



PRO INNO EUROPE

# INNO LEARNING PLATFORM

**Good practice Identification –  
Advice for transferability  
Innovation in Knowledge Intensive  
Services Policies – Australia Mining  
Technology Services Action Agenda**

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# **1. CHAPTER I: Good practice identification**

## **1.1 *General Introduction and Overview of the Policy Practice***

The Australian Government announced an Action Agenda for the industry in 2001, noting:

- the importance of the mining technology services industry to Australian mining,
- the special issues created by the industry's complex interaction with the mining industry, and
- its growing importance as an industry and an exporter in its own right,

An Industry Action Agenda is a whole-of-Government initiative to provide a collaborative framework within which government and the industry can develop initiatives to address market impediments and allow industry to fulfill its potential. The Action Agenda provides a framework within which MTS companies can work with governments, research agencies, educational bodies and the minerals industry more broadly to develop, and implement, a vision for a sustainable and internationally competitive Australian MTS sector over the coming decade and beyond. Among the issues identified as central to a strategy for growth by the Action Agenda were:

- access to R&D services and commercialization mechanisms
- access to venture capital, and building awareness about investment capital in the industry
- the need to use electronic commerce in response to globalization
- the need to maintain the supply of specialist staff
- awareness and understanding of intellectual property

It is noted that each of these concerns involves some element of knowledge intensive service activities.

The Government endorsed the Action Agenda report - MTSAA Strategic Leaders Group (SLG) report Mining Technology Services: Australia Leading the World – on 12 May 2003. The report was the culmination of extensive consultations with all stakeholders, including relevant Commonwealth agencies, the States and Territories and the mining technology services sector.

There have already been achievements as a result of the Action Agenda. Workshops have been conducted on intellectual property services (provided by IP Australia) and on technology diffusion (provided by the Commonwealth Scientific and Industrial Research Organisation). There have been moves to improve the profile of the industry with students through a series of Minerals Council of Australia initiatives. Access to the APEC business card facilitates entry to a number of countries which are export markets for the industry, and entry for skilled migrants intending to work in the industry has been made easier. In addition, there is now a generally more vigorous dialogue within the industry.

## **1.2 *Rationale and Objectives of the Policy Practice***

### **1.2.1 Rationale of the MTS Action Agenda**

It's important to demonstrate how important the Mining Technology Services (MTS) sector is to Australia's economic growth and why the Action Agenda was put into place. The Australian minerals industry, which is serviced by the MTS sector, is global and contributes over five per cent to global GDP annually. The majority of world mineral production derives from surface mining, and the trend over recent decades has been to increase the scale of these operations.

The technology and services required to service the minerals industry are immense. In 1997, the Mining Journal reported that global metalliferous mine construction projects alone would require around US\$34 billion in specialized goods and services.

All the challenges the minerals industry faces require innovative technologies and solutions to promote growth and capability; a demand met by the MTS sector. Global trends including trade liberalization, direct investment and financial flows have created demand for specialization amongst the global activities of the mining industry, while the push for sustainable development has created opportunities for innovative exploration technologies and more efficient processing techniques.

The Mining Technology Services industry is a substantial Australian export industry and is at the leading edge of technological innovation. Australia's MTS sector is currently a world leader in providing innovative and highly technical products and services to both the domestic minerals industry and, increasingly, to the global minerals industry.

The largest market for Australian MTS products and services is the domestic mining industry, in particular the gold, base metals (copper, lead and zinc), nickel and coal sectors. Expertise is supplied over a diverse range of specialties from feasibility studies, surface and underground mining, exploration, processing, environmental protection and rehabilitation, through to applied research and development.

The rate of growth of the MTS sector has been constant over the past decade, with gross sales revenues estimated at \$3.1 billion in 2000-01 and at least \$5.6 billion by 2005-06, with a substantial increase in the number of companies with sales greater than \$5 million.

The sector's potential for growth is greatest in terms of exports. The Strategic Leaders of the MTS Action Agenda anticipate that under the right conditions, Australia can achieve their desired Vision of \$6 billion in exports alone by 2010.

### **1.2.2 Objectives of the MTS Action Agenda**

As the Mining Technology Services industry is a substantial Australian export industry and is at the leading edge of technological innovation, the Action Agenda aimed to support the continued competitive growth of the sector globally and build on its growing reputation as a world leader in technological innovation in mining.

The Action Agenda aimed to undertake an in-depth strategic analysis of the opportunities and impediments facing the industry, in order to provide realistic and achievable strategies for the industry that would encourage further investment in innovation and support the continued growth in Australia of world class R&D and technology development facilities.

The Mining Technology Services Action Agenda also aimed to establish a platform for the sector's continued growth and development globally and will support the growth and maintenance of world class R&D and technology facilities in Australia.

Specifically, by 2003, following the strategic analysis phase, the Action Agenda recommended the following objectives to support and facilitate the growth of the MTS sector:

- To better unify the MTS sector and to raise international awareness of Australia's MTS products and services
- To improve the access of the MTS sector to R&D services and commercialization mechanisms
- To raise the profile of the MTS sector within the financial community and to assist the sector in becoming more knowledgeable about investor options

- To identify and promote existing e-Business initiatives and assistance programs for industry. Initiate an industry awareness campaign, including greater dissemination of information on e-Business related issues.
- To increase the awareness and attractiveness of the MTS sector to graduates and personnel
- To raise the level of awareness and understanding of intellectual property rights, to better ensure global recognition of innovative Australian MTS products and services.

