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Senate Inquiry into the Shortage of Engineering and Related Employment Skills

Introduction

I am a degree qualified Electrical Engineer and have worked for over 35 years in the development of complex electronic products. Most of my career has been spent in the Telecommunications industry. During that time, I have seen a continual decline in the electronics industry to the point where Australia now imports most of its technology leading to:

- A severe decline in local design capability.
- A lack of employment opportunities in this industry.

The second point is supported by June 2011 skills shortages report (reference 1), which states that there is no shortage of Electronics Engineers. I would go further and assert that, in general, there is an over-supply.

Even though I was considered a strong performer, since the worldwide downtown in the Telecommunications industry in 2002, I have been retrenched 3 times - company wide closures – and have spent about 19 months out of work. A number of my colleagues have been forced to seek employment overseas. Up until that point, I enjoyed continual employment and career advancement.

For the Electronics industry, the senate inquiry should not focus on the issue of shortages of Engineers but rather on the impact of decline of the Industry.

The current state of the electronics industry in Australia is largely a result of outsourcing to countries with lower labour rates – first manufacturing and now engineering design. In my case, this has happened during times of financial crisis where outsourcing has occurred as part of corporate restructuring to reduce operating costs and save jobs in the corporation's home country.

Outsourcing has impact both horizontally (supply chain and aligned industries) and vertically (e.g. loss of manufacturing, leading to decline in design capability which leads to loss of management jobs etc.). I'm sure that the Senate is aware of these relationships but I want to emphasis the point.

Consequences of Decline in the Electronics Industry

In terms of the above, and considering the terms of reference for this inquiry, the Senate should look further at the following issues:

- Loss of local capability to evaluate, plan, cost and manage infrastructure projects.
- Loss of local capability to participate in infrastructure projects.

Take the example of the National Broadband Network (NBN). I am not involved in this project but my understanding is that the equipment for the NBN will predominantly be sourced from overseas. Local companies (both Australian owned and subsidiaries of Overseas companies) will mainly perform the installation and some application specific adaptation of the equipment.

Attracting and Retaining Engineering Talent

Some reasons why people are reluctant to enter engineering professions and why the profession has problems retaining people are as follows:

- Relatively poor remuneration (with the perhaps the exception of the mining industry).
- Poor long-term job security in many industrial sectors due to outsourcing.

- Difficulty in finding employment past a certain age:
  - Older employees have high remuneration expectations.
  - In Australia, technology companies have a bias against older workers.

  Ironically, technology has advanced so rapidly that employers consider skills more than several years old to be out of date e.g. knowledge gained 20 – 30 years ago is considered of no value. What employers don't understand is that the skills are transferable and with a few months of learning curve, even older Engineers can update themselves to the latest technology and methodologies. Many jobs in Australia tend to be technologically "low skilled" and say an Engineer with 4+ years experience can do the work with little supervision. Why would an employer then pay for an Engineer with 30 years experience? Employers forget that the older Engineer can often bring other skills to the table.
- High stress and long hours – in view of the poor rewards.
- In order to advance in the profession (remuneration and status) Engineers must often move to supervisory / management / sales roles. This often negates the reasons that people entered the profession in the first place – tinkering with technology.
- Low social status – Many years ago the Melbourne Age surveyed people to name professions and rank them in terms of status. Even "Fortune Tellers" made the list but Engineers didn't!

Addressing the Shortage

Some suggestions on ways to address Engineering Shortages are:
- Telecommuting to create flexibility in the labour market
  - For example, I now work from Melbourne for a company based in Adelaide - My current work assignment is for a company in the US.
  - The days of long careers in a company seem to be gone due to:
    - Industry instability and uncertainty.
    - Many jobs are advertised as short-term contracts e.g. 6 months.

  It is, therefore, a bigger ask to expect people to uproot their families and move interstate to follow jobs.
- Incentives for companies to invest in re-training and skill development for employees.
  - Engineers by nature are highly adaptable. Throughout my career I have had to constantly update to new technologies and new industries. Very few companies offer training for this i.e. it is "sink or swim" on the job.
  - Experienced / older Engineers have a wealth of transferable skills but companies don't have a long term view and will only hire people who can be immediately productive.

  Companies who win contracts for government work should be forced to invest in re-training or skill development for local people – in particular older Engineers - before being permitted to import skills from overseas.
- Offer greater flexibility for older Engineers that don't wish to work full time:
  - Allow shorter working hours e.g. 3 days per week.
  - Provide long-term employment security with a company but allow long periods of absence without pay e.g. work only 9 months per year. Technology companies generally work on a project basis and need people to work full time for the term of the project. Companies that I have worked for require you to resign if you wish to take a long period of absence.

Reference 1: Skill Shortages Australia, June 2011, ISSN 1839-5791
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