

Key performance achievements for Questacon

- 1 419 968 visitors to Questacon exhibitions and programmes during 2004-05, which is an increase of more than 6 per cent from 2003-04.
- Two new exhibitions, developed in-house, were launched during the year: *Mini Q – Fun for 0-6 year olds*, launched by the Hon Gary Nairn MP, in December 2004; and *Strike a Chord-The Science of Music* launched in May 2005, by The Hon Pat Farmer, Parliamentary Secretary to the Minister for Science, Education and Training.
- Q Club memberships have increased by 28.3 per cent on last financial year.
- The Questacon website was visited 1 426 672 times, which is an increase of more than 39 per cent from the previous year.
- The Questacon *Smart Moves Invention Convention 2004 – From Idea to Enterprise* was a great success. This was the second convention held, with a 50 per cent increase on delegates from the previous year.
- Significant progress was made with the corporate sector enabling partnerships with NRMA (re-signing for four years) and a new three year sponsorship with Tenix Ltd.

Chapter 6

Questacon—The National Science and Technology Centre

AN INTRODUCTION TO QUESTACON

Questacon, the National Science and Technology Centre, increases awareness and understanding of science and innovation through imaginative and inspirational learning experiences.

Questacon's innovative programmes and exhibitions are developed in response to the Australian Government's strategic priorities, its innovation agenda and stakeholder feedback. Interactive exhibits, travelling programmes run by skilled science communicators, online content and science theatre are delivered at the Centre in Canberra, and across Australia with particular emphasis on rural, regional and remote locations, and overseas.

Questacon contributes to Outcome 3:

Australia has a strong science research and innovation capacity and is engaged internationally on science, education and training to advance our social development and economic growth (see Figure 5.1).

QUESTACON'S PRIORITIES

Questacon's priorities are reflected in its five-year Strategic Plan—the Q-Plan.

The Q-Plan identified the following strategic goals for 2004–09:

- Create interactive and inspirational experiences to increase science awareness in all Australians.
- Communicate the role of leading edge science and technology in shaping Australia's future.
- Build partnerships to develop our national role in communicating science.
- Promote and enhance the quality of science and technology learning.
- Contribute to the promotion of Australia's science, education and innovation capability.

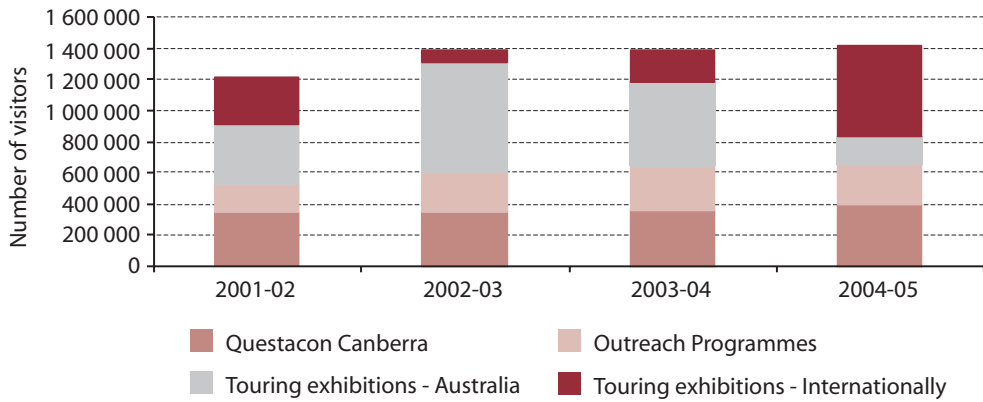
Questacon's performance information is reported below against each strategic goal.

Create interactive and inspirational experiences to increase science awareness in all Australians

The Centre in Canberra is a leading visitor attraction in the national capital.

Figure 6.1 shows that 1 419 968 people visited either the Centre in Canberra or a Questacon programme elsewhere in Australia or overseas during 2004–05. Visitors to the Centre in Canberra accounted for 29 per cent of total visitors; Outreach programmes 18 per cent and touring exhibitions 53 per cent.

Figure 6.1: Visitor/audience reach



Source : Questacon.

During 2004-05, 398 603 people visited the Centre and its programmes. This is an 11 per cent increase on the previous year and the highest reported number since opening in 1988. This increase is attributed largely to attracting a new demographic with the introduction of *Mini Q-Fun for 0-6 year olds* (see Case Study), launched in December 2004. *Strike a Chord-The Science of Music* has been another successful exhibition introduced this year.



