Manufacturing

Innovation in the manufacturing sector

NSW has a highly developed and diverse manufacturing sector which is a strong driver of the NSW economy in terms of GDP, employment, exports and cross-sectoral linkages.

With the sector facing high levels of competition in the global marketplace, NSW is continuing to focus on the production of high-end goods and improving processes. NSW's robust knowledge infrastructure, combined with its strengths in design, logistics and ICT, will support the ongoing development of such value-added manufacturing processes. The NSW Government is working with industry and research institutions to increase productivity in the Manufacturing sector by focussing on innovation.

Innovation in manufacturing goes beyond companies involved in manufacturing high technology products. According to the Australian Bureau of Statistics[1], the sector is well represented in terms of the innovative activity being undertaken by manufacturing firms:

- 19.3 per cent of firms introduced an innovation relating to goods or services (the average across sectors).
- 31.5 per cent of firms introduced a new or significantly improved operational process (the average across sectors being 20.8 per cent).
- 21.5 per cent of firms introduced a new or significantly improved organisational or managerial process (the average across sectors being 20.7 per cent).

Innovation in the manufacturing sector is created around new or improved:

- *Capabilities and processes:* the improvement of manufacturing processes (such as streamlining production flows and the use of automation) can deliver significant productivity benefits. These can include lower costs, eco-efficiency gains, reduction in OH&S issues, improved quality and safer products. For high volume 'commodity' products, small improvements in production and operational processes can result in large productivity gains.

- *Products and services:* product and service innovation can be the result of customer demands, new markets for products arising from environmental, economic and social factors, the commercialisation of scientific research and the adaptation of technology to new products or niche markets. Innovation can also take the form of 'springboard' innovation which is the application of a product to an entirely new use. In certain instances, it is not only the 'product' which is subject to innovation, but changes to the packaging of products or linked service delivery can improve product safety and longevity.

- *Supply-chain innovation:* improvements along the supply chain apply from the supply of raw material through to the delivery of the finished product to market. Supply-chain innovations reduce delivery times, provide improved consistency of supply, lower costs and improve product competitiveness.

The Innovation Unit's current projects and publications

The Innovation Unit is providing input into the operations of the federally-funded Enterprise Connect Centre for Manufacturing which will be established in NSW in 2008. This centre will provide a range of business services and ongoing mentoring to help firms access new ideas, knowledge and technology.

Why was manufacturing chosen as an innovation sector?

Value and importance

- In 2006-07, the NSW Manufacturing industry contributed more than $34 billion to the NSW economy. This makes it the second largest industry sector in NSW, accounting for 10.3 per cent of Gross State Product and 32 per cent of national manufacturing output.
- Manufacturing accounts for 24 per cent of the State's total exports. Significantly, $7.8 billion of these exports are elaborately-transformed manufactured goods.
- An AEC Group report[2] released by the Industry Capability Network found that for every additional $1 million of successful new or retained manufacturing business, the following effects flow through the economy:
  - 17 full-time jobs are created (42 per cent of new jobs are created in manufacturing itself and the rest in other industries as a flow-on effect);
  - $317,900 worth of tax revenue is generated;
  - $1,262,000 worth of value-added is generated; and
  - $136,400 worth of welfare benefits is saved.
- NSW accounts for half of Australia's iron and steel manufacturing, aircraft manufacturing industry and electronic equipment manufacturing.

- NSW is home to a total of 285 medical device companies, accounting for more than 60 per cent of Australia's total medical equipment exports. Firms include Cochlear, the 2007 Australian Exporter of the Year, as well as world leaders such as ResMed, Ventracor, Neuromonics, Sunshine Heart and Portland Orthopaedics. In addition, over 70 per cent of the Australian pharmaceutical manufacturers are located in NSW.
- NSW has the largest food and beverage processing industry of all the States accounting for more than 35 per cent of Australian production in value-added terms. Major companies with a strong NSW presence include Campbells (Arnotts), Coca-Cola Amatil, George Weston Foods, Goodman Fielder, SunRice and Casella Wines.

Employment

- There were approximately 300 manufacturing firms in NSW with over 200 employees and over 20,000 smaller employing manufacturing firms in 2006[3]. The sector employed over 327,000 people in 2007, about 10 per cent of the NSW workforce. The manufacturing sectors employing the most people are machinery and equipment manufacturing; food, beverages and tobacco manufacturing; metal products manufacturing; and printing, publishing and recorded media production.

Growth

- The Manufacturing sector as a whole, both in NSW and nationally, is experiencing challenges from a number of factors including intense import competition, a rising Australian dollar making exports more expensive and the effects of widespread drought conditions. This has resulted in a trend of static or declining growth rates for the sector. However there are sub-sectors within manufacturing which are growing in a highly-competitive market, such as food and beverage production, wood and paper products, printing, publishing and recorded media and metal products.
- NSW manufacturing businesses have steadily improved their productivity (real sales and service income per person employed) from about $250,000 in 1999-2000 (Australian average about $200,000) to about $330,000 in 2004-05 (Australian average about $225,000)[4]. In this period, real manufacturing industry value added per person employed in NSW increased approximately from $80 to $100 (compared to an increase from $60 to $65 for Australia).
- NSW manufacturing as a proportion of NSW gross value added at basic prices increased from 10.5 per cent in 2001/02 to 11.7 per cent in 2005/06[5].

See the NSW Manufacturing sector profile.

[1] ABS Selected Characteristics of Australian Business, 2005-06 (81670DO004, Additional Datacubes)

[2] (August 2004) http://www.icnnsw.org.au/news.asp

[3] ABS Counts of Australian Businesses, including Entries and Exits (Cat. 8165.0), Jun 2003 to Jun 2006

[4] Bridging the Barriers: A Study of Innovation in the NSW Manufacturing Sector, Centre for Industry and Innovation Studies, University of Western Sydney, November 2007.

[5] Gross value added at basic prices includes ownership of dwellings. It excludes taxes less subsidies and the statistical discrepancy, which are added to gross value added at basic prices to arrive at gross state product.

For more information

Innovation Unit | ☎ +61 2 8222 4884 | innovation@business.nsw.gov.au