

Issues Relative to the Establishment of a National Forensic Innovation Facility



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ISSUES RELATIVE TO THE ESTABLISHMENT OF A NATIONAL FORENSIC INNOVATION FACILITY

A strong innovation capability is essential to:

- *identify and adapt emerging technology; and*
- *create new knowledge and technology*

that will enhance forensic science service provision to the justice system

BACKGROUND

In 2000, the National Institute of Forensic Science (NIFS) Board of Control approved the development of a coherent, national research strategic plan for forensic science. As a result, Dr Paul Kirkbride, Deputy Director of the South Australian Forensic Science Centre, was seconded to NIFS to develop an options paper.

As an integral part of the project, Dr Kirkbride visited and interviewed a wide range of people and organisations. The information gained from this process assisted in the formation of the recommendations.

Dr Kirkbride has prepared a detailed report but briefly, the preferred option is for the establishment of a decentralised facility utilising existing forensic science centres and tertiary institutions. Technology adoption, extension and creation are all in scope for the proposed innovation program as are the forensic disciplines of:

- biology;
- chemical criminalistics and documents;
- electronic evidence;
- field and identification sciences;
- illicit drugs and;
- toxicology.

The preferred funding model is for direct appropriation from the Federal Justice Department. The estimated cost of the facility is of the order of \$4m per annum.

There are a number of issues/events that collectively make this a critical and ideal time for the establishment of such a facility. They are listed below and then expanded upon:

- Prime Minister's Science, Engineering and Innovation Council report;
- Partnerships with Academia;
- Forensic Science/Policing Partnerships;
- International Partnerships;
- Increased Reliance on, and Increased Scrutiny of Forensic Science;
- Existing Infrastructure and;
- Recent World Events.

PRIME MINISTER'S SCIENCE, ENGINEERING AND INNOVATION COUNCIL (PMSEIC) REPORT

A paper on "Science, Crime Prevention and Law Enforcement" was prepared by an independent working group for consideration by the PMSEIC at its fifth meeting on 2 June 2000.

The paper contained a number of recommendations that are relevant:

- *"Improve law enforcement capacity to fully engage with the scientific community";*
- *"Appoint a high level S&T policy group, underpinned by a science and technology clearing house":*
 - *to provide "strategic planning to identify and foster solutions from science and technology for crime prevention, security and law enforcement needs".*
- *Develop a "new centre or network for diffusion of crime prevention and law enforcement technologies" which would:*
 - *identify "existing or emerging Australian or overseas technologies and systems that may potentially offer a cost-effective solution for a given purpose";*

- assess “*in detail, the extent to which those technologies or systems can, cost-effectively deliver what is required*”; and
 - “*assist in the transfer and/or dissemination of such technologies and systems once they have been selected for adoption by one or more jurisdictions*”.
- “*Identify mechanisms to encourage Australian industry and research agencies to participate in the development and production of new, affordable technologies for law enforcement*”.

In response to the report, the Chief Scientist (Dr Robin Batterham) stated:

“Innovation and the application of Australian science is important to ensure cost effective and socially appropriate crime prevention and law enforcement.

I look forward to hearing in due course of the initiatives that Australia’s law enforcement community may pursue in consideration of this report.”

Also in response to the report, the Federal Minister for Justice (The Hon. Chris Ellison) stated:

“It is vitally important that law enforcement agencies continue to grasp the advantages and partnerships that technology can offer. Developing these partnerships and knowledge will lead to the innovative use of existing science as well as the use of new science.

I am confident that this report will raise awareness of the great contribution that science and technology can make to law enforcement and its goal for a safer Australia”.

PARTNERSHIPS WITH ACADEMIA

Australia currently has seventeen Universities and TAFE Colleges that offer forensic science/medicine courses as part of their curriculum. These courses are attracting students with very high tertiary entry scores. Furthermore, a number of these courses have advanced to the point where higher degree-level students (Honours through to PhD) are engaged in research and innovation in partnership with the forensic science community.

However, these partnerships need to be extended and expanded as they provide an excellent resource for forensic science innovation programs. This is particularly so because forensic science facilities throughout Australia generally do not have the resources to engage in research and innovation and individual practitioners do not have time because of casework pressures.

Partnerships with tertiary institutions also create the opportunity to leverage off additional grants from major funding bodies such as the Australian Research Council (ARC), thus increasing the value of any funding provided for a dedicated innovation facility.

The forensic science community has already moved to develop strong ties with academia through the organisation of a national forum, joint workshops and formal links with the Senior Managers of Australian and New Zealand Forensic Laboratories (SMANZFL) and the Australian and New Zealand Forensic Science Society (ANZFSS).

FORENSIC SCIENCE/POLICING PARTNERSHIPS

In November 2001, SMANZFL and representatives of the Australasian Crime Commissioners Forum (ACCF) met jointly for the first time. The purpose of the meeting was to foster a more productive working relationship.

The key presenter at the meeting was Her Majesty's Inspector of the Constabulary David Blakey QPM, CBE from the UK. HMI Blakey outlined a number of initiatives that are being undertaken in the UK to improve the use and effectiveness of forensic science.

As a result of the meeting, it was agreed that NIFS propose to its Board of Control the piloting of 'Partnership Projects' in Australia. Similar projects are being conducted in the UK.

The purpose of these projects is to improve the awareness of the benefits of forensic science and its effective use at District or Local Area Command level.

