

THE ROLE OF NON-TRADE BARRIERS IN THE TRANSFER OF ENVIRONMENTAL GOODS AND SERVICES TO CHINA: IMPLICATIONS FOR A FREE TRADE AGREEMENT BETWEEN AUSTRALIA & CHINA

Dr. Turlough F. Guerin

SUMMARY

This paper explores the significant role that non-trade and non-tariff barriers have on the transfer of technology to China (from Australia). The paper focuses specifically on environmental technologies, drawing upon the author's own research and relevant research of other Australian professionals. These barriers are identified, in order of decreasing priority as: Limitations of the Rule of Law; Problems in the Protection of Intellectual Property; Implications of Modernisation of State Owned Enterprises; Fragmentation and Bureaucracy of the Chinese Government; Establishing Appropriate Level of Ownership; and the Need for Intercultural Sensitivity. The issues raised in this paper suggest that removing the tariff barriers to trade between China and Australia through a free trade agreement, while important, is unlikely to have the level of impact on the trading realities between these two countries, as it is claimed that a free trade agreement would bring.

INTRODUCTION

It has been 25 years since China opened its doors to the West. During that time, many of the companies that have entered or attempted to enter the world's largest market have had mixed success. The reasons for this are because of a range of trade and non-trade barriers that exist between China and potential importers (to China), seeking to transfer technologies. This issue of exporting and transferring technology to China has come into sharper focus in the last 5 years since China's accession to the World Trade Organisation (WTO).

In 2005, Australia is preparing to sign a free trade agreement (FTA) with China. While it is claimed that a FTA between Australia and China may enable many of the trade and tariff barriers to be overcome, it is unlikely to address the range of non-trade barriers that impinge upon the effectiveness of Australian goods and services providers in accessing the Chinese market.

AIM & SCOPE

The aim of this paper is to identify and examine the non-tariff and non-trade barriers to transferring environmental goods and services to China and how these may be overcome. The scope of this paper is a description of the non-trade barriers between Australia and China and particularly addresses the areas of trade concerning export of Australian environmental goods and services (EGS). It has been written for Australian vendors of environmental technologies that are aiming to transfer their technologies to China and as an information paper for the Australian Federal Government as it prepares to enter into a FTA with China.

It does not specifically address trade and tariff barriers, nor does it attempt to address technology transfer and trade in the broader areas of natural resources such as minerals and energy.

AN AUSTRALIA-CHINA FREE TRADE AGREEMENT

Proposed Benefits of an FTA

China is a significant export market for Australian goods and services exporters. The market potential remains enormous as the Chinese economy and disposable incomes of the Chinese grow. Australian services exports have more than trebled over the past decade, exceeding A\$1 billion in 2004. Much of this growth has been driven by growth in education, tourism and transport services. China was Australia's seventh largest services export market in 2004. The OECD states that China has the fastest economic growth rate in the world at 9.1% in 2003.

It has been claimed that an FTA between Australia & China would provide an opportunity to seek enhanced trading and investment conditions for Australian exporters by:

- Reducing trade barriers and discrimination which impede Australian companies from working or setting up offices in China
- Improving regulatory transparency associated with licensing and approval procedures
- Reducing barriers that impose additional costs
- Creating opportunities for Australian investment in the Chinese services sector.
- Expanding services exports and fostering greater integration of the Australian and Chinese economies.
- Provide opportunities to seek improvements in market access and to explore ways to address the operational difficulties confronting Australian service providers in China.
- Encourage increased mutual recognition of professional qualifications and address inconsistencies with business visa regulations.

It is self-evident that some of these issues will benefit from greater bilateral dialogue and cooperation facilitated by an FTA.

China and the World Trade Organisation

McCubbin (2004) claims that like their colleagues in many western countries, Australian commentators often measure China's level of compliance with its WTO obligations in the terms of China's bona fides. Where there has been substantial compliance, acknowledgement is usually couched in grudging terms; where they have failed to meet WTO deadlines, this is portrayed as a conscious decision by "the Government", an industry sector, or even in some cases a specific enterprise, to elect not to comply. Such responses fail to recognise the fundamental weaknesses of China's legal and regulatory systems.

McCubbin (2004) also claims that the reality is that whilst China has made rapid progress towards developing a more open and transparent legal system, in many sectors, the regulatory framework has failed to keep up with the pace of the transition from a command system to a free market economy (McCubbin 2004).

Following China's accession to WTO, commitments from China were negotiated for:

- Secure, improved market access (with built in growth)
- Tariffs bound (i.e. guaranteed)
- Elimination of unjustified non-tariff measures
- Phase out of designated trader regulations and procedures
- Adoption of international standards for testing and product conformity
- Increased transparency of rules, regulations and administrative procedures

Overall, McCubbin (2004) indicates that the Chinese government has made positive progress in addressing many of the systemic issues associated with agricultural imports and quota administration. However, many commentators noted something of a slowdown in implementation of WTO requirements over the past year or so particularly in areas of agricultural reform, intellectual property protection and trade in services. This has also involved preferential treatment for domestic businesses at the expense of foreign businesses.