### **1.3 Origin of the Concept of the Policy Practice**

#### **1.3.1 Origin of the Practice**

Recognizing the need to address the sector's challenges in a unified way, key industry leaders called on Government to provide a forum to progress MTS sector policy. The Government announced the Mining Technology Services Action Agenda (MTSAA) on 6 June 2001 by Senator the Hon Nick Minchin, Minister for Industry, Science and Resources, recognizing the sector's importance to Australia's minerals industry, its innovative and technical focus, and its potential as a growth export sector.

The purpose of assigning an Action Agenda to this sector was to provide a framework within which MTS companies can work with governments, research agencies, educational bodies and the minerals industry more broadly to develop - and implement - a Vision for a sustainable and internationally competitive Australian MTS sector over the coming decade and beyond.

The Action Agenda was a governmental policy designed by the Ministry for Industry, Science and Resources.

An industry-led Strategic Leaders Group (SLG) was established in July 2001 to guide the strategic planning phase of the MTSAA. Membership was drawn from across the MTS sector as well as representatives from government and research agencies.

A major annual report of July 2003 was produced to reflect the outcome of the SLG's strategic analysis of the MTS sector from the first couple of years of the Action Agenda and includes the Vision and concrete recommendations developed by the SLG for the sector's future.

The recommendations were as follows:

- To better unify the MTS sector and to raise international awareness of Australia's MTS products and services
- To improve the access of the MTS sector to R&D services and commercialization mechanisms
- To raise the profile of the MTS sector within the financial community and to assist the sector in becoming more knowledgeable about investor options
- To identify and promote existing e-Business initiatives and assistance programs for industry. Initiate an industry awareness campaign, including greater dissemination of information on e-Business related issues.
- To increase the awareness and attractiveness of the MTS sector to graduates and personnel
- To raise the level of awareness and understanding of intellectual property rights, to better ensure global recognition of innovative Australian MTS products and services.
- That the Minister for Industry, Tourism and Resources will establish the Implementation Group to oversee the implementation of agreed recommendations arising from this Action Agenda.

In 2003, the Action Agenda entered the implementation phase as a result of the Strategic Leader Group's major recommendation that the Minister for Industry, Tourism and Resources establish an Implementation Group to oversee the successful realization and operations of agreed recommendations arising from the MTS Action Agenda.

As a result, the Action Agenda moved into the implementation phase on 10 October 2003, when Minister the Hon Ian Macfarlane MP, announced the members of the Implementation Group (IG).

A major report dated September 2004, produced by the Implementation Group, documents significant developments in the MTSAA during the 2004 calendar year.

These included: the formation of Working Groups to progress the SLG's recommendations; the conduct of two Technology Diffusion Workshops in Brisbane and Perth; and the hosting of a series of workshops on Intellectual Property (IP) for the MTS sector. Industry, government and research agencies were working together harmoniously and effectively, to progress the recommendations of the MTSAA.

### **1.3.2 Preceding Practices on which the MTS Action Agenda builds**

Australian Industry Action Agendas are a cornerstone of the Government's industry policy, recasting the traditional industry and government relationship, and providing a more effective basis for industry to turn potential opportunities into practical achievements.

The Australian government started initiating Action Agendas in 1997 to foster industry leadership: helping industries develop strategies for growth, agree on priorities and make commitments to change. They focused on actions industry itself could take to achieve its objectives.

Thirty-eight action agendas were announced between 1997 and 2007. The earlier action agendas targeted traditional manufacturing sectors, while some later action agendas addressed service-oriented industries. Following its announcement, an action agenda typically underwent a development phase of about one year, followed by an implementation period of three years; although some action agendas had longer life spans.

Following the change of government in 2007, it was decided to conclude existing action agendas by mid 2008. New policies, including Enterprise Connect and the associated *Industry Innovation Councils* initiative will facilitate interaction within industries and between government, industry and the research community.

### **1.3.3 Program Running Time**

The Action Agenda was initiated in 2001 and ended in 2008 following the government change in 2007. From 2001 through mid 2003, the Action Agenda was in Strategy and Analysis Phase led by the Strategy Leader Group (SLG) and then in 2003 moved into the implementation phase lead by the Implementation Group (IG).

After the annual report of the Implementation Group in 2004, there does not exist much updated information regarding the Action Agenda's activities and results.

As mentioned above, following the change in government in 2007, it was decided to conclude existing action agendas by 2008. Evaluation reports on many agendas were not generated.

## **1.4 Main Design Features of the Policy Practice**

### **1.4.1 Targeted Beneficiaries**

The targeted beneficiaries of the Mining Technology Services Action Agenda are the technology-based knowledge intensive firms of the Australian MTS industry. In order to define the mining technology services sector (MTS), it is comprised of technology based firms that service the mining industry. MTS includes products that may be based on information and communications technologies, products that incorporate other scientific, technical or engineering based technologies, and services that provide expertise within these technology areas on a fee or contract basis.

The MTS sector in Australia comprises over 500 companies and 10 or more are public research organizations. A number of firms which provide technology services to the mining industry identify themselves first by their activity, for example information and communications technology, so it is difficult to be precise about the size of the sector.