The projects involve workshops that include representatives from police command, investigators, intelligence officers, crime analysts and different forensic science/medicine disciplines.

The workshops would provide an ideal vehicle for presentations on new technology evolving from a national innovation program and for identifying areas of need at the operational level.

INTERNATIONAL PARTNERSHIPS

Through SMANZFL, NIFS and a number of the Tertiary Institutions, the Australian forensic community has developed excellent relationships with international forensic organisations and overseas service providers.

Many of these organisations and service providers are currently receiving significant increases in budget for innovation and expansion.

For example, New Zealand has developed a position paper for a 'Virtual Forensic Science Research Institute' that will be presented to the Foundation for Research, Science and Technology Board in February. An announcement regarding the Institute is expected in May. The Institute would include ESR Forensic, the national forensic service provider, The University of Auckland, Waikato University and Victoria University.

The National Institute of Justice in the USA has committed US\$40m for DNA backlog reduction and US\$35m for a criminalistics laboratory improvement program in its 2002 budget. The National Forensic Science Technology Centre (NFSTC) in Florida received US\$8.5m of the latter.

There are particularly close ties between the NFSTC and Australian forensic groups including NIFS. There are also close ties with the National Institute of Police Research in Japan which has about 100 full time scientists on staff.

In Europe, the European Commission's Science Research and Technology Development Program has established a forensic science framework that commits €60m to forensic science research and innovation over a four-year period and, the UK government is continuing to provide significant additional funding for forensic science following the huge success of its national DNA database.

The existing relationships and additional funding initiatives being provided overseas present opportunities for innovation/research partnerships between Australia and these countries. Obviously, such partnerships would significantly increase the cost-effectiveness of any funding Australia committed to forensic science innovation and potentially, provide for a more rapid development and a wider range of new technology. However, productive partnerships will only be realised if the Australian forensic community is in a position to make a contribution that involves a realistic financial commitment.

INCREASED RELIANCE ON, AND INCREASED SCRUTINY OF FORENSIC SCIENCE

Changes to the type of evidence that is admissible in court (e.g. confession statements) and the emergence of forensic science as an intelligence source, in addition to its traditional role as an investigative aid has, and will continue to significantly increase the reliance on forensic science by the justice system. This trend is reinforced by the evolution of forensic science from the laboratory to the field, making forensic science results more accessible in a more timely fashion. This will continue to be a fruitful and effective area for innovation.

Projects such as the Innocence Project in the USA are also relying on forensic science (DNA profiling) to investigate alleged (and proven) wrongful convictions.

However, the advent and success of DNA profiling has brought about a marked increase in challenges to forensic science evidence. As DNA ‘beds down’, other forensic disciplines are being ‘put under the microscope’. For example, a recent court case in the USA resulted in evidence related to fingerprints being challenged and the Judge ruled that the expert witness could not state that a fingerprint originated from a particular person. Other areas of forensic science that rely on pattern matching and more subjective assessment such as ballistics/toolmarks and hand writing analysis are also being seriously challenged. A properly resourced innovation facility is essential to allow the conduct of appropriate research and validation studies that will guarantee the continued viability of these important forensic tools.

EXISTING INFRASTRUCTURE

Australia has an ideal existing infrastructure to support a forensic innovation initiative. Each State and Territory has well defined service providers and as mentioned previously (PARTNERSHIPS WITH ACADEMIA) the forensic science community has developed good ties with an increasingly active tertiary sector.

SMANZFL has a strong commitment to the national forensic science accreditation program run through the National Association of Testing Authorities (NATA). This would ensure proper validation of any new technology introduced into forensic science. SMANZFL also has well established and active Specialist Advisory Groups (SAG’s) covering all major forensic disciplines. The SAG’s are ideal vehicles for identifying areas of need and emerging technologies and for technology transfer following successful innovation programs. The SAG’s are also developing ties with similar groups in the USA and Europe.

NIFS works closely with the SAG’s providing funding for a well-established workshop program and Internet access to active online discussion groups. This would be a significant factor in keeping the community up to date in relation to a national innovation program and successful technology transfer.

CrimTrac, already established by the Federal Government would benefit directly from innovation directed towards the intelligence capability of forensic science and facilities such as the National Coroner's Information System (NCIS) will prove to be valuable resources for research and innovation data.

RECENT WORLD EVENTS

The terrorist attacks in the USA on September 11th 2001 heightened awareness that this type of event could occur anywhere in the world. Any terrorist attack is a crime scene and crime scene investigation and the subsequent analysis of items collected are an integral part of forensic science.

As mentioned previously (INCREASED RELIANCE ON, AND INCREASED SCRUTINY OF FORENSIC SCIENCE), the evolution of forensic science from the laboratory to the field is an important area for innovation. Improved field testing capabilities would provide for a more rapid analysis of any crime scene, including scenes resulting from terrorist attacks. This would be significant in a crime where rapid, reliable results could prove to be vital for the outcome of an investigation.

It may be considered unlikely that Australia would be involved in a terrorist attack of the magnitude of the September 11th incidences in the USA. However, the anthrax hoaxes in Australia that followed September 11th were a graphic indication of how this type of event can adversely impact on law enforcement services including forensic science. Each State and Territory had a different approach to the issue and different methods/levels of analysis. A national innovation facility would be in a position to develop an appropriate approach and standard analysis regime and to transfer the methodology/technology to all jurisdictions.