Australian Industry Concerns in Trading with China and Limitations of a Free Trade Agreement

In 2004, the Australian Industry Group (AIG) conducted a survey of Australian businesses on how they have prepared for trading with China¹. It involved extensive member liaison with the formal component involving the survey of 848 manufacturers, and interviews with 50 companies. An informal component involved regular meetings with members and member forums. All manufacturing sectors were covered. The key findings were that China is top of mind with 68% of Australian companies rating China as having a “critical” impact on the future of their business (Table 1). A significant 88% of “affected” companies have adopted a formal strategy in response to China. In summary, while some see greater opportunities, many view China as a threat. Larger firms were more likely to see potential in export growth to China, with large and medium sized firms more likely to cite impacts in domestic and non-China export markets, and profit impacts relatively even for different sized firms.

A Free Trade Agreement will not solve the legal and regulatory challenges facing Australian companies trading with China or investing in China. Those issues are far deeper than any bi-lateral agreements. Importantly, they often constitute significant non-tariff barriers to free trade and investment. McCubbin (2004) has recently discussed the manifestations of those challenges, specifically as follows:

- The commercial realities of the “rule of law” in China and the shortcomings of China’s multi-layered, opaque regulatory approval systems,
- The ongoing failure of the system to protect intellectual property rights, AND
- The overwhelming importance of the massive program of reform of China’s state-owned enterprises (with whom most Australian companies trade or invest in China).

As McCubbin (2004) points out, the implications of a FTA between Australia and China are not clear particularly with respect to the impact it would have on overcoming the non-tariff and non-trade barriers which are well known to exist post-border in China.

Table 1. Non – Tariff Barrier’s and Other Impediments to Developing Markets in China Identified by the AIG 2004 survey

¹ www.aigroup.asn.au

Disregard for Intellectual Property

Lack of transparency in legal and financial systems

Inconsistent interpretation of laws across provincial boundaries

Lack of transparency in the application of taxes

Foreign investment restrictions

Difficulties in repatriating profits

Different bureaucratic rulings within and beyond provinces

Different customs requirements at different ports

Inconsistent enforcement of import duties

Unclear and conflicting standards across provinces

Development of unique technical standards

Conflicting quarantine controls

DEFINITIONS OF ENVIRONMENTAL GOODS AND SERVICES AND IMPLICATIONS FOR AUSTRALIA'S TRADE

An Overview and Global Definitions

This section describes the specific nature of the trade and transfer of environmental goods and services to China. It serves to provide an indication of what constitutes EGS and how large this industry is.

Many obstacles prevent reliable definition of the EGS industry. These include the multiple possible end uses of many EGS and incompatibility with standard industry classification systems, which mostly categorise by key constituents or appearance and lack the required level of detail. Multilateral and national agencies are pursuing efforts to further define the industry, of which the Organisation for Economic Cooperation and Development, OECD, has the broadest currency. The OECD defines the industry as follows:

“The environmental goods and services industry consists of activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use.”

Considerable debate surrounds the scope of the EGS industry, especially whether it should include so called environmentally friendly goods. Environmentally friendly goods are goods produced, used or disposed of in a way that has a reduced or minimal impact on the environment. The OECD definition of EGS does not include environmentally friendly goods defined as such due to their environmentally friendly production processes (Table 2).

Table 2. OECD Classification of Environmental Goods & Services

Air pollution control	The Environmental equipment and specific materials
-----------------------	--

‘Pollution Management’ Group	Wastewater management Solid waste management Remediation and clean-up of soil, surface water and groundwater Noise and vibration abatement Environmental monitoring, analysis and assessment Environmental services Air pollution control Environmental R&D Environmental contracting and engineering Analytical services, data collection, analysis and assessment Education, training and information Construction and installation
The ‘Cleaner Technologies and Products’ Group	Cleaner/resource-efficient technologies and processes Cleaner/resource-efficient products Indoor air pollution control
The ‘Resource Management’ Group Natural risk management Eco-tourism	Water supply Recycled materials Renewable energy plant Heat/energy saving and management Sustainable agriculture and fisheries Sustainable forestry

Potential Environmental Goods and Services Provides a Broader Definition

Environmentally friendly goods are goods produced, used or disposed of in a way that has a reduced or minimal impact on the environment. Demarcating between environmentally friendly goods and normal goods is difficult, as measures of environmental impact are always relative and community standards and technology are constantly evolving. Australia has a strong and expanding capacity to produce a wide range of environmentally friendly agricultural goods using improved production methods. Australia is also a world leader in meeting the ISO 14000 standards of environmentally friendly management practices. Levels of ISO 14000 certification are an indication of an economy’s potential and preparedness to measure up to international standards for environmentally friendly goods. Some European economies have the highest very high levels of certification, while the developing world and the United States have quite low rates of certification.