The Australian Bureau of Agricultural and Resource Economics (ABARE's) definition of the MTS sector focuses on technology based businesses that service the mining sector (excluding petroleum), which includes mineral exploration, mining and basic mineral processing activities. This definition includes products based on ICT, products that incorporate other scientific, technical or engineering based technologies and services that provide expertise within these technology areas on a fee or contract basis.

The ABARE survey places MTS businesses into six broad industry categories: exploration and other mining services;

- MTS machinery and equipment manufacturing (including scientific, electronic and other machinery and equipment except heavy machinery and equipment);
- construction services (e.g. mine site preparation);
- scientific research services (including services undertaken in public research organizations);
- technical services (surveying, consultant engineering and other technical services); and
- computer services (data processing, information storage and retrieval, computer maintenance and computer consultancy services).

The main customers for the firms are the major Australian-headquartered mining firms, which have operations world-wide, and the so-called junior firms which are exploring and developing smaller deposits, mostly in Australia. Like many service firms, MTS firms rely strongly on word-of-mouth for expansion of the customer base.

They tend to be located in the major mining states of Queensland, Western Australia, and to a lesser extent New South Wales. Most mining firms are headquartered in the major cities of Melbourne, Perth and Brisbane, but their operational sites are sometimes located in very remote areas of Australia and overseas – particularly in emerging mining operations in Africa, Eastern Europe and Asia. Thus MTS firms are more likely than businesses in other industries to be located in regional and remote areas, close to their main customers, the explorers and miners, and/or to have a capacity to travel to remote areas.

It is also important to recognize what the definition does not include – as these exclusions have given rise to different findings from other relevant surveys and may cause confusion if not fully appreciated.

The exclusions are:

- industry associations and institutes;
- university departments outside the Cooperative Research Centre (CRC) environment;

- finance, legal and management companies servicing the corporate side of the mining industry;
- wholesale trade companies and distributors;
- magazines and other publications; and
- heavy machinery and equipment, including transport.

**Table 1 - MTS Industry by Type of Business, 2001 Data**

	Sales \$m	Exports \$m	Employment person years
Exploration and other mining services	1 140	6	3 460
Scientific, electronic & other machinery & equipment	1 120	338	5 480
Construction services	44	38	59
Scientific research services	208	80	2 890
Technical services	456	84	4 440
Computer services	150	64	1 000

Source: ABARE (2002)

### 1.4.2 Policy Funding

The Action Agenda was a governmental policy designed by the Ministry for Industry, Science and Resources. All funding was entirely publicly governmental, and often received support from regional public agencies as well.

### 1.4.3 Validation of the Activities

An industry-led Strategic Leaders Group (SLG) was established in July 2001 to guide the strategic planning phase of the MTSAA. Membership was drawn from across the MTS sector as well as representatives from government and research agencies.

After the strategic planning phase, a major annual report of July 2003 was produced to reflect the outcome of the SLG's strategic analysis of the MTS sector from the first 2 years of the Action Agenda and includes the Vision developed by the SLG for the sector's future and concrete recommendations.

In 2003, the Action Agenda entered the implementation phase as a result of the Strategic Leader Group's major recommendation that the Minister for Industry, Tourism and Resources establish an Implementation Group to oversee the successful realization and operations of agreed recommendations arising from the MTS Action Agenda. A major report dated September 2004, produced by the Implementation Group, documents significant developments in the MTSAA during the 2004 calendar year.

#### **Implementation Strategy**

The implementation phase of the Action Agenda was a crucial stage in the further development of the MTS sector. The SLG recognized that this phase must be driven by industry stakeholders so that Australia can fully capture opportunities to enhance their share of the global MTS market. Industry worked with governments, research agencies and other stakeholders to establish a process for implementing the recommendations coming out of this Action Agenda. However the SLG recognized that changing environmental conditions within the industry and government may affect the implementation of recommended actions.

An industry-led Implementation Group oversaw this phase. The Group was a small, industry based group responsible for ensuring that the strategies and actions identified were translated into concrete and measurable activities. The Group was comprised of leaders and decision-makers from industry, industry associations, the research community and

Government, and was representative of the range of interests that make up the industry. Based on advice from the MTS sector, the Minister with policy responsibility for the development of the MTS sector invited the membership of the Implementation Group.

The work of this Group was also supported by the regular acquisition of statistical information on the Australian MTS sector. This statistical information assisted in establishing the cohesiveness of the sector and is also considered to be fundamental to measuring the success of the implementation stage of this Action Agenda.

The Implementation Group also had the responsibility to report regularly to the Minister on the progress made in the implementation of the Action Agenda recommendations.

***Responsibility for Implementation:***

To facilitate the implementation of the recommendations proposed in this Action Agenda, the SLG had accepted the offer of Austmine Pty Ltd, an export association supporting companies in the Australian mining services sector, to act as the lead industry representative body for the implementation phase of the Action Agenda.

Given the diversity of the MTS sector, there were a number of industry-based organizations with legitimate claims for representation on a body responsible for implementation. However, the SLG recognized that a single body must have overarching responsibility for the implementation of recommendations.

The SLG felt that Austmine is an appropriate project manager and could establish a project structure, including liaison with and identification of the most appropriate industry associations and/or professional bodies to undertake the various tasks that were outlined.