Questacon Director Prof. Graham Durant (left), singer Hayley Jensen from *Australian Idol* (centre), The Hon Pat Farmer, Parliamentary Secretary to the Minister for Education, Science and Training (right) at the opening of *Strike a Chord-The Science of Music*.

Questacon has increased touring exhibitions overseas, including the extension of *Science on the Move* in Taiwan and *Fascinating Science* in Shanghai, China.

Questacon's Customer Service Charter underpins its relationship with its customers. Questacon regularly surveys visitors to its exhibitions and programmes and has a target of 90 per cent satisfaction. Visitors continued to rate satisfaction with exhibitions and programmes highly during 2004-05 (see Table 6.1). According to visitor surveys, Questacon achieved satisfaction rates of 85 per cent for the Centre in Canberra, 97 per cent for school groups and 95 per cent for Outreach programmes.

Questacon is working on strategies to address the main areas of concern raised by visitors which relate to overcrowding and access to exhibits awaiting maintenance.

Table 6.1: Performance information for Output Group 3.4

	2002-03 Actual	2003-04 Actual	2004-05 Actual
Total numbers of visitors/audience to the Centre, exhibitions and programmes (including school groups) that rate either satisfied or very satisfied.	>97%	>96%	>92%

Source: Questacon.

Communicate the role of leading edge science and technology in shaping Australia's future

Questacon has a number of touring (Outreach) programmes that travel across Australia (see Table 6.2). During 2004-05 there were 247 360 visitors to Questacon Outreach programmes. Every state and territory was visited by at least one of these programmes during 2004-05. Fourteen per cent of all Australian schools and nineteen per cent of schools in non-capital cities were visited.

Table 6.2: Impact of Questacon Outreach programmes on schools in 2004-05

Outreach programme	Number of visitors	Number of schools visited
Shell Questacon Science Circus	97 505	467
Questacon Smart Moves	65 585	330
NRMA Roadzone	20 000	0
Questacon Indigenous Outreach	11 421	32
StarLab	17 848	350
Questacon Maths Centre	8 430	42
Questacon Science Squad	26 571	160
Total	247 360	1 381

Source: Questacon.

CASE STUDY: Mini Q—fun for 0–6 year olds exceeds all expectations

Opened in December 2004, Mini Q—Fun for 0–6 year olds is an exhibition specifically aimed at Questacon's littlest scientists. Mini Q has been successfully integrated into Questacon to form an accessible community-wide resource that supports learning and development of younger children, introducing them to a stimulating and tactile environment, while teaching them coordination and confidence in relaxed and safe surroundings.

It is a new endeavour for Questacon to move into the area of 'complementary learning' for non-school aged children and quite different from the many world class exhibitions Questacon has designed and built since opening in 1988.

The exhibition offers an opportunity for babies, toddlers, pre-schoolers and school aged children (to 6 years old) to take part in various types of learning play in environments not commonly available to young children. The exhibition has an Australian theme and contains themed zones such as water, sensory, active play and a baby space.

The areas target specific developmental stages, a quiet room with mirrors and crawling space for babies and a sensory cave for experimenting with sound, light and touch.

The highlight of the exhibition is the water play area, where children and parents can pump and control the flow of water and co-operate to create a spectacular water show.



Questacon visitors enjoying Mini Q - Fun for 0-6 year olds

Each zone provides an opportunity to enhance social and gross motor skills while inspiring those under the age of six to see, hear, feel and do amazing things.

Mini Q has been credited with the increased popularity that Questacon has experienced for the first half of 2005. Memberships to the Centre have increased by almost 50 per cent on 2003–04 figures and visitor numbers have increased dramatically for the first half of 2005.

Questacon provided a range of programmes developed with, and for, Indigenous communities in remote areas. The programmes were delivered via the Shell Questacon Science Circus, Croc Festivals, Akaltye, regionally specific workshops and online. Hands on workshops were held in 25 schools in the Kimberley region of Western Australia, including remote community schools. The total number of participating students from the Kimberley region was 1796. Feedback from teachers, students and other community members showed that outcomes resulting from the visits by the Science Circus were very positive and constructive.

Questacon presented workshops at each of the eight Croc Festivals in Weipa, Katherine, Derby, Geraldton, Port Augusta, Swan Hill, Moree and Alice Springs. About 10 000 students were involved. Feedback from students and teachers has confirmed that Questacon added significantly to the rich educational programme of the festivals.