The Economic Analysis Unit of Australia’s Department of Foreign Affairs and Trade (DFAT) has prepared a discussion that seeks to circumvent some of the other definitional issues with environmental goods by measuring trade using the concept of potential environmental goods. Potential environmental goods and services (PEGS) are defined as those goods identified as having possible end uses in environmental management or protection, and are those goods listed on OECD and Asia Pacific Economic Cooperation, APEC, concordance lists between their respective classification systems and the Harmonised System used by customs authorities. Potential environmental goods, that is, including dual use goods, represent a larger group of goods than environmental goods, but since it is not currently possible to quantify accurately trade in environmental goods, they provide the only way of approximating trade in the industry. This concept may also simplify the

implementation of trade liberalisation measures by eliminating the need for new regulations governing goods with multiple end uses.

Australia's Trade in Environmental Goods and Services

The following data has been developed by DFAT (DFAT 2005). The EGS industry accounts for between one and two per cent of GDP for most countries around the world, including Australia, making it a significant part of the economy. Inadequate data prevent any reliable efforts at estimating the size of Australia's trade in environmental services. Nevertheless, various qualitative sources suggest Australia's sectoral strengths are concentrated in the larger segments of the industry, such as water treatment, wastewater management and waste management, and in mine rehabilitation. While Australia's precise exports of EGS cannot be quantified exactly, they are thought to be between \$A150 million and \$A300 million per annum. Exports of the broader category of potential environmental goods exceed \$A2 billion. Domestically, Australia's EGS industry has an estimated turnover of over \$A10 billion. Australia imports almost \$A7 billion in potential environmental goods, giving a sectoral trade deficit in potential environmental goods approaching \$A5 billion per annum.

The Environmental Protection Industry in Australia

The size of Australia's market for environmental protection impacts on its balance of trade. Australian Market Total expenditure on environment protection was estimated at \$A8.6 billion, 1.6 per cent of GDP, in 1996-97. The majority of environment protection expenditure was on wastewater management and water protection, \$A3 billion, and waste management activities, \$A2.5 billion. Expenditure to protect biodiversity and landscape accounted for \$A1.5 billion, with the remaining \$A1.6 billion spent on protection of ambient air, climate, soil and groundwater, research and development, noise and vibration abatement and other environment protection activities not separately identified. While the Australian Bureau of Statistics no longer compiles this data for the whole economy, in 2001-02, 1.6 per cent of GDP equated to around \$A11.4 billion. The Australian Bureau of Statistic compiles data on environment protection expenditure in the mining and manufacturing industries, two key consumers of environmental goods and services. This was estimated at \$A1.5 billion in 2000-01, or 1 per cent of their total expenditure. This included \$A482 million on solid waste management, \$A402 million on liquid waste and waste water management, \$A222 million on air emissions management and \$A105 million on mine rehabilitation. Other estimates of the size of the Australian EGS industry also exist. Environment Business Australia (EBA) estimated the turnover of the Australian industry in 2000 to be between \$A8 billion and \$A11 billion. An input-output analysis of the industry estimated direct expenditure on the environment was \$A7.9 billion in 1995-96.

Environment Market Drivers in China

Understanding the market drivers provides an important context for those aiming to transfer EGS/PEGS to China.

There is an increasing scarcity of clean air (from burning high sulphur fossil fuels) and fresh water due to widespread pollution. Also, rapid changes in waste types and quantities as the country industrialises, inadequate management of municipal solid wastes, sewerage infrastructure, deforestation and soil erosion, and the ongoing changes and additions to environmental legislation, are further drivers. The widespread and often inappropriate use of

agricultural chemicals is a further contributor to soil and water pollution. A parallel driver influencing the type of technology and services required is that the *per capita* costs for environmental technologies and services must be substantially lower than for those implemented in developed nations. In terms of actual financial commitments to environmental protection, the Chinese Government under the Green Plan, has planned expenditures in excess of \$US 15 Billion. As well as the local internal drive to introduce cleaner technologies (and remediation/treatment technologies), there is strong pressure on China to improve its environmental protection policies from external sources, such as being a signatory on the many international agreements and protocols (Guerin 2001).

Why Australia Should Transfer Environmental Technology and Services to China and the Potential Mechanisms

Australia's geographical location in the Asia-Pacific, *does not* on its own, position it to transfer technology to China. The US EPA Office of International Activities has initiatives aimed at bringing environmental technologies into China. So has the US Department of Energy, especially since energy efficiency technologies are also low pollution technologies. There are other programs including those administered by the OECD, Japan International Co-operation Agency, UNDP, UNEP, the Global Environmental Facility (GEF), the Asian Development Bank, the World Bank and the European Union.