#### **1.4.4 Supported Activities**

Beginning during the implementation phase in 2003, the Implementation Group began specific activities to promote the MTS Action Agenda to react to the specific recommendations of the SLG. There were a number of significant developments in the Mining Technology Services Action Agenda. This report covers activities that occurred between the formation of the Implementation Group in October 2003 and September 2004.

1. **Formation of Working Groups** to progress and manage the results for the six concrete recommendations of SLG;
2. **Two Technology Diffusion Workshops in 2004** in order to improve access for the MTS sector to R&D services and commercialization mechanisms. The workshops were financed under the Commonwealth's Innovation Access Program. The work was undertaken by a consortia led by CSIRO Exploration and Mining and undertaken in collaboration with the Global Innovation Centre and Austmine. Participants in the Workshops were drawn from companies, researchers and stakeholders of the MTS sector. Particular emphasis was placed on small to medium enterprises (SMEs) that deliver technology services to the mining sector. Both workshops were well-attended and brought together senior industry participants from a range of disciplines within the MTS sector. Attendees demonstrated a desire to grow the industry, in addition to pursuing their own commercial interests and relationships. The final report from the Workshops included a number of Recommendations and an Action Plan which provides a template for future action in the Australian MTS sector by the parties nominated in this document and other interested stakeholders. Potential "signature projects" were identified. These include the formation of a "Supercluster", road-mapping activities and the establishment of one or more demonstration sites. The

creation of a mining technology demonstration site attracted the highest support. An additional project was suggested at the Brisbane follow-up meeting (post survey) to develop an audio visual CD for educational and promotional purposes.

3. **Publication of “A Guide to SME Business Finance”** in collaboration with Industry Policy Division of DITR in order to raise the profile of the sector with the financial community and investors. The Department has prepared a guide for Small-to-Medium Enterprises (SMEs) in the mining technology services (MTS) sector to assist them in gaining access to finance.
4. **Development of an implementation plan for Pathways** initiative by Minerals Tertiary Education Council (MTEC) to better increase the awareness and attractiveness of the MTS sector to Science, Engineering and Technology graduates and minerals industry personnel.
5. **Hosting a series of workshops on Intellectual Property (IP)** for the MTS sector to raise the level of awareness and understanding of IPR. IP Australia provided two half-day seminars on intellectual property (IP) issues in the MTS sector. These workshops were held on 1 September 2004 (Sydney), with the second on 3 November 2004 (Perth). The Department considered promoting further seminars and has called on industry (via the regular MTSAA Newsletter) to express their level of interest. The seminar included presentations by IP Australia, local IP professionals and a case study from a local mining company. Topics included:
  - key IP resources for the mining sector;
  - intellectual property issues in the mining industry;
  - protection strategies;
  - understanding your rights;
  - commercialization and licensing; and
  - getting the right IP advice.

### **1.4.5 Organizations that Provide Support**

Austmine – The Australian Mining Equipment, Technology and Services Export Association. Austmine is an export association supporting companies in the Australian mining services sector. Its members cover a wider range of activities than mining technology and related technological services. The important role played by Austmine in implementing the MTSAA was emphasized by their publication of the 6th edition of the Directory of Australian Mining Equipment, Technology and Services in 2004. This publication continues to be a valuable tool in the promotion both domestically and internationally, of firms within the sector.

In 2004-2005, the Australian Government (via the Department of Industry, Tourism & Resources) in conjunction with ABARE is currently conducted survey on the Australia MTS sector, to build upon information collected in a related survey conducted in 2002. The Minister for Industry, Tourism and Resources, and government departments continued to take an active role in implementing the MTSAA throughout its later years.

### **1.4.6 Cooperation and Knowledge Transfer between Actors**

Strengthening IPR was a major recommendation of the strategy and analysis phase of the Action Agenda. Specifically it was recommended that action should be taken to raise the level of awareness and understanding of intellectual property, to assist in exploiting the wealth of innovation within the Australian MTS sector, ensuring global recognition of innovative Australian MTS products and services.

The Implementation Group in collaboration with IP Australia worked together to:

- assist in the development of intellectual property best practice management strategies for MTS firms; and
- develop sector specific seminars on intellectual property which not only specify how MTS firms identify and protect intellectual property but explain in detail the various ways that intellectual property can be exploited (eg, manufacturing, licensing, assignment and franchising).

## **1.5 Implementation and Operation of the Policy Practice**

No information regarding budget figures throughout the years of MTS Action Agenda's operation (2001-2008) are publicly available. Also, the absence and deficiency of an evaluation report (at least one that is publicly available) after 2004, does not allow to show concrete measurable results nor demonstrate any actual figures of the size of the policy practice, specifically regarding how many MTS businesses they reached and affected due to the Action Agenda's activities.

## **1.6 Evaluation and Assessment of the Policy Practice**

### **1.6.1 Evaluation of the Policy Practice**

After 2004, there are no evaluations or annual reports that document further activities or report on results obtained from the initiative in its later years.

### **1.6.2 Results and Impact of the Practice**

By 2004, the Mining Technology Services Action Agenda which began in 2000 has stimulated a dialogue among the firms in the industry. This could be important in overcoming the fragmentation mentioned above and in generating the spillover benefits associated with collaborations and clusters. In this regard, facilitation of the Action Agenda amounted to both the provision by the Government of a knowledge intensive service, and the stimulation of further KISA. Implementation of the Action Agenda is the responsibility of an industry led Implementation Group, and it is likely that work to unify the sector will continue now that the initial step has been taken.

