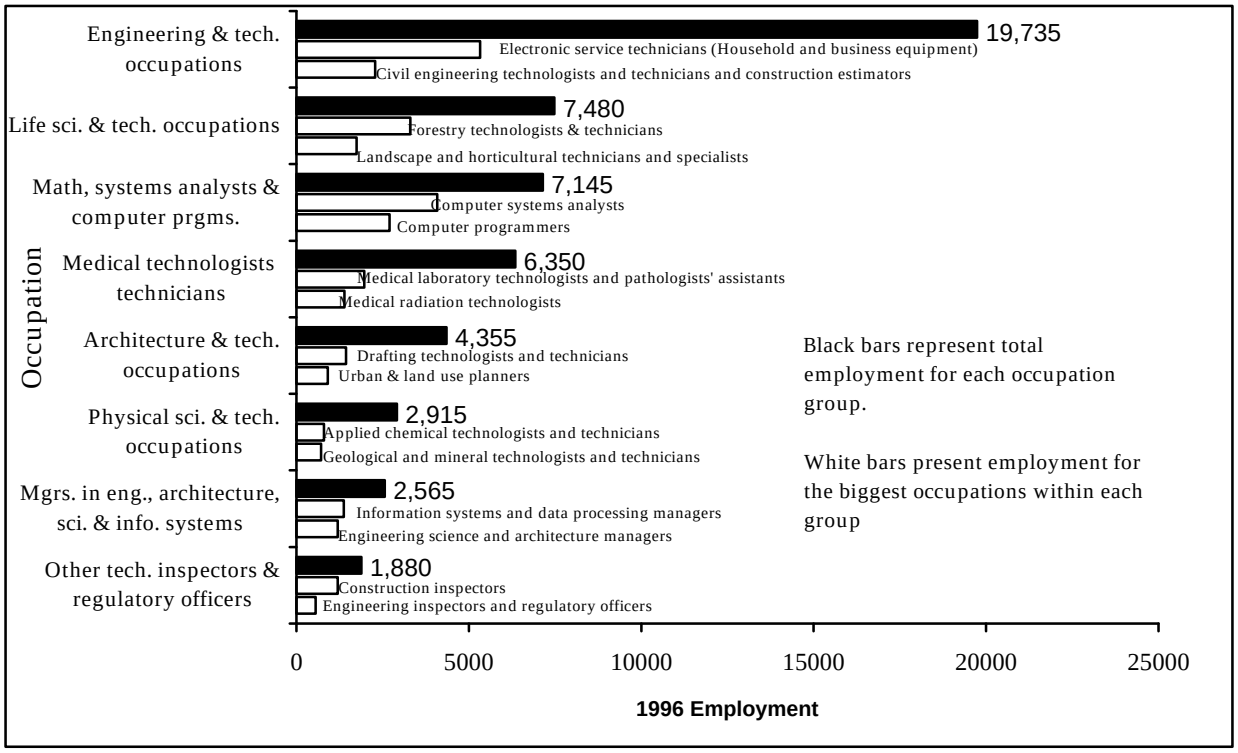
Figure 2. Top 10 non-high technology employers of high technology workers



The occupations in block 2 are usually focused on implementing technology as opposed to developing it. Figure 3 shows that *Engineering & Technical Occupations* is again the largest category of high technology occupations. However, the technical occupations are most important within this class. The top two occupations in this group within block 2 are *Electronic Service Technicians (Household And Business Equipment)* and *Civil Engineering Technologists and Technicians and Construction Estimators*.

The next biggest high technology occupation group in block 2 is *Life Science & Technical Occupations.* Looking at the occupations in this group shows that the workers are involved with the forestry industry and other outdoor work. This reflects the prominence of forestry in the BC economy.

Figure 3. Distribution of high technology workers outside the high technology sector, by major occupation groups



Conclusions

The dispersion of high technology occupations through the economy implies that policies that affect such workers or their companies should not be limited to the high technology sector. However, the spread of occupations requiring technical training, outside the high technology sector still accounts for only a small percentage of BC employment. And such occupations are primarily concerned with the use of technology, rather than its creation. The high technology sector designation therefore remains significant for understanding employment and innovation in the economy.

More Information is available

This report was adapted from the larger paper*: "High Technology Occupations in British Columbia, 1996"*. That paper extends the analysis to each of the four industry/occupation blocks described above. In addition, it reports on wage rates for both high technology and non-high technology occupations, both within and outside the high technology sector. *"High Technology Occupations in British Columbia, 1996"* can be obtained from the BC Stats web site in the subject area Business/High Technology.