There are, however, good reasons why Australian environmental technologies and services can (and have been) successfully transferred to China. Australia is technically advanced, with diverse products and services particularly in contaminated soil remediation and water treatment, waste management it has developed numerous best practice environmental guidelines and industry codes for environmental management². Australia and China also have good diplomatic relations. To provide some perspective on the number of services Australia can provide in this regard, in February 2000, Australia had more than 1500 companies offering environment-related services.

Australia has already had some successes, and there are good reasons why Australia can compete in that market – Australia is technically advanced³, Australians are innovative, resourceful, and pragmatic. Australians show a willingness to ask basic questions, to cross barriers organisationally and discipline-wise, and draw on expertise as it is required. But as I have illustrated, there are ample reasons for Australian businesses to be cautious.

The transfer and diffusion of environmental technologies within Australia has largely become commercialised, particularly in the area of land and water management (Guerin 1999). Although there is little specific published information on the role of companies in transferring environmental technologies to China, it is widely known that their role has been pivotal in recent years particularly through export activities. Due to the confidential nature of consulting, and the commercial realities of technology transfer, the outcomes of many projects are neither disseminated widely nor published (Guerin 1998).

The remainder of this paper examines the *critical issues* that vendors and service providers must consider for successful transfer of environmental technologies to China,

² The widespread adoption of environmental management systems by industry in general in Australia is a useful indicator - see W.J. Altham & T.F. Guerin (1999) Where does ISO14001 fit into the Environmental Regulations? *Australian Journal of Environmental Management*, June, Vol. 6: 86-98.

³ Though we need to improve our positioning in the international environmental arena. For example, of the 1500 companies mentioned earlier, less than 2% I would say are generally recognised as global players.

highlighting constraints that have restricted these activities in the past, and the lessons from these. It also highlights those aspects of the trading with China where Federal Australian Government support of industry efforts will be most important.

NON-TRADE BARRIERS TO TRANSFERRING ENVIRONMENTAL TECHNOLOGIES TO CHINA

Overview

Australian service providers and investors face challenges operating in or doing business with China. For example a wide range of barriers to entry exist for products and services imported into China. While controls and regulations at the border are relatively transparent, post – border procedures and arrangements are uncertain and inconsistent. These include trade and non-trade or tariff barriers. Trade barriers include tariffs, quota restrictions, licence and market access restrictions, restrictions on foreign equity and joint venture partners. There are also non-trade barriers including a legal system with limited effectiveness and enforcement, limited protection of intellectual property (IP), as well as a range of intercultural issues. All of these constraints impinge upon the effectiveness of Australian businesses exporting to China.

This paper has grouped these constraints into the following areas in terms of their potential to impact on free trade between Australia and China:

- Limitations of the Rule of Law
- Problems in the Protection of Intellectual Property
- Implications of Modernisation of State Owned Enterprises
- Fragmentation and Bureaucracy of the Chinese Government
- Establishing Appropriate Level of Ownership
- The Need for Intercultural Sensitivity

Limitations of the Rule of Law

Both the local partner and the Australian company need to understand the implications of Chinese laws, particularly as these are changing so rapidly. Legal advice should also be sought, preferably from expatriates in legal firms based in China to ensure that all applicable laws are indeed being adhered to. In summary, while there are numerous laws covering businesses trading in and with China, they are only weakly enforced.

A facet and consequence of the weak laws is unfair competition in the environmental markets. The major problem here is protectionism in local markets and by various government departments. Some Chinese companies try to set up for themselves an exclusive economic zone in which they can produce and sell their products. Obsolete products are then protected with a consequent loss to the environmental protection industry and to the national economy as a whole.

A further problem is that it has been claimed that some Chinese companies use anti-protectionist measures to ensure that a foreign company's products or services are prevented from entering into the local Chinese market. It is also claimed that some companies use false advertising or create fake technical certifications in order to compete unfairly. In the present

situation in China, Government rules and policies play a more important role than written laws in the economy and in industry. Further, there is rarely any active enforcement of laws at the lowest level in the Chinese Government. This accounts for the widespread problem of local protectionism.

So while there are laws prohibiting anti-monopolistic and anti-competitive behaviour, the existing laws required consolidation to remove many of the existing inconsistencies (McCubbin 2004). China lacks an anti-competitive authority charged with the responsibility, and equipped with the sanctions to make the law effective in daily business. As McCubbin (2004) indicates, with the best policy settings in the world, one simply will not get consistent, predictable outcomes from the administering authorities without an institutional program to build understanding of the purpose, as well as the words, of the relevant laws. If the administrators do not have a consistent understanding of the law, there is little chance that the corporate sector will modify its longstanding business behaviour.