The Australian mining industry has experienced a period of prosperity, and the mining technology services industry has grown as a result. Further expansion will depend to a great extent on export sales. At present most firms that export significantly are assisted by the large mining firms who are their Australian customers. Government can contribute here by assisting individual firms, consortiums and industry groupings with access to foreign markets, and by helping to project a national brand image. This marketing perspective is particularly important because the industry is defined by its customers rather than by what firms do. Several case study firms reported that they had been assisted by Austrade, the Australian Government Trade Commission. Initially governments could assist by directly providing services, noting that few firms appear to use external sales and marketing services, but the objective would be for firms to develop their own skills in operating abroad.

It is not clear just how much firms in the MTS industry benefit from government programs, but usage may be quite low. If so, there may be a cost in good technology not being sufficiently commercialized, and also in technology which is being used in mining not being diffused to other sectors. Access to R&D institutions has been good, and the prospects for this industry are a strong motivation for maintaining Australia's research lead in a number of

the relevant sectors. Again, better communication within the sector could assist with adoption and diffusion of research and new technology.

Finally, the continued supply of graduates in science, engineering, and technology will be crucial to continued innovation. This was addressed in the context of the Action Agenda, and is also a more general policy concern of the Australian Government.

## **1.7 Role of Policy Involvement or Connections**

Australia's industry policy is relatively non-interventionist and rests first and foremost on providing general economic settings which foster efficiency. Recent policy has emphasized innovation as the basis for continuing competitive advantage, including a focus on commercialization of Australian research.

### **Government Programs:**

There are a number of Commonwealth Government Programs, which companies could access to obtain funding to implement specific recommendations of the MTSAA. These programs have been advertised to companies via the regular MTSAA newsletter which is available on DITR's internet site. They include:

- The Innovation Access Program (IAP) (jointly administered by AusIndustry and DEST) which provides funding to foster innovation by increasing the take-up of leading edge technologies and best practice processes by Australian firms. Funding provided under IAP can be used to develop a technology roadmap for the sector and provide strategic international alliances or industrial workshops.
- A new \$25 million Industry Cooperative Innovation Program is to be established by the Department of Industry, Tourism & Resources with funding from the Commercial Ready program. The new program will support cooperative projects between firms to develop and use new technologies which have the potential to boost the performance of key sectors. Priority will be given to projects meeting strategic industry needs identified through an Action Agenda. Projects will need to demonstrate outcomes which will enhance the competitiveness of industry broadly as well as benefit the participating firms. Firms will be required to contribute to the cost of individual projects. Further information will be available on the AusIndustry website ([www.ausindustry.gov.au](http://www.ausindustry.gov.au)) later this year.
- Companies may also be eligible to access funding under the International Science, Engineering, Technology and Innovation Showcasing Fund (administered by DEST) to support whole-of-country showcasing at key international events. The MTSAA secretariat can provide further information on these programs or the appropriate information can be accessed online at the AusIndustry website ([www.ausindustry.gov.au](http://www.ausindustry.gov.au)).
- There are also various programs available at a State/Territory Government level which may be able to assist industry in implementing the recommendations of the Action Agenda.

In addition to the impetus and services provided by the Action Agenda process, firms in the MTS industry have access to the range of industry programs offered by the Department of Industry, Tourism and Resources. Many are tailored to small and medium enterprises, recognizing that SMEs are important for the commercialization of new ideas in MTS, and that significant risks are involved. SMEs in the industry generally need assistance in building management skills and funding R&D in their early stages; they also need patient early stage capital, access to markets, and access to government and big business contracts.

The programs that can provide services to the MTS industry are:

The **Small Business Assistance Program** is a competitive grants program made up of three components: Small Business Incubators, Small Business Enterprise Culture and Small Business Answers. These initiatives are available to fund projects that help small businesses grow and develop.

**Commercial Ready** is a competitive merit-based program offering industry a single entry point to grants for early stage commercialization activities, R&D with high commercial potential and proof-of-concept activities.

**Commercializing Emerging Technologies (COMET)** is a grants program that targets management skills of businesses and individuals to increase the commercialization of innovative products, processes and services (COMET is particularly relevant to KISA and is discussed further in later sections of this report.)

The **Pooled Development Fund (PDF) Program** is designed to increase the supply of equity capital for growing Australian small and medium-sized enterprises (SMEs). PDFs raise capital from investors and use it to invest in Australian companies.

The **Innovation Investment Fund (IIF) Program** is designed to promote the commercialisation of Australian R&D, through the provision of venture capital to small, high-tech companies at the seed, start up or early expansion stages of their development.

**Industry Techlink** gives companies looking for technology solutions access to technology consultants who can help them diagnose their problem and provide a suggested way forward.

**Invest Australia**, in the course of attracting direct foreign investment, builds capacity by creating leading edge customers for the industry.

A number of programs aim to assist the Information and Communications (ICT) sector, which is an important component of MTS. These include The **ICT Incubator Program** which aims to improve the rate of commercialisation of ICT ideas and R&D by establishing incubators to increase the success rate of new business information in the Australian ICT sector. The incubators have varied business models, but all incorporate a structured business growth program which includes access to early stage finance, access to a management team and advisory panels, coaching and mentoring, and channels to markets and to international partnerships.

