

The needs of fast-growing companies and R&D drivers in SMEs

- 5.1 There is no universally accepted definition of a ‘fast-growing’ business. The traditional view is that it refers to a company that has high employment growth; however, it could also refer to a company displaying rapid turnover growth. A 1998 study found that ‘micro-businesses’ (defined as being either non-employing or having less than five employees) were the fastest growing companies, with employment growth of over 4% pa. While small in size, these companies are responsible for major job generation in Australia.
- 5.2 However defined, fast-growing companies are estimated to comprise only 5% of Australian companies. Science and technology companies fall within this group, with small staff on generally higher than normal salaries. Such companies are motivated by fear of ‘technology obsolescence’ reflecting the fact that they are:
- ... under constant pressure to improve and innovate in order to maintain their commercial viability. On average, 70% of [their] current revenue was from “new” products developed within the last five years.¹
- 5.3 In general, the R&D drivers of fast-growing companies are similar to those for SMEs, though they may be assumed to be even more urgent (that is, the general driver to make profits – see below – is heightened for a fast-growing company which needs the revenue stream to pay for its rapid expansion).

1 Australian Electrical and Electronic Manufacturers’ Association Ltd, Submission No. 68, p. 1.

5.4 The committee was told that there are many drivers of R&D activity in SMEs. The first and foremost is the need for profit. An industry group said that ‘companies do R&D because they want to grow and expand, build better markets, have new products and services, and export. Those things are the drivers’.² And the CSIRO told the committee that businesses aim ‘to improve productivity and grow market share to increase profitability’.³

5.5 In order to make profits, a firm must have successfully commercialised its R&D and established its distinctiveness in the market. Various witnesses stressed this point:

For any existing business to decide to invest in R&D, the initial expenditure produces no income until the R&D is commercialised.⁴ SMEs spend most of their time on R&D because they have to keep moving to find market niches.⁵ The way in which you maintain or grow that market is to be able to differentiate, to show a value proposition.⁶

You tend to plateau with existing products, so you need to be constantly putting money into R&D.⁷ Companies surveyed [by the Australian Electrical and Electronic Manufacturers’ Association Ltd] suggest that their business activities could be sustained for a period of approximately 3.5 years in the absence of on-going R&D. Companies were under constant pressure to improve and innovate in order to maintain their commercial viability. On average, 70% of current revenue was from “new” products developed within the last five years.⁸

We have been in R&D from day one; that was 25 years ago. We are not a build size but we have always developed our own products... I guess our decision is always: we are going to do it anyway because we have got to; we have got to have

2 Mr Tony Pensabene (Australian Industry Group), Transcript, pp. 130-131.

3 Mr Mehrdad Baghai (CSIRO), Transcript, p. 237.

4 Institution of Engineers, Australia, Submission No. 72, p. 7.

5 Ms Lindley Edwards (Venture Group Ltd), Transcript, p. 584.

6 Mr Sergio Duchini (Deloitte Touche Tohmatsu), Transcript, p. 188.

7 Mr Ian Charlton (Ecosol Pty Ltd), Transcript, p. 510.

8 Australian Electrical and Electronic Manufacturers’ Association Ltd, Submission 68, p. 1.

new products. ... we have got to be out there competing. If we do not do it, we are going to go backwards.⁹

5.6 The availability of capital is a crucial driver of R&D activity but:

... there are a number of capital gaps because, as the market gets more difficult, funders who have money for rent push their investments further up the value chain [meaning] that emerging and nascent ventures find it hard to access funding.¹⁰

5.7 For SMEs, this situation often means that they must seek venture capital which, however, may come at a high price because of the uncertainty surrounding the SME's capacity to successfully commercialise its R&D. The Australian Venture Capital Association noted that:

... the vast majority of SMEs in the venture capital sector experience considerable difficulty in raising capital to fund their operations, let alone fund R&D activities.¹¹

5.8 An individual firm is affected by the general level of economic activity in Australia: if the business cycle is down and profits are generally low, then businesses are unlikely to have the funds for R&D; if the times are good for business, then the situation is reversed. This point was made by an industry association which stated:

If you understand the fact that R&D has a very strong business cycle nature of it, after four years of companies with weak profits and weak business conditions holding off on their R&D activity, and with the economy going so strongly, it inevitably produces a large demand at a point in time.¹²

5.9 The same point was made by SMEs, one of whom told the committee that:

R&D is something off the side that we spend some money on if times are good. If times are hard, the labs fall off the end, the research staff is on the dole and that is the end of it.¹³

9 Mr Kevin Gillman (Queensland Manufacturing Leaders' Group; and Managing Director of AV Syntec Pty Ltd), Transcript, pp. 381-382.