The transition to a free market economy has also turned approval processes upside down. Under the command system, the State Planning Commission in Beijing issued directives to its branches throughout the country, usually based on State Council rulings. Regulation was “top down”. In most industries, regulation is now “bottom up”. Beijing has devolved much of the approval process to provincial and municipal authorities, which administer regulations according to their own interpretation. However, problems arise on major projects, which require Central Government approval. It is all too common to find that, having negotiated the bureaucratic maze of local and provincial authorities successfully, the National Development and Reform Commission in Beijing then declines to approve a project (McCubbin 2004)

In effect, the regulatory system acts as broad non-tariff barrier to market access, in this case for the major international mining houses, which a traditional free trade agreement is unlikely to resolve.

Problems in the Protection of Intellectual Property⁴

China is plagued by a history of lax laws on intellectual property rights and poor enforcement of these laws. The risk of technology “leakage” or loss is greatest when the Chinese partner is in the same business as the Australian technology vendor. Vendors must be ready for this and take appropriate action. Successful Western companies limit the amount of sophisticated technologies in the Chinese joint venture. The Chinese government is promulgating new laws to combat this problem, but this is a “deep-seated” cultural issue that will not be changed in the near future, even with training of the local Chinese partners. One perspective on the problem that was shared with me was that some Chinese companies looked upon fines (where these were actually administered) as “simply another overhead”. With regard to dealing with weak laws, Australians should (and usually do) recognise the importance of trust. With weak laws, whom can you trust in an important business venture? This illustrates the importance placed on guanxi (family and close friends) in business deals in China.

⁴ Lui (2005) provides an in depth, and up-to-date review of intellectual property rights and their protection in China.

The lack of enforcement of intellectual property rights is a major concern of many Australian companies doing business with China across many industry sectors. Australian manufacturers are already expressing concern about an FTA with China. If the clear message is that Australian innovation is crucial to competing with low cost manufacturers in China, then protection of those technological advantages is obviously vital. Enforcement of intellectual property rights is largely the preserve of an administrative, rather than a judicial system in China. Of the 43,000 infringement claims over the past 12 months, over 40,000 were processed by the State Administration for Industry and Commerce (“SAIC”). This leaves foreign companies at risk of “home town” determinations especially at local levels of government (McCubbin 2004).

McCubbin (2004) states that China is serious about reform of intellectual property protection, not necessarily because of its WTO commitments, but rather because China now produces more than 350,000 technologically trained engineers every year, who in turn are generating world-class technology. According to the OECD, it is third in the world in gross expenditure on R&D at \$60M USD. It also has 750,000 researchers, which is second only to the US in total number. China is therefore rapidly learning the value of technology, and the need to protect it. Companies which previously moved their manufacturing operations to China to take advantage of a low cost base, are now regularly moving their research and development operations to China also to take advantage of this local technological skill base.

It is likely that Australia has grossly under-estimated China’s technological capacity. Australian manufacturers will need sustained reliance on their innovative skills if they are to remain competitive, with or without an FTA. Regardless, progress towards effective intellectual property protection will still be perceived by Australian companies as an important consideration in determining whether an FTA can deliver real market access in China.

But this problem of intellectual property loss may also represent an opportunity, at least to some extent. Australian companies can harness this copying ability of the local partner. Activities that are difficult to replicate are those involving the provision of high quality consulting and advisory services, and the product of strategic alliances (i.e. synergy generated between collaborating vendors). The down side of a high quality technology or service in China is that the market interested in paying the higher price for this is often limited. Therefore the appropriate level of quality must be chosen to meet the local customer demands. It should not be assumed that higher quality is in demand in all markets in China. More often than not, price is more important.

Implications of Modernisation of State Owned Enterprises

Another barrier to trade is the modernisation of the SOE’s. Notwithstanding China’s rapidly expanding private sector, the reality is that most of the significant transactions undertaken between Australia and China involve SOE’s. Enterprises such as the China National Offshore Oil Corporation (LNG), Shanghai Bao Steel (iron ore), Wuhan Iron and Steel (iron ore) and China Huaneng (electricity), to name but a few, are SOE’s. In March 2003, the State Council, China’s “Cabinet”, established the State Assets Supervision and Administration Commission (“SASAC”) to manage and supervise the Government’s investment in its 189 largest enterprises, excluding the banks which have their own regulatory body. SASAC is charged with the task of modernising these SOE’s by introducing corporate governance principles and transparency, and divesting non-core businesses, to make the enterprises attractive to foreign capital (McCubbin 2004).

To provide an indication of the significance of the SOE's, every year in China the reform of the SOE's creates 14 million unemployed workers. This is in addition to the 10 million workers who enter the work force from the education system each year, and the 140 million unemployed or under-employed rural workers throughout the country. Furthermore, Australian companies are well advised, when contracting major projects with the SOE's, to go beyond the commercial terms to satisfy themselves that the relevant SOE will be permitted to meet its contractual commitments, either at all, or more likely, within the time parameters set by the contracts (McCubbin 2004).