The **InnovationXchange**, which is a joint effort between government and industry, is a web based data exchange between business, government and research organizations designed to provide a trusted intermediary to assist businesses, especially SMEs, to gain access to new technologies, research and patents, education and training, financial and business services, government programs and networks.

## ***1.8 Good Practice Features Benchmarked against European Practices***

According to the “Policy Priority” categorization through both ERAWATCH and INNO Policy TrendChart, the specific policy priority category this practice, MTS Action Agenda, belongs to is 4.1.2 Support to Innovation in Services.

It is agreed that finally, innovation policies geared towards services have slowly grown over the recent years. The interest towards service innovation policy has been growing

simultaneously with the economic significance of services, especially in Europe. The importance of services, service related R&D and service innovation for economic growth and employment are now being increasingly recognized. Although non-technological innovation is driven by much wider range of factors than traditional R&D, R&D is relevant in many service firms, too.

The Australian Mining Technology Services Action Agenda is a governmental public policy that was aimed at a specific services sector (MTS), while many European government policies that support innovation are general policy initiatives that support services sector as a whole. There does not exist a specific European innovation policy for the mining services sector.

However many European policies exist that support services specifically or even other direct services markets like the tourism sector. Below is a European policy initiative (Finnish Example) which is aimed at innovation in services that is publicly funded, found through ERAWATCH.

### **1.8.1 Comparison between the MTSAA and Similar European Policy Practices**

- **Finland- Serve 2006- 2010**

TeKes, the Finnish Innovation Agency, has launched the Serve programme that seeks to facilitate service development in the targeted industries and it also promotes service related academic research. Serve is a five-year technology programme that aims to boost the development of innovative service concepts and new service business models. It runs from 2006-2010 and the total budget is about EUR 100 million, of which half is public funding and other half comes from the participating businesses. Serve programme also provides Finnish businesses and research organizations links to national and international networks through seminars and industry specific forums. Further on, like the MTS Action Agenda it offers tools for product management and IP issues. Serve programme facilitates the development of innovative service concepts that can be reproduced or replicated. In addition it offers support for service R&D projects where some technology or systematic method is being applied.

The Serve programme targets are:

- to increase the service product development capabilities of the service industries especially in professional services sector (different that MTSAA, that did not target professional business mining services)
- to promote systematic development of customer oriented service processes of small and medium-sized enterprises. (MTSAA found that many of the companies they were assisting were SMEs)
- to boost the development of new business models based on service innovations in different sectors

Unlike MTSAA, the SERVE programme funding is channelled to challenging projects that demonstrate novelty value at least at the national level. The evaluation criteria for project proposals are primarily assessed against the novelty of the service innovation, not necessarily on the novelty of the applied technology.

Like the MTSAA, the Serve programme seeks to stimulate both the supply and demand side of innovative services, as well as academic research on service science. A major effort of the MTSAA was to provide sector specific statistical data, continued market sector analysis, and reports and publications to assist the MTS sector.

## 1.9 Review and Implications of Good Practice Features

The Action Agenda policy was a particularly targeted and well defined action plan that aimed to stimulate the global growth and economic prosperity of a uniquely important national sector. This type of definition and focus is not frequently used in policies for innovation in services. Many European government policies that support innovation are general policy initiatives that support service sectors as a whole. There does not exist a specific European innovation policy for the mining services sector. It can be said that by narrowing in on a specific service sector, the government may find more direct and immediate results and improvements in that sector.

The most important lesson that should be highlighted is that if government is to create and implement an action that they deem important to a national, crucial, economically growing sector, the government should ensure that the policy has a sustainable plan to: carry out the life of the program and measure/evaluate the results of the program. It seems there were no decisions made by authorities of how the work was going to continue with a new change of government. The action agenda simply ended with the change of power, which is not a good measure of the previous 8-year national investment.

## 1.10 References of the Good Policy – Sources and Contacts

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## **2. CHAPTER II: Advice for transferability**

### **2.1 *De-contextualize the good practice***

#### **2.1.1 Context Dependency of the Rationale and Objectives of the Good Practice**

The rationale of the Mining Technology Services (MTS) Action Agenda is extremely context dependent and context specific. The MTS sector is very important to Australia's economic growth and for this industry specifically was the action agenda created.

The Mining Technology Services industry is a substantial Australian export industry and is at the leading edge of technological innovation. Australia's MTS sector is currently a world leader in providing innovative and highly technical products and services to both the domestic minerals industry and, increasingly, to the global minerals industry. And although the rate of growth of the MTS sector has been constant over the past decade, the minerals industry faces difficult challenges that require innovative technologies and solution to promote growth which is what the MTS sector provides. The Australian government found that they needed to unify and create an action aimed to support and continue to develop this MTS sector globally. In this way, the Australian environment and the specific settings of the MTS sector as the context are the most important factors of why the policy was created by the Australian government.

