

Innovation Case Studies Summary

What's in it for me?

Six innovation case studies have been developed by the BRITE Project of the Cooperative Research Centre for Construction Innovation. The case studies demonstrate the benefits of innovation and successful implementation strategies in the Australian building and construction industry. Many highlight the strengths of small and medium-sized businesses in regional areas. The case studies will help businesses improve their innovation performance.

Innovation in our Industry

In 2003, the BRITE Project of the Cooperative Research Centre for Construction Innovation undertook six case studies of innovation in the Australian building and construction industry. The case studies showed that businesses reap substantial benefits from adopting and extending innovations developed by others; a process known as *adoptive or incremental* innovation. This is in keeping with the findings arising from the Prime Minister's initiatives to map Australia's science and innovation capacity, which show that incremental innovation is a key driver of business success across a range of industries.

The case studies demonstrate that incremental innovation is driven by *market-pull* factors, often involving non-technological activity, such as linkages with global experts (1, 2 & 4)¹; relationships with manufacturers and clients (2 & 5); or building trust between project stakeholders (3 & 6). This is in contrast to *radical* innovation, which tends to be driven by *technology-push* factors. The distinction underlines the relative importance of organisational skills, compared to technical skills, for the majority of innovation undertaken in the Australian building and construction industry.

Case studies undertaken by the BRITE project illustrate the long-term benefits flowing from large-scale formalised research and development (R&D) programs (5 & 6). More significantly however, is the evidence that non-R&D innovation activity can also provide considerable benefits (1 & 3). This finding is in keeping with growing evidence nationally and internationally, and across industries, that R&D and non-R&D innovation activities are equally important in improving business performance. It also adds weight to the calls frequently made for a rethinking of the Commonwealth Government's R&D tax concession, with its narrow definition of eligible expenditure.

The case studies focused on innovation in the context of building and construction *projects*. The project-based nature of production within the building and construction industry adds a complication which is absent from other industries – although an innovator may see an opportunity to improve project performance, benefits flowing back to the innovator may be harder to see. This can reduce innovation in the industry. However, the case studies (2 & 3) have shown that *innovation history* is increasingly taken into account by clients in awarding work, potentially leading to less industry concern about the distribution of project benefits and greater long-term reward for 'best-for-project' thinking.

¹ Numbers in brackets refer to BRITE case studies (1-6) which most clearly demonstrate the point being made.

This document outlines lessons learnt from the six case studies, suggests approaches to improve business innovation performance, provides a checklist for business managers to gauge their innovative capability, and identifies potential innovation resources.

Lessons Learnt from the Case Studies

A number of common themes emerged from the six innovation case studies:

Key Participants in Innovation Processes

- *small regional firms* can be important innovation drivers because of their knowledge of local conditions (1, 2, 5 & 6)
- *manufacturers* play a key role in promoting innovation on projects because they are more likely to be undertaking formal R&D than contractors or consultants (2 & 5)
- *informed clients*, with high levels of technical competence, are an important 'market-pull' factor in driving innovation (1, 3, 4, & 5)
- *universities* play a key role in innovation networks, especially where innovation relies on formal R&D (2, 4 & 5)

Key Dynamics in Innovation Processes

- many successful innovations are based on access to international expertise (1, 4 & 6)
- standards act as a strong 'market-pull' factor encouraging the industry to improve performance (1 & 4)
- borrowing ideas from related industries is a useful innovation strategy, underlining the importance of adoptive innovation compared to original innovation (2, 3, 5 & 6)
- the type of contract employed by clients on projects has a big impact on the ability of stakeholders to try new approaches and hence innovate (2 & 3)

Overall, the experiences of innovators in the BRITE case studies highlight the highly interactive nature of successful innovation processes and the importance of robust business networking. Although R&D activities are shown to be important, the success of each innovation has been ensured by high level organisational expertise. Innovation then relies on technical advances *and* people skills.

How to Innovate Successfully

The case study findings, supported by a literature survey undertaken by the BRITE project, indicate that innovation in the building and construction industry can be usefully leveraged through:

Building Relationships with Key Players

- active use of innovation brokers to facilitate efficient access to technical support providers and other external players with complementary knowledge bases
- building robust relationships with manufacturers supplying the industry, in view of their involvement in R&D programs
- building long-term relationships with clients in view of the shift towards more cooperative approaches to project delivery

Streamlining Activities

- mobilising integrated approaches to construction projects, in response to industry fragmentation arising from the 'one-off' nature of most projects and the proliferation of small players
- improving knowledge flows by developing more intensive industry relationships, offsetting the disadvantages of production based on temporary coalitions of firms
- integration of project experiences into continuous business processes to limit the loss of tacit knowledge between projects

Growing an Appropriate Internal Business Environment

- building a culture supportive of innovation, including encouraging staff to share ideas, enhancing in-house technical competence, supporting innovation champions, appreciating the opportunities presented by problems; encouraging prudent risk-taking; and establishing recognition programs.

Effective Client Leadership

- maintaining high levels of technical competence, advanced demand patterns, and a positive approach to prudent risk-taking
- promoting innovative procurement systems, including partnering or alliancing, to enhance cooperative problem solving, the adoption of non-standard solutions, and equitable allocation of risk
- strengthening performance-based standards through the enhancement of technical knowledge and the formulation of simple enforcement strategies.

Innovation Checklist for Businesses

This Innovation Checklist is based on case study findings and has been developed to help business managers identify where they are and where they want to be. Business managers are invited to mark each item as appropriate, assuming that they might be asked to demonstrate the basis for their response.

Innovation Checklist

	I haven't thought about it Level 1	I am thinking of doing something Level 2	Yes Level 3	Yes, and we are constantly improving Level 4	Yes, we represent best practice Level 5
1. Do you have robust relationships with key industry participants, eg clients, manufacturers and universities?					
2. Do you actively monitor international best practice in your field?					
3. Do you actively monitor advances in related industries that might be applicable to your business?					

4. Do you have a formal system for transferring project learnings into your continuous business processes?					
5. Do you view problems or failures as opportunities for learning and growth?					
6. When you make changes, do you measure how well the changes have worked?					
7. Are staff rewarded for building relationships with key industry participants?					
8. Are staff encouraged to share ideas?					
9. Do you value key employees and have a plan to retain them?					
10. Are you developing new skills and competencies to support growth?					

(Checklist rating system based on work by the Construction Best Practice Program in the UK in 2001).

Business managers can look at the pattern of their responses and ask themselves:

Level 1: Is it in our interests to ignore these activities?

Level 2: Am I putting in the effort or resources needed to support these activities?

Level 3: Which of these activities should I make even better?

Level 4: How can I identify the strengths on which to build and improve even more?

Level 5: How can I capture and share these successes?

Additional Resources

Businesses wanting to move ahead will find additional resources at:

- BRITE Project (www.brite.crci.info)
- Cooperative Research Centre for Construction Innovation, Australia (www.construction-innovation.info)
- Commonwealth the Department of Industry, Tourism and Resources, Australia (www.industry.gov.au)
- Construction Excellence program in the UK (www.cbpp.org.uk), which currently provides the widest range of practical tools for building and construction organisations seeking to improve performance.

References:

Construction Best Practice Program (2001) *The Construction Performance Driver: A Health Check for Your Business*, UK: CBPP

Thorburn, L. and Langdale, J. (2003) *Embracing Change: Case Studies on How Australian Firms Use Incremental Innovation to Support Growth*, Canberra: Department of Industry, Tourism and Resources

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