The reform process of the SOEs will reshape China's economy. More importantly, the behaviour of the SOE's will drive market behaviour so significantly that it will have a substantial impact on both the implementation and the compliance with the terms of any Australia-China Free Trade Agreement (McCubbin 2004).

The Chinese Government is Fragmented & Bureaucratic

In China, the government has four main levels:

- (1) Central,
- (2) Provincial,
- (3) Districts and
- (4) Municipal (County).

Each level of government has a five-year plan and associated programs that are the mechanisms to release funds for environmental activities.

The State Environmental Protection Administration (SEPA) has overall responsibility for environmental management in China. However, there will be more than one government agency involved in decision making for any particular environmental program. Interacting with the Chinese government can therefore be complex. Furthermore, it needs to be recognised by vendors that there are only very loose connections between government departments and this inevitably leads to lack of communication. As the vendor, it is important to take the lead, ensuring the correct connections are sort out. But this does not mean "any old" connections.

Exporters of EGS/PEGS must be flexible and open minded to the bureaucratic and often unpredictable changes in the Chinese Government. The Australian company should take special care when getting involved in local government issues. Such involvement by the foreigner may cause unnecessary confusion. However, such interactions should not necessarily be left to the Chinese partners. So what does one do? Develop friendships with both the Chinese partners and the local government so trust can be built between all parties.

The Chinese Government's preferences for technologies are for total technology and service solutions, particularly in the area of water and wastewater treatment⁵. Australian companies should be aware that sometimes that the Chinese insist on the most advanced technology or version of a product is marketed in China, even if a lower level of technology would be more suitable.

Establishing Appropriate Level of Ownership

⁵ This has been described in "Doing Environment Business With China" prepared by Environment Australia - see it at <http://www.environment.gov.au/epg/eifu/chinaguide/china.pdf>.

There are numerous options for an Australian company entering markets in China. Options for determining level of ownership are:

- (1) “going it alone” versus partnering;
- (2) if partnering, wholly owned versus equity joint venture;
- (3) if going it alone, green field versus acquisition; and
- (4) if acquisition, “let it be” versus restructuring.

Each of these options has implications for knowledge (and technology) transfer.

Establishing the right level of ownership in a joint venture is important, but of equal importance is that forming a joint venture with Chinese partners should not be assumed to be the way to go. Many multinational corporations (MNCs) remain in “unhappy marriages” as the majority of joint ventures in China continue to lose money. In fact, since the 1990s, there has been a steady decline in foreign direct investment in China through joint ventures. One of the reasons being that many foreign managers have come to perceive their local partner as a burden rather than as an enabler, while the Chinese are disappointed about unfulfilled expectations in these ventures. As a fundamental requirement, it is critical to establish a local presence. A safe first step in this regard is to establish a partnership with a local organisation already well established in China. Further, an effective sales and distribution system for a technology and/or service needs to be developed commensurate with the geographical region and the client base aiming to be served. This sales and distribution system must be closely aligned with the vendor’s or service provider’s networks.

The Need for Intercultural Sensitivity

Although all the right technical skills may be present, these will not compensate for a lack of inter-cultural sensitivity, particularly those related to management and other interpersonal relations. In considering technology transfers to China, the inter-cultural dimensions of networking, speaking, questioning, flexibility and appreciating differences in cultural values, and their implications for training and organisational learning, are critical.

Networking

China has been described as a network of networks. The critical issue in establishing a business in China is to harness this interpersonal network. The network provides leads, and these leads can initiate relationships. Success in these markets relies on developing close, personal ties, and these require persistence, consistency and time. “Guanxi” is the mutual obligation that derives from being connected to someone through a third person. The Australian company should develop relationships with colleagues in the expatriate community in China and work to assist other expatriates to provide the necessary inroads into the Chinese community. e.g. through the Australia-China Business Council. Conferences and industry exhibitions, particularly in China, have a key role in providing Australian vendors with access to trade, government officials and decision-makers from China. They assist vendors to define what innovations are in demand and what procedures and protocols should be followed to assist technology transfer and subsequent adoption. They also provide fora to highlight those problems that technologies are required to address, though I suspect we tend to focus more energy on delegations (both from and to China) than is probably warranted.

Speaking

It is advisable when presenting to the Chinese, to keep sentences short. Out of politeness, the Chinese generally do not ask for the speaker to repeat what has just been said. One-on-one conversations are less problematic since there is no audience to feel embarrassed in front of (i.e. no loss of face). Also, it is not uncommon for them to elicit a reluctance to advance any opinion or response that runs contrary to a visitor's viewpoint. This means that virtually, by default, one can gain "support" (or more accurately, an illusion of support) for a point of view regardless of the proposition one has in mind. If, however, one is looking for critical appraisal in a business situation, where the individuals being addressed anticipate profiting from what is being proposed, it is unlikely that one will get constructive comments. Do not assume that you have been given critical appraisal during a business meeting.