The overall objectives of the program are context dependent but can be considered fairly generalized as they would be for any sector stimulating policy. Objectives included: to better unify and raise international awareness of the MTS sector's products and service; to improve the access of the MTS sector to R&D services and commercialization services; to raise the profile of the MTS sector within the financial community; to identify and promote existing e-Business initiatives and assistance programs for the industry; to increase the attractiveness of the MTS sector to graduates and personnel for higher quality employment; and lastly to raise the level of understanding of intellectual property rights, to better ensure global recognition. These objectives, while specific to the growth of the MTS sector, can be transferred to other policies as well.

#### **2.1.2 Context Dependency of the Emergence of the Good Practice**

Recognizing the need to address the sector's challenges in a unified way, key industry leaders called on Government to provide a forum to progress MTS sector policy. The Government announced the Mining Technology Services Action Agenda (MTSAA) in 2001 recognizing the sector's importance to Australia's minerals industry, its innovative and technical focus, and its potential as a growth export sector.

Since, 1997, Australian Industry Action Agendas were a cornerstone of the Government's industry policy, recasting the traditional industry and government relationship, and providing a more effective basis for industry to turn potential opportunities into practical achievements. A total of 38 action agendas were announced between 1997 and 2007, but following the change of government in 2007, it was decided to conclude existing action agendas by mid-2008. New policies, including Enterprise Connect and the associated Industry Innovation Councils initiative would facilitate interaction within industries and between government, industry and the research community. This is an important factor that affected the life and sustainability of this innovation in services policy. It's significant to note that in this case, the government (and later the change of government) is an important context point on which the policy depended.

### **2.1.3 Context Dependency of the Design Features of the Good Practice**

The design features of the MTSAA are context dependent specifically regarding three important aspects:

- (1) the targeted beneficiaries
- (2) Policy Funding
- (3) Mechanisms to Validate Activities
- 

1. The targeted beneficiaries are objectively specific, as the agenda is only directed towards one sector, the Mining Technology Services industry. The MTS sector is comprised of technology based firms that service the mining industry. MTS includes products that may be based on information and communications technologies, products that incorporate other scientific, technical or engineering based technologies, and services that provide expertise within these technology areas on a fee or contract basis. The reason the targeted beneficiaries are an important factor to the implementation of the program is because it already predefined the exact companies, business type, and the geographical region in which these companies operate. This is a sector specific action agenda and therefore is very context dependent on the Australian industrial environment and export goals.

2. The Action Agenda was clearly a governmental policy designed by the Ministry for Industry, Science and Resources. All funding was entirely publicly governmental, and often received support from regional public agencies as well. The nature of this practice heavily depends on the fact that this is a strictly government-structured policy.

3. In order to structure the program and better validate its activities, the government used an interesting tactic, in where they appointed an industry-led Strategic Leader Group to guide the strategic planning phase of the MTSAA. Membership was drawn from across the MTS sector as well as representatives from government or research agencies. After the strategic planning phase was complete, a major annual report was produced to reflect the outcome of the SLG's analysis and recommendations. The major recommendation was to utilize an industry lead Implementation Group to manage the implementation activity phase of the agenda. The work of this Group was also supported by the regular acquisition of statistical information on the Australian MTS sector. This statistical information assisted in establishing the cohesiveness of the sector and is also considered to be fundamental to measuring the success of the implementation stage of this Action Agenda. The Implementation Group also had the responsibility to report regularly to the Minister on the progress made in the implementation of the Action Agenda recommendations.

### **2.1.4 Context Dependency of the Implementation Aspects of the Good Practice**

It is not possible to accurately discuss the extent of the context dependency of the policy's implementation aspects due to lack of information available. No information regarding budget figures throughout the years of MTS Action Agenda's operation (2001-2008) are publicly available. Also, the absence and deficiency of an evaluation report (at least one that is publicly available) after 2004, does not allow to show concrete measurable results nor demonstrate any actual figures of the size of the policy practice, specifically regarding how many MTS businesses they reached and affected due to the Action Agenda's activities.

### **2.1.5 Context Dependency of the Outcomes and Impacts of the Good Practice**

It is difficult to accurately discuss the extent of the context dependency of the policy's impact due to lack of assessment information available. After 2004, there are no evaluations or

annual reports that document further activities or report on results obtained from the initiative in its later years. The report of 2004 only details some of the activities that were performed of the practice.

It was clear that by 2004, the MTSAA which began in 2000 had stimulated a dialogue among the firms in the industry. Implementation of the Action Agenda was the responsibility of an industry led Implementation Group, and it is likely that work to unify the sector continued after that the initial step was taken. Assessments that prove this statement do not publicly exist. It is also not clear just how much firms in the MTS industry benefit from government programs, but usage may be quite low. If so, there may be a cost in good technology not being sufficiently commercialized, and also in technology which is being used in mining not being diffused to other sectors. Access to R&D institutions has been good, and the prospects for this industry are a strong motivation for maintaining Australia’s research lead in a number of the relevant sectors. Again, better communication within the sector could assist with adoption and diffusion of research and new technology.

It can be logically determined that the impact the policy did have on the MTS sector is dependent on the extent of use and involvement of the Australian MTS firms, and in that case is quite context dependent.