Questacon continued to maintain Questacon on the web, targeting students, teachers and teenagers. There were more than 1.4 million visits to Questacon's websites, an increase of more than 39 per cent on the previous year. The year's biggest new project was *Questacon Crime Scene Investigation (Q-CSI)*. *Q-CSI* is a multiplayer role playing forensic science game, aimed at high school students making study and career choices. Players have to solve a potential homicide in one of Questacon's galleries, using teamwork and the latest in forensic science investigation. *Q-CSI* is a part of the Questacon *Smart Moves* programme.

The Questacon *Smart Moves* programme, now in its fourth year, takes science and technology to young Australians in rural and regional areas. During 2004-05 the programme had 65 585 participants (see Table 6.2).

The Questacon *Smart Moves Invention Convention 2004 – From Idea to Enterprise (IC04)* was a great success and proved to be an event with great promise for the coming years. This was the second convention and doubled the number of 13 to 18 year old delegates to 30. The IC04 covered such topics as developing entrepreneurship skills, money management, marketing, networking, exporting, prototype building, higher education opportunities, sustainability and intellectual property. *IC04* brought together many partnerships, including the CSIRO Creativity in Science and Technology Awards (CreST) with 14 CreST students in attendance.

Build partnerships to develop our national role in communicating science

Questacon has continued to strengthen relationships with science based organisations and the business community. These partnerships enable the organisation to effectively deliver the message that science is fundamental to the success and future of Australia.

Partnerships with corporate Australia continue to see the growth of Outreach programmes and more frequent visits to regional and remote areas.

Questacon is progressing the recommendations of the *Reaching All Australians* report, published in 2003. The report was informed by a national working group set up to map the nature and extent of Outreach programmes delivered to schools and communities beyond the capital cities. The findings and recommendations of the report provide the basis of a national framework to enhance delivery of Outreach programmes in science, mathematics, engineering and technology. Questacon hosted a meeting of the national working group in June 2005.

During 2004-05, Questacon collaborated with the Australian Government and state science and technology agencies across a broad spectrum of goals. This year Questacon worked with both the CSIRO and Scitech Discovery Centre in Western Australia to jointly deliver outreach programmes in Western Australia and Queensland. This is in addition to the long standing relationship with The Australian National University in the training of professional science communicators. Questacon also played an active role in science communication on the world stage, with staff participating in conferences or undertaking professional development exchanges with science centres around the world.

Promote and enhance the quality of science and technology learning

Questacon seeks to develop appropriate support for teachers and parents. In the Australian Capital Territory, Questacon promotes itself as a learning resource, with professional development sessions and a teacher membership scheme. Key work was undertaken with the National Capital Educational Tourism Project to reach teachers around Australia. Questacon actively participated in the Australian Primary Principals' Conference held in June 2005.

Questacon to you (Q2U) was developed during 2004-05 to increase teacher membership and awareness. *Q2U* takes Questacon to schools and presents a short 15 minute science show encouraging hands-on participation.

In 2004-05, the Questacon maths awareness projects attracted more than 8400 students in the ACT region, Adelaide and Western Australia (see Table 6.2). Questacon raised awareness of the importance of maths through several projects in 2004-05. These included the *Questacon Maths Squad*, and the provision of substantial materials to Scitech in Perth and the Investigator Science Centre in Adelaide. *Maths Squad* staff linked up with staff from Scitech, to visit 28 remote schools in the Kimberley region of Western Australia. This project provided activity-based workshops for over 1100 students and teachers.

In 2004-05, the *Questacon Science Squad* programmes reached more than 26 600 participants (see Table 6.2) by visits to 175 schools and other groups. More than 800 school teachers and other adults attended the shows. Based in Sydney at the Australian Technology Park, the *Science Squad* visits primary and secondary school students in the Sydney metropolitan area. Presenters have also appeared on a nationally broadcast children's programme, *The Big Arvo*, on Channel 7 television.

StarLabs are portable, inflatable planetaria which bring the wonder of astronomy to many thousands of students who would otherwise not be able to visit a planetarium. In 2004-05, more than 17 800 students accessed Questacon's *StarLabs* in Wollongong, Sydney, Melbourne and regional Queensland.

The Questacon *Volunteer Explainer* programme is currently in its 25th year. Explainers work in the galleries providing additional science explanations to all visitors and running Discovery Trolleys. In 2004-05, 102 people volunteered their time at Questacon - totalling 10 620 hours. This year Gail Kerr was named ACT Volunteer of the Year in the category of Education, Science and Technology. Gail is blind and works as an explainer in the Centre galleries with her guide dog Bowden.