The pattern of silent communication in oriental languages often frightens the Westerner. When Westerners communicate, one person stops, and then the other person usually speaks (or even jumps in). Chinese on the other hand tend to have silence between each uninterrupted discourse. Differences between tone of voice of the Westerner and the Chinese should also be recognised. While in certain Western cultures it is common to use exaggerations in tone to provide emphasis to a point, the Chinese may interpret this as loss of face, and subsequently may not take the Westerner seriously.

Questioning

Open questioning should be encouraged because of the uncertainty in replies received from asking closed questions. The response "yes" means that the statement is understood, not necessarily agreed with. As a consequence, it is usually prudent to interpret the answer "yes" as maybe and the response maybe as "no". "No" may also be used instead of "I don't know" and on occasions, "no" is spoken instead of "yes"! It is critical therefore to restate discussions with different words to confirm minimise misunderstandings. Many of the questions asked by a Chinese delegation are from those more senior.

Table 3. A Summary of Cultural Differences Between Westerners (i.e. from Australia, US, UK) and the Chinese in Inter-personal Interaction¹

Cultural Dimension	Recognising the Differences		Doing Business		When Managing and Being Managed	
	Australians	Chinese	Australians	Chinese	Australians	Chinese
<i>Universalist vs Particularist (Rules vs Relationships)</i>	Focus on rules	Focus on relationships	Use rational arguments	Meander	Strive for consistency	Build informal networks
<i>Group and Individual (Communitarianism vs Individualistic)</i>	Frequent use of “I”	Frequent use of “We”	Provide quick decisions	Expect patience to be shown for time taken to consult	Adjust individual needs to organisational needs	Integrate personality with authority within group
<i>Feelings and Relationships (Affective vs Neutral)</i>	Reveal feelings or thoughts	Do not reveal feelings or thoughts	Should ask for time out in meetings and negotiations to “patch each other up”	Should respond warmly to goodwill gestures by the Australians	Westerners will avoid detached, ambiguous, cool demeanour (since it is interpreted as negative evaluation, disdain, dislike and social distance)	Chinese will avoid warm, expressive or enthusiastic behaviours (since it is interpreted as lack of control over feelings and inconsistent with high status)
<i>Getting Involved (Specific vs Diffuse)</i>	Direct	Indirect	Study objectives	Study, history, background, future vision	Management is realisation of objectives	Management is continuously evolving
<i>According Status (Ascription vs Achievement)</i>	Respect for superiors in hierarchy is based on how effectively his or her job is performed and how adequate their knowledge	Respect for superiors in hierarchy is a measure of your commitment to the organisation and its mission	Team should have enough older, formal position-holders to impress the Chinese that you consider the negotiation important	Make sure team has enough data, technical advisers to convince Australians it will work	Respect for a manager is based on ability to lead and competence in role	Respect for a manager is based on positional leadership and detailed technical competence
<i>Orientation to Time (Past, Present, or Future)</i>	Talk of future and current prospects and potentials	Talk about history, origin of family, business and nation	Emphasise freedom, opportunity, and limitless scope for that company and its people in the future	Emphasise history, tradition as evidence of their potential	Employee’s most recent performance is the major issue	Employee’s history with company and future potential is context in which current performance is viewed
<i>Relating to Nature (Inner vs Outer Directed)</i>	Often dominating attitude (even bordering on aggressiveness at times)	Often flexible attitude, willing to compromise and keep the peace	Need to recognise that softness, persistence, politeness and patience will get rewards	Need to recognise that “playing hard-ball” is legitimate to test the opponent’s resilience	Feedback is expected as a normal part of improving one’s performance as well as the groups’	Managers will be happiest when they have won the employee’s allegiance

1. Developed from Trompenaars and Hampden-Turner (1996).

Those younger tend to ask questions informally, in the absence of their senior peers. Subordinates in the Western team can “shock” the Chinese delegation if they were to interrupt. Worthy of mention here is that the Chinese cannot usually tell the age of the Westerner and visa versa. In strategically important meetings or negotiations, use an unbiased interpreter and an agenda. The interpreter should consider the cultural differences in thinking processes and also translate the verbal technical language as well as documents and drawings. As a rule, never assume that all issues have been clarified once a meeting or interaction is finished.

Flexibility

A Chinese proverb says, “one must be as flexible as bamboo”. This could not be more relevant than during negotiations. Contracts prepared in China are “fluid”, and can lead to many interpretations, and of course resulting disputes. As with any contract, the details need to be understood, but it becomes imperatively so in the case with the Chinese because of this tendency for misinterpreting the agreements. It is important to appreciate that the relationship between the individuals involved has greater weighting than any contractual document.

