



Submission No. 97

**SUBMISSION to
The House of Representatives Standing Committee on Science and
Innovation
INQUIRY INTO PATHWAYS TO TECHNOLOGICAL INNOVATION**

This submission has been developed by the management committee of Children's Discovery Museum Limited (CDML), a not-for-profit company which is working to establish a science and technology centre in western Sydney. We are supported in our endeavours by the Australian Academy of Technological Sciences and Engineering (ATSE), Questacon, CSIROSEC, DEST and the NSW Department of Education and Training, among others.

We would like to draw the attention of the House Standing Committee on Science and Innovation to a long-term issue which can be influenced by governments ... the development of a community from which successful innovators will emerge.

The pathway to technical (and other forms of) innovation best commences from childhood when young people, encouraged by their parents and carers, and the education system, and outside facilities/institutions, are given opportunities to experiment, to learn by doing, using technology and equipment, and by interacting with others. If this happens on a significant scale, it will provide the foundation for an innovative society.

Innovation is essentially problem solving in a particular context. Problem solving requires stimulation and practice. The benefits of having a pool of people with the background and confidence to attempt problem solving are significant. Technological innovation requires, in addition, a suite of special skills which are highlighted in the other submissions to your inquiry.

There are many initiatives in place to address the development of technological skills in our communities. Large components of education budgets are committed to this aim, mostly in high schools, technical colleges and universities. DEST provides funding for many innovative programs, including some which focus on developing innovative behaviour. However, there is a need for significant additional focus on early childhood and primary levels of education where this pathway to innovation is first developed. In this sector, most teachers are not able to stimulate an interest in science and technology because of limited training, low levels of personal confidence, and a lack of suitable equipment and learning environments. Access to hands-on activities which promote truly independent inquiry and experimentation are very limited.

Outside the education system, there are institutions such as museums, scientific organisations like CSIRO, and science centres such as Questacon. Many have outreach programs which visit primary schools, demonstrating aspects of science

and technology. These stimulate interest which must be followed up by practical experience if the effects are to be of lasting value.

Science and Technology Centres are places where effective follow-up can happen.

Most major cities, EXCEPT Sydney, have facilities of this kind. These facilities deserve continuing support and encouragement to develop hands-on exhibits where the educational experiences of young children can be developed further. In addition, museums which concentrate on "collections" need to be encouraged to devote a much greater proportion of their resources to exhibits which involve and engage young children. The literature abounds with reports of the power of "learning through doing".

Children's Discovery Museum Limited (CDML) has been working since 2001 to develop and stage exciting science and technology related activities for children aged 3 to 12 years. We have been inspired by the children's museum movement which is well developed in the USA and Europe. We have first hand experience of the power of children's museums to attract and stimulate youngsters. We believe Sydney, and indeed every major urban centre, should have such facilities.

Over the past 5 years, CDML has funded, constructed and staged, in turn, a series of activities during school holidays in Sydney. These include a simulated archaeology dig ("Kids Dig"), a house-building activity ("Build It"), racing car construction (and racing) using rat traps, ("RatRacer"), and a nutritional experience ("Tour through the Tummy"). More than 11,000 children have participated. Children and their parents alike have displayed overwhelming enthusiasm.

It is now time to set up a facility which incorporates these and other science and technology based activities in Sydney. We are negotiating for suitable sites in western Sydney, where the population of children is high and the need for stimulating activities is greatest. Questacon and CSIROSEC will be part of the greater venture to develop a comprehensive science and technology centre of which CDM will be a centrepiece.

A study into the feasibility of constructing a science and technology centre (Children's Discovery) in western Sydney has been funded by DEST and others, and is nearing completion. Market research conducted by an independent professional consulting firm, Environmetrics, indicates 250,000 visitors by year four of operation.

In establishing a science and technology centre, we believe we will be contributing significantly to the stock of resources which Australia deploys to develop and sustain an innovative society.

Submitted on behalf of the CDML management committee:



Dr Doreen Clark AM, Vice President ATSE
Chair CDML Board

5th January, 2006