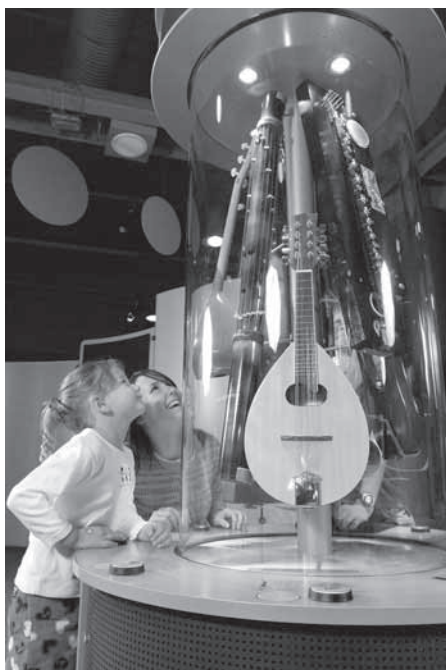
Questacon continued to promote and upgrade the Q Club membership programme with emphasis on activities for all age groups. During 2004-05, a 28.3 per cent increase in memberships occurred, bringing the total current memberships to 2689.

Contribute to the promotion of Australia's science, education and innovation capability

Linking to international science centre networks, and developing strong partnerships, is essential for Questacon to facilitate the exchange of ideas and to promote Australian science, education and innovation.

Representatives attended the 4th Science Centre World Congress in April 2005 in Brazil. Hosted by Museu da Vida (Museum of Life), this triennial meeting was attended by 1200 delegates from 50 countries. The overall theme was 'Breaking Barriers, Engaging Citizens'. At the previous World Congress, hosted in Canberra by Questacon, the challenges of relevance and sustainability received a major focus. The Rio Congress provided a further focus on these challenges, with a particular emphasis on equity and social inclusion issues. The World Congress provided an opportunity for Questacon to profile cutting edge initiatives, to learn of new developments, and to strengthen connections with science centres around the world.

Representatives also attended the European Network of Science Centres and Museums annual conference, in Finland, and the 5th Asia Pacific Network of Science Centres conference, in Hong Kong.



Questacon visitors enjoying Strike a Chord-The Science of Music

Questacon continues as a key player in international forums and research. Building on previous research, Questacon is currently involved in a major international project known as the APEC Science Centre Impact Study. With input from organisations through the APEC region, this study will research the impacts of science centres on communities.

Questacon continues to enjoy a strong relationship with Japan, building on ties established in 1988. Questacon completed an exhibition developed through a partnership between the National Museum of Emerging Science and Innovation in Tokyo, Japan. *Innovation: A Showcase of Australia-Japan Cooperation* was on display at the Aichi World Expo 2005 and will tour Australia and Japan as part of celebration for the Year of Exchange 2006.²⁴

MANAGEMENT AND ACCOUNTABILITY

Governance

Questacon operates as a distinctively branded business unit, within the structure of the department, reporting to the Secretary through a Deputy Secretary. Questacon also has an Advisory Council comprising a part-time chairman and seven members appointed by the Minister for Education, Science and Training. The Advisory Council is responsible for helping the organisation set strategic directions and for guiding development. Mr Leon Kempler OAM is Chairman of the Council. Council membership comprises the Director of Questacon and a number of distinguished representatives from the business, scientific and educational communities.

Financial management

Questacon continues to deliver programmes at an efficient average cost per visitor, which is confirmed when benchmarked against science centres worldwide. In 2004–05, Questacon achieved a cost per participant of \$12.25, a decrease of \$0.23 per participant compared to a cost of \$12.48 in 2003–04.

Evaluations confirm success in programme efficacy.

For the year ended 30 June 2005, Questacon's total revenue was \$17.1 million (an increase of 9 per cent on 2003–04); 41 per cent of this was earned from sources other than government, such as Centre admissions, fees for programmes, touring exhibitions and services, the Q Shop, sponsorship, venue hire, memberships and lease revenue.

Total expenses for the financial year were \$17.4 million, which exceeded the budgeted 2004–05 price of outputs of \$16 million by \$1.4 million. This variance is largely covered by non government revenue and relates to the delivery of sponsored programmes.

The centre continued to develop Q branded shop products and saw a record year with revenue up by 15 per cent on the previous year, coming in at \$1.2 million.

²⁴ www.innovation.org.au

Asset management

As the annual number of visitors to Questacon in Canberra continues to increase, and operating at excess of capacity becomes more the case, asset management plays an increasingly vital role in managing the Centre. Questacon manages an asset base of \$38 million, most of which relates to building, plant and equipment.

In line with departmental guidelines, a full stocktake and review of 'fair value' was undertaken for Questacon assets, resulting in a revaluation of exhibition assets.