Don't Underestimate Values and Cultural Differences

The following attributes of inter-cultural competence are useful for Australians to keep in the front of their minds during their interaction with the Chinese;

- The capacity to be non-judgmental;
- Tolerance for ambiguity;
- The capacity to communicate respect;
- The capacity to personalise one's knowledge and perceptions;
- The capacity to display empathy;
- The capacity for taking turns;
- The capacity to be flexible;

As part of *guanxi*, the Australian must also understand the importance of so-called “circular thinking” whereby the Chinese will tend to think through issues with regard to ramifications on family (imagine an inner circle), relatives and friends (imagine outer concentric circles). Because of this complexity, the Chinese will take longer to give an answer to a question or whether or not they agree with the proposed deal. A guide (though somewhat oversimplified) specifically for Australians interacting with the Chinese has been highlighted in Table 3.

There are differences in strategic thinking relating to perceptions of quality. The Western partner (in a partnership) will usually want higher quality, catering for the MNC customers, whereas the Chinese partners will often also want lower quality products or services for the local market. Also, the Chinese partners may not understand why money should be reinvested in plant upgrades and why it isn't distributed as dividends.

In China, it is insufficient to market a technology or a service *per se*. The Chinese often seek a continuing association with the technology provider, maintaining constancy with the individuals in the vendor organisation. Chinese organisations therefore have a problem with

Western organisations where there are rapid movement of employees and the shifts in policies and attitudes that often follow.

Newcomers to Chinese markets should be aware of the business practices that are prevalent. Donations to specific causes, personal friendships, returned favours, gifts and monetary or other contributions to income often facilitate decision-making. The involvement of a relative of a prominent person may assist in initiating the transfer process. A “power map”, setting out the relationships among decision-makers, defining subtle linkages, is helpful. Market research, initial visits, building upon an introduced source, the use of “hand outs”, the importance of punctuality, an understanding that relationships will take time to develop, and that entertainment is crucial to business dealings, all need to be considered.

The Chinese culture, and specifically the “danwei” (work unit), severely constrains productivity. The rapid growth of the last two decades can largely be attributed to the easing of those constraints. Yet many remain. The danwei hinders communication and co-ordination with other units (as previously discussed with different government departments). One of the keys for understanding Chinese Government and society is that many people just don't talk to one another, even though one would expect some co-ordination. This may be attributed in part to the lack of rule by law that would provide ground rules for co-ordination.

There is no concept of a “fair go” in China, and in the short term, effort and results do not always go hand-in-hand. This takes time for Australians to fully comprehend since the concept of fairness is so deeply rooted in the Australian culture.

Finally, foreigners (in general) need to be prepared to present to a wide range of groups at different levels, for drawn out meetings, and to expect delayed decisions. Again, this reflects the importance of taking a long-term view.

Training can Enhance Success

Where training of the local workforce is provided, it should be recognised that Chinese use their own understanding of the particular training requirement to replace the Western concept being taught. This typically leads to some distortion. The Chinese prefer to work in groups rather than as individuals, using local language and taking a “hands-on” approach. Training in intellectual property rights is also important and will be critical for long-term changes in attitudes to intellectual property rights in China. When providing training, one should also be mindful of the lack of responsibility often shown by the local workforce and work to compensate for this. Inter-cultural training should also be regarded as a critical task for the company. Individuals can and should learn about each other's culture and both Australians and Chinese should learn each other's language. As Trompenaars and Hampden-Turner (1996) indicate, “to express yourself in another language is a necessary, if not a sufficient condition, for understanding another culture”. Furthermore, the company needs to learn how to be effective in this very different environment. Training cannot achieve this. It has to be learned.

STATEMENT OF LIMITATIONS

This note presents the views of the author only and does not necessarily reflect those of his employer, Shell Australia.

REFERENCES AND FURTHER READING

- Altham, W.J. and T.F. Guerin (1999) Environmental Self-Regulation and Sustainable Economic Growth : The Seamless Web Framework. *Eco-Management and Audit – Journal of Corporate Environmental Management* 6 (2) 61-75.
- DFAT (2005) Working paper on Australia's Trade in Environmental Goods and Services (www.dfat.gov.au/eau/index.html). Economic Analytical Unit, DFAT, Federal Government of Australia. Accessed May 2005.
- Guerin, T. F. (1998). "Transferring environmental technologies to China: An Australian perspective." *Asia Pacific Economic Review* 6: 20-24.
- Guerin, T. F. (1999). "An Australian perspective on the constraints to the transfer and adoption of innovations in land management." *Environmental Conservation* (Cambridge University Press) 26: 289-304.
- Guerin, T.F. (2001). Transferring environmental technologies to China: recent developments and constraints. *Technological Forecasting and Social Change* 67: 55-75.
- Liu, W. (2005) Intellectual property protection related to technology in China. *Technological Forecasting & Social Change* 72: 339–348
- McCubbin, I. (2004) Non-Trade Barriers to Free Trade. Deacons, Melbourne. Accessed at Deacon's website (www.deacons.com.au).
- Trompenaars, F. and Hampden-Turner, C. (1996). *Riding the waves of culture*. New York, N.Y., McGraw-Hill.