10 Ms Lindley Edwards (Venture Group Ltd), Transcript, p. 580.

11 Australian Venture Capital Association Ltd, Submission No. 31.1, pp. 1-3; also Mr Mark Goldsmith (Australian Venture Capital Association), Transcript, p. 389.

12 Mr Tony Pensabene (Australian Industry Group), Transcript, p. 121.

13 Dr Geoffrey Swincer (Flexichem Pty Ltd), Transcript, p. 517.

- 5.10 In order to make profits and expand their business, SMEs need to get their products or services onto the market quickly:

I think our members are now realising that the way to grow the golden egg is to be more innovative, to develop new products and better processes, and to get them to the market quickly, because that is the name of the game in contemporary manufacturing.¹⁴

- 5.11 The availability of an export market can greatly assist an SME and thus act as a driver for R&D, especially given Australia's small domestic market. Nearly all SMEs stressed the importance of export markets, as suggested by the following quotations:

We have only got 18 million people in Australia and three million in New Zealand. What market do we have?... We have to be export oriented and global right from the very beginning.¹⁵

The world is our market. The Australian market is simply too small to support a company like ours. I would say that, for every 100 systems we sell, 99 would go offshore.¹⁶

If you want to grow a company—and we are talking in this case about fast growth companies...—you have to gain exports. That is where the market is.¹⁷

Our nascent organisations need to start looking at export markets a lot earlier than most other countries.¹⁸

I should point out that, in 20 years, our company has never done business in Australia; we have been a 100% export business from day one. As a high-tech company, our markets have always been principally in the United States.¹⁹

- 5.12 The nature of government incentive programs can boost a firm's access to capital, for example the government's tax offset (cash rebate) is particularly attractive to SMEs because they are so short of equity.²⁰ And the government's START grant is also attractive to SMEs, one of which stated that it:
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14 Ms Heather Ridout (Australian Industry Group), Transcript, p. 128.

15 Dr Patricia Crook (Dynek Sutures Pty Ltd), Transcript, p. 525.

16 Dr Stephen Sykes (Flavourtech Pty Ltd), Transcript, p. 457.

17 Prof. Murray Gillin, Transcript p. 90.

18 Ms Lindley Edwards (Venture Group Ltd), Transcript, p. 584.

19 Dr Ben Greene (Electro Optic Systems Pty Ltd), Transcript, p. 585.

20 Deloitte Touche Tohmatsu, Submission No. 59, p. 11 and p.28.

... has been crucial to our ability to quickly establish substantial R&D capability of our own in-house... It has also given our customers much greater confidence in us.²¹

5.13 It helps businesses, especially SMEs, if government R&D support measures are administratively simple and not too costly:

It is difficult for business to deal with the R&D tax concession and related incentives.²² [There is a] belief that the paperwork required to register for the tax concession scheme is biased towards larger companies, not SMEs.²³

Whilst the changes to the [taxation concession] legislation in 2001 were touted as a major boon for business, we believe the associated record keeping requirements are a continuing impediment to applications for the concession.²⁴

[There should be a] reduction in the government charge on patent annuity holdings.²⁵

5.14 Government tender and purchasing policies can act as a driver for business R&D, as one SME stressed:

The Commonwealth government is in a powerful position to foster business innovation by designing tenders and tender processes that are conducive to innovation.²⁶

5.15 It is not just access to capital, or access to export markets, that can be facilitated by government programs. They can also foster collaboration with public sector research bodies and thus enable firms (especially SMEs) to access this type of research. The CSIRO stated that:

Studies of technological innovation, especially in the more rapidly growing industries, inevitably conclude that business research and innovation depend to a very high degree on public sector research.²⁷

21 Dr Stephen Sykes (Flavourtech Pty Ltd), Transcript, pp. 456-460.

22 Mr Sergio Duchini (Deloitte Touche Tohmatsu), Transcript p. 189.

23 Deloitte Touche Tohmatsu, Submission No. 59, p. 28.

24 Flavourtech Pty Ltd, Submission No. 78, p. 5.

25 The Australasian Institute of Mining & Metallurgy, Submission No. 3, pp. 5-7.

26 Wave Global Pty Ltd, Submission No. 15.1 (supplementary submission).

27 Mr Mehrdad Baghai (CSIRO), Transcript, p. 238.

- 5.16 This was said to be particularly the case in Australia because we have ‘few large firms’ and it is ‘only large firms [that] can sustain a significant research effort’, stated the CSIRO,²⁸ which added:

Firms that build on the outputs of public sector research face reduced levels of technical risk... [and can utilise] public sector facilities that they would not be able to justify constructing for themselves.²⁹

- 5.17 Companies that spin off from public sector research agencies are said to have a high survival rate—and ‘survival’ is obviously a driver of R&D as no R&D can be done by a company that has gone out of business. The committee was told by an academic that:

My estimates of the survival rate of these companies after five years are about 75%. Some work... in France gives the same figure. This is significantly higher than the survival rate of other types of new start-ups... [And] they are very quick to establish strategic alliances... They are much more prone to develop these alliances than perhaps established companies seem to be.³⁰

- 5.18 Knowledge of government R&D support measures is another driver of R&D, especially by SMEs which:

... are often too concerned with the daily conduct of their businesses to know or care about the nitty gritty of taxation benefits for which their company may be eligible.³¹

- 5.19 Knowledge of industry characteristics and especially of research and market opportunities is another driver of R&D. This knowledge can be facilitated by the ‘clustering’ of like-minded businesses—governments need ‘to stimulate or support networks, particularly among SMEs’, said Deloitte Touche Tohmatsu;³² and the Chief Scientist enthusiastically endorsed clusters, noting that:

One example [of a productive cluster] is Melbourne’s \$150 million Monash strip that encourages bright young companies and university research to create new business opportunities. Sometimes the clusters develop around an industry or an idea, even though the companies may be

28 CSIRO, Submission No.22, p. 5.

29 *ibid.*, pp. 15-16.

30 Mr John Yencken, Transcript, pp. 87-88.

31 Deloitte Touche Tohmatsu, Submission No. 59, p. 10.

32 *ibid.*, p. 24.

scattered widely. AUSTMINE, consisting of 130 firms spread across the country, now earns \$2 billion annually through exports on mineral know-how. Clusters are a key strategy to allow SMEs to move away from the preoccupation of day to day survival and move more to the strategic horizons. Note, however it can take a decade to reap the rewards.³³

- 5.20 Access to major international corporations can also be a driver to R&D activity by SMEs, as suggested by one international pharmaceutical firm:

In a complex global industry such as pharmaceuticals, successful innovation is dependent on strong relationships between global corporations... and smaller R&D-focused companies. To this extent, the presence and activity of global corporations in Australian R&D is critical if small and medium sized Australian companies are to reach their full potential.³⁴

- 5.21 As well as major international corporations, the presence of very large Australian companies can act as a driver of R&D by SMEs—it is ‘critical’, stated an industry representative, to involve big companies because they are ‘going to pull a lot more SMEs behind them’.³⁵

- 5.22 Business R&D is greatly affected (if not exactly driven) by the general macroeconomic environment in which businesses operate. This environment includes the education, taxation, and regulatory systems, each of which is significantly affected by decisions of governments. ‘You cannot talk about science and innovation without talking about tax, education and business’, said a senior scientist,³⁶ whose own organisation noted that:

A whole-of-government approach to increasing business commitment to R&D would span education, R&D, taxation, health, trade, foreign affairs and industry policy.³⁷

- 5.23 This extends to the nature of the intellectual property (IP) regime within a nation, which particularly benefits businesses (especially SMEs) if it incorporates measures to smoothly and swiftly register IP

33 Dr Robin Batterham (Chief Scientist), Submission No. 25, p. 2.

34 Merck, Sharp & Dohme (Australia) Pty Ltd, Submission No. 55, p. 3 and p. 7.

35 Dr Edwin van Leeuwen (Intelligent Manufacturing Systems), Transcript, p. 322.

36 Dr Stuart Carr (Australian Nuclear Science & Technology Organisation), Transcript, p. 352.

37 Australian Nuclear Science and Technology Organisation, Submission No. 52, p. 9.

and resolve IP disputes. In this respect, the committee was told by a SME that the current IP regime 'is slow to review disputes' (taking up to five years to resolve IP disputes) and is 'non-committal when it comes to providing mechanisms to expedite the resolution of such conflicts'.³⁸

- 5.24 Lastly, consistent government policies affecting business R&D are a key driver of R&D activity, as suggested by many submitters including the Mining Institute which stated that 'one of the main impediments to private R&D is the ever-changing government initiatives'.³⁹ The Business Council of Australia expanded on these policies by drawing attention to the fact that 'frequent changes in taxes, subsidies, compliance requirements and the like can undermine efforts to induce higher BERD'.⁴⁰

Conclusion

- 5.25 The R&D drivers of SMEs and fast-growing companies include the following:

- profit;
- successful commercialisation of R&D;
- establishment of a distinctive presence in the market;
- access to capital;
- the general level of economic activity in Australia;
- speedy access to markets (especially overseas markets);
- government incentive programs and government tender/purchasing policies;
- collaboration with public sector research bodies;
- knowledge of the industry sector in which the firm operates;
- the presence of major international corporations (and large companies generally); and
- the national macroeconomic climate including the education, taxation, regulatory and legal systems.

38 Bosmin, Submission No. 2, p. 2.

39 The Australasian Institute of Mining & Metallurgy, Submission No. 3, pp. 5-7.

40 Business Council of Australia, Submission No. 58, p. 2.