RISK MANAGEMENT

Questacon's Corporate Level Risk Management Plan has been incorporated into the Questacon Business Plan as part of its risk management strategies and business planning processes.

During 2004-05 there was a strong focus in conducting comprehensive risk assessments for all new exhibitions, as well as the Outreach and Travelling Exhibition programmes. The opening of *Mini Q* created some new challenges for the Centre. With the demographic changes to now cater for 0 to 6 year olds, Questacon re-assessed safety measures to ensure the health and safety of the 0-6 age group.

Questacon uses the department's Riskman system and assessments have been completed on all major business processes. Assessments are reviewed and updated in accordance with the department's Risk Management cycle.

PEOPLE MANAGEMENT

Competitive remuneration and conditions

Industrial agreements (Certified Agreements (CAs) and Australian Workplace Agreements (AWAs)) underpin the department's workplace relations framework.

Questacon has in place a Certified Agreement 2003-2006. The fundamental principles underpinning this agreement are: recognition of the continuing high degree of professional commitment and goodwill from Questacon staff who work enthusiastically with a continued business focus; and an acceptance of the need for ongoing change and improvement to better meet business and community commitments. As part of the Certified Agreement, the performance management and feedback scheme is designed to enable and promote high levels of staff performance and continuous improvement.

Australian Workplace Agreements provide a flexible platform through which remuneration and terms and conditions of employment can be adapted to suit individual circumstances and enhance Questacon's capacity to attract and retain a highly-skilled workforce. All Questacon employees employed under AWAs are covered by the department's Leadership Protocol (see Leadership Protocol in Chapter 7) which articulates leadership expectations

Key staffing statistics are presented in tables 6.3, 6.4, 6.5 and 6.6.

Table 6.3: Full-time and part-time staff

	Ongoing		Non-ongoing			Total
	Full-time	Part-time	Full-time	Part-time	Casual	
As at 30 June 2005	42	9	59	17	87	214
As at 30 June 2004	45	8	43	15	85	196

Source: Questacon.

Table 6.4: Number of staff on Australian Workplace Agreements or Certified Agreements by classification level and location

Classification Level	2004-05		2003-04	
	ACT	NSW	ACT	NSW
SES	1	0	1	0
EL2	8	0	10	0
EL1	16	0	14	0
APS1-APS6	186	3	169	2
TOTAL	211	3	194	2

SES—Senior Executive Service; EL—Executive Level; APS—Australian Public Service

Source: Questacon.

Table 6.5: Number of staff in Branches, by gender

Branch	2004-05		2003-04	
	Male	Female	Male	Female
Office of the Director	2	5	2	4
Programmes	33	32	34	26
Corporate Services	9	11	5	13
Marketing and Ops	47	75	42	70
TOTAL	91	123	83	113

Source: Questacon.

Table 6.6: Range of salaries available by classification level

Type of agreement	Salary Range	
Classification	Lowest	Highest
Executive Level 2	\$76 425	\$89 544
Executive Level 1	\$66 264	\$71 555
APS 6	\$51 690	\$59 376
APS 5	\$47 858	\$50 748
APS 4	\$44 272	\$46 587
APS 3	\$38 497	\$43 693
APS 2	\$33 800	\$37 482
APS 1	\$16 544	\$33 010

Source: Qwestacon.

Non-salary benefits include:

- access to the executive vehicle scheme for Executive Level 2 employees employed under an Australian Workplace Agreement
- access to a discount on Qwestacon School Holiday Programme for all staff
- studies assistance—reimbursement for some or all of study related costs
- access to the Qwestacon Health Programme for all staff.

Learning and development

Development of staff is vital to Qwestacon's growth and success. An amount equal to 4 per cent of salary is allocated on an annual basis for staff development and training, which includes Qwestacon-wide development programmes and individual development needs.

During 2004–05 Qwestacon supported a range of developmental opportunities. These included the Cultural Management Development programme, Australian Workplace Skills programme, Project Management, Cultural Diversity Training, Coaching and Leadership Development, Mental Health First Aid, and Customer Service Training programme. A range of occupational health and safety and information technology related training was offered during the year, along with the opportunity to attend courses and conferences both nationally and internationally.

Information on occupational health and safety is reported in Appendix 1.

Information and communications technology

Qwestacon manages and maintains its own business applications and underlying information technology infrastructure. The focus during the year has been on upgrading and enhancing information technology infrastructure, especially the servers and desktops. Upgrades were also carried out on the finance and human resource management systems, including the implementation of a rostering system to record casual labour hours which links directly to the Qwestacon pay database (Chris21).

Environmental management

Information on ecologically sustainable development is reported in Appendix 6.