**2.1.6 Context Dependency of the Relation to Other Policies of the Good Practice**

Although Australia’s industry policy is relatively non-interventionist and rests first and foremost on providing general economic settings which foster efficiency, the MTSAA, is among a large mix of many Australian government action agendas. The MTSAA’s success does not rely heavily on the objectives of other government industry policies, but they surely complement each other. Recent policy has emphasized innovation as the basis for continuing competitive advantage, including a focus on commercialization of Australian research. In addition to the impetus and services provided by the Action Agenda process, firms in the MTS industry have access to the range of industry programs offered by the Department of Industry, Tourism and Resources. Many are tailored to small and medium enterprises, recognizing that SMEs are important for the commercialization of new ideas in MTS, and that significant risks are involved. SMEs in the industry generally need assistance in building management skills and funding R&D in their early stages; they also need patient early stage capital, access to markets, and access to government and big business contracts.

The MTS Action Agenda was clearly dependent on the nature of the particular reign of the Australian government during the time of their governance, as the MTS Action Agenda among all other implemented Action Agendas were concluded by 2008 when the change of government took place. This policy, among many others, was put to an end at that time.

**2.1.7 Context Dependency of the Good Practice Features of the Good Practice**

The table below provides a review of the good practice features and highlights the extent of their context dependency.

Good Practice Feature	Policy Aspect	Extent of Context Dependency/Specific
Developed with a specific target sector in mind, the MTS industry. It was not for	Rationale	Highly Dependent

example a policy to promote growth of many industries, R&D/commercialization in general, or SME development. It was a very focused policy.		
Government was able to realize the economic importance of the MTS sector to their global export growth	Rationale	Highly Dependent
Entirely dependent of the life and nature of the government (Negative Feature)	Design Feature	Highly Dependent
Government used an interesting tactic, in where they appointed an industry-led Strategic Leader Group and then Implementations Group to guide the strategic planning phase and implementation phase of the MTSAA. Membership was drawn from across the MTS sector as well as representatives from government or research agencies.	Design Feature	Moderately Dependent

## ***2.2 Summary of the De-contextualized Lesson of the Good Practice***

Certain features of the MTS Action Agenda can be separated by its context and turned into lessons applicable to good practices designed in different frameworks but aiming to similar objectives.

The policy was a particularly targeted and well defined action plan that aimed to stimulate the global growth and economic prosperity of a uniquely important national sector. This type of definition and focus is not frequently used in policies for innovation in services. Many European government policies that support innovation are general policy initiatives that support service sectors as a whole. There does not exist a specific European innovation policy for the mining services sector. It can be said that by narrowing in on a specific service sector, the government may find more direct and immediate results and improvements in that sector.

The most important lesson that should be highlighted is that if government is to create and implement an action that they deem important to a national, crucial, economically growing sector, the government should ensure that the policy has a sustainable plan to: carry out the life of the program and measure/evaluate the results of the program. It seems there were no decisions made by authorities of how the work was going to continue with a new change of government. The action agenda simply ended with the change of power, which is not a good measure of the previous 8-year national investment.

## ***2.3 Are there Favourable Circumstances and Atmosphere for Transfer?***

### **2.3.1 Is there good codified material in English, such as reports, studies, evaluations and assessments to transfer?**

There is not enough public information available to provide complete details on the policy. After 2004, there are no evaluations or annual reports that document further activities or report on results obtained from the initiative in its later years. The latest report of 2004 only

details some of the activities that were performed during the practice. Details from 2004-2008 are missing, and no evaluations exist. The only form of evaluation that exists is derived from the Action Agenda's Strategic Leader Group that was only responsible for the introductory planning phase of the agenda.

### **2.3.2 Are there relevant people willing/capable to transfer their knowledge? Proud of the practice? Attitude towards Europe?**

Several attempts (by email and phone) were made to contact the newly appointed Industry Innovation Council of the Australian Government that was deemed responsible of previous action agenda initiatives, but no response was obtained. As previously mentioned, following the change of government in 2007, it was decided to conclude existing action agendas by 2008. It can be assumed that it would be difficult to contact the same authorities that worked on implementing the action agenda as the managing actor has changed. Therefore, it can be concluded that there is not easy access to relevant people willing and capable to transfer their knowledge of the action agenda. An assessment of their attitude towards Europe cannot be made.

## **2.4 *Select two EU countries or regions where the context would be favourable***

After much research and to our knowledge, a major Mining Technology Service sector does not thrive in Europe. The Australian MTS Action agenda was a government policy targeted towards that specific sector, only. The activities of the action agenda were very dependent upon the context of the sector. As a strong MTS sector, as a knowledge intensive service activity, is not a possible target in a European country, we do not propose this Australian Action agenda be transferred to a European context. Furthermore, there are not the necessary publicly available reports/material or relevant people willing and capable to appropriately recommend how to transfer.

## **2.5 *Re-contextualize the practice in those countries and regions, discussing the new characteristics to the issues (2-8) of the good practice.***

Unable to re-contextualize due to insufficient available information and the nonexistence of a targeted beneficiary sector like MTS in Europe.

## **2.6 *Propose an actual plan on how to transfer practice***

### **2.6.1 Who should be involved?**

Unable to re-contextualize due to insufficient available information and the nonexistence of a targeted beneficiary sector like MTS in Europe.

### **2.6.2 What kind of visits by whom would you recommend?**

Unable to re-contextualize due to insufficient available information and the nonexistence of a targeted beneficiary sector like MTS in Europe.

### **2.6.3 What could be the main barriers, and how could they be addressed?**

Unable to re-contextualize due to insufficient available information and the nonexistence of a targeted beneficiary sector like MTS in Europe.