

## Australian Manufacturing, a Way Forward?

By Derek G Andrews

*Note. An edited version of this paper appeared in the April 2003 issue of the magazine PACE; Process and Control Engineering.*

### 1.0 Introduction

Manufacturing in Australia has made something of a recovery in recent years, reversing the trend of declining employment. Manufactured exports are up and the number of manufacturers has declined, but the average number of employees per establishment has increased. This slight turnaround is fragile, but has been sufficient to arouse the interest of economic policymakers, economists and commentators who now need to re-assess the conventional wisdom of the past twenty years, which insisted that manufacturing in Australia would continue to decline.

Currently there is renewed interest in manufacturing's role as a major employer and its expanding export capabilities. This is expressed in the question now being asked by policymakers:

" What can be done to make Australian manufacturers more successful?"

Obviously the answer to that question is a key issue for the members of the Institute of Industrial Engineers, and the forum on their website [www.iie.com.au](http://www.iie.com.au) will consider this issue further. In the interim there are some as yet untested observations that may go towards answering the question.

### 2.0 Manufacturing needs to be a good investment.

Manufacturing will not prosper unless the businesses involved are good investments. Existing and emerging Australian manufacturers need to be sufficiently profitable to compete for investment dollars in a globalized investment market. Manufacturers must produce better than average long term growth and dividends if the sector is to continue to recover. The policy areas that need to be considered here are broad and some would also affect the prosperity of other Australian enterprises. Essentially policy settings in Australia need to ensure that there is no comparative disadvantage in:

- Education
- Research
- Protection of intellectual property
- Market access
- Enterprise taxation
- Personal taxation
- Fiscal stability
- Commercial probity
- Political security

To minimize the need to relocate to other jurisdictions, manufacturers should consistently and insistently point out to government where they are disadvantaged and expect that the issues they raise will be analyzed and addressed.

### 3.0 Process and Investment advantages

Manufacturers that capitalize on their advantages will tend to prosper. Where manufacturing is part of an advantaged supply chain, and where the production processes can be automated, the enterprises success strategy is based on excellence in production processes, process control, machine utility and reliability, and a relatively small number of multi-killed employees minding high cost multi machine systems. In some instances these highly capitalized work places employ people in well equipped work stations with automated feeders, automated machine setup and some robotics. Generally these businesses seek to increase output per employee by investing in production facilities and processes that increase throughput, reducing the unit labor cost. In these plants there is less variation in the kinds of work performed and consequently less supervision and other factory support staff are needed.

These highly capitalized businesses tend to dominate the industrial landscape and set the terms of the labor market. The traditional shop floor relationship, which is sometimes adversarial and covertly coercive, provides an understood set of relationships that may not impact unfavorably on the success of these enterprises and minimizes industrial disruption.

### 4.0 On floor management emerging as a competitive advantage.

There are many small manufacturers in Australia; the average number of employees per establishment across the whole sector is 21. To a large extent the revenue in these businesses is determined by the skill and efforts of the direct workers. Where this is so [the metal trades industry is an example] the personal productivity of each skilled worker is vital and so are the supervisory and factory support roles. If managers and tradesmen are prepared to work together in close cooperation then productivity can be increased and the number of supervisory and support staff reduced from [1 to 3] to, say, [1 to 15].

At this stage in the evolution of most factories, the competitive advantage in reducing production overheads is more important than the gains that can be made on direct productivity. In application this requires review of planning, estimating, purchasing and production control systems and increasing the involvement and responsibilities of all the shop floor employees. Practically that does not happen without better on-floor leadership, improved communication and information flows to the employees to support each individual's commitment to the success of the enterprise and personal acceptance of responsibility for the success of the enterprise. Shop floor people will need to be supported by performance information, innovative reward systems and provided with the skills they need to

de-simplify their workplace. Where these processes are now in place they are producing a competitive advantage.

The union movement may be unaware of these emerging changes and may not support them.

In summary:

On floor management change can provide some manufacturers with a competitive advantage.

Labor market reform processes should introduce sufficient flexibility to facilitate factory floor management changes.

## 5.0 The Productivity Professional

Productivity knowledge, which includes Industrial Engineering, quality, safety, maintenance and production engineering is playing an important role in the manufacturing industry. Where on- floor management is changing, the role of the expert is also changing. The experts are more likely to be teaching techniques to the on-floor employees, solving problems they have raised, and offering advice rather than developing systems that seek to control what the shop floor employees do. Productivity professionals will need to evaluate changes as they emerge in their workplaces and consider how they will respond. Some productivity professionals may take up the challenge of championing change in their organization.

## 6.0 Productivity organizations.

It would seem to be sensible to collect, develop and disseminate productivity knowledge. There are academic and professional institutions, societies and associations that may be interested in contributing to this activity. Government support for these bodies could produce significant gains.

The Institute of Industrial Engineers will seek out and register on the publicly assessable area of their website [www.ie.com.au](http://www.ie.com.au); all of the Australian organizations that have capabilities in productivity knowledge. Within the limitations of its resources, the Institute is also working to develop a better means of enhancing the knowledge and capabilities of its members and the profession in general.

Ends.