



Australian Government
Australian Customs Service

Customs Strategic Outlook 2015



A future outlook to assist in:

- formulating policy guidance
- developing strategies and operational responses
- identifying capability development requirements



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Customs Strategic Outlook 2015

2007 volumes:	The global drivers will be:	Customs will need to respond to:	We will respond by:	2015 projections:
23 544 156 passengers 2 200 000 import sea containers 1 600 000 export sea containers 10 300 000 air cargo consignments 150 000 000 postal articles 12 824 arriving ships	A globalised economy	Changing relative influence of some economies	Working ahead of the border to identify and manage risks	34 152 858 passengers 3 700 000 import sea containers 2 700 000 export sea containers 17 500 000 air cargo consignments 220 000 000 postal articles 22 865 arriving ships
		Continued security and modernisation pressures	Maximising situations where intervention is not required	
	Security and insecurity	Proliferation and terrorism	Focussing on intelligence	
		Organised crime	Having non-intrusive inspection technologies and unobtrusive intervention processes	
		Community protection demands	Being flexible and scalable in our intervention approach	
	A changing world	Resource pressures	Establishing global partnerships to manage cross-border flows	
Environmental changes		Assisting industry to participate efficiently in international trade in travel		
Workforce demands	Having a supportive workforce engagement and development model			
2007				2015



Executive summary

Context

Customs is charged with the responsibility to provide effective border protection for the Australian community that also supports legitimate trade and travel and ensures collection of border related revenue and trade statistics.

Customs' role in national security derives from its broader responsibilities at the border and the extensive powers, expertise and technology it can bring to bear. In performing this role Customs works closely with a range of agencies, often exercising powers on their behalf, at other times working with them to complement each others' capabilities and authorities. Changes in the global security situation in the past six years have seen a continuing focus on Customs' border protection responsibilities.

Expanding expectations

Over time, the responsibilities and the expectations of government have evolved, requiring Customs to adapt its operational posture to suit. These expectations have reflected the overall increase in the importance of national security issues since 2001.

One such change has been the need to respond to an increasingly diverse range of criminal activity at the border. For example, Customs officers are required to prevent the importation of an increasingly wide range of drugs, explosives, chemical and biological agents, drug precursors (and increasingly proto-precursors), a range of drug manufacturing equipment and goods which breach intellectual property laws. Counter-proliferation has grown as a key role and this, along with likely changes associated with international cargo security measures, is likely refocus attention on more closely controlling exports. Customs must also continue to identify and stop people identified as risks, whether arriving legally or illegally.

As a consequence, the criticality of good operational relationships and boundaries of responsibility between elements of Customs, including Border Protection Command (BPC), has come into focus. Similarly, the operational relationships and boundaries of responsibility with other law enforcement agencies, for example the Australian Federal Police (AFP), have also become increasingly important.

Customs sees the key complexities of its operating environment as:

- the size and diversity of the Australian border, encompassing activities in extreme natural environments such as the coastlines and oceans in the north and south of Australia
- the typically short intervention times at the border to prevent illegal movement of people or harmful goods
- the responsiveness of those trying to breach the border to the interventions Customs develops
- the importance of working closely with the range of agencies with an interest in the border — often exercising powers on their behalf, at other times working with them to complement each others capabilities and powers
- the tension inherent in the border protection role. The community understands that border protection means there has to be some impact on trade and travel, but there are limits to what will be accepted — facilitating the movement of legitimate travellers and goods is critical
- broad agreement to the World Customs Organization's (WCO) Framework of Standards that emphasises greater cooperation between customs administrations and other instrumentalities and industry in managing the whole of the supply chain.

These complexities have and will continue to change over time in patterns that can be global or regional, and transient or enduring. Such changes include short-term trends in people smuggling operations, through to the

regional implications of climate change with its potential for a significant dislocation of regional population. There is little evidence to suggest that these challenges will ease out to 2015, and some are likely to expand or become more complex.

The environment is likely to remain fluid and dynamic, requiring Customs to be agile, flexible and able to adapt to new and emerging threats through the accelerated development and implementation of new capabilities and powers. Three key drivers of change stand-out in their potential impact:

- the expansion in the scale, diversity and complexity of the operating environment
- the potential for significant step-changes or global discontinuities to fundamentally alter the business of Customs very quickly
- the evolution of the constraints being placed upon Customs, such as significant changes in the labour market and the expectations likely to be held by a generation of future new recruits.

The global drivers

The global drivers and main trends to 2015 are summarised in the following table. These form the thematic basis for the remainder of the paper.

Combined these developments will challenge the current strategies and capabilities of the border management agency

Global drivers of change	Main trends to 2015	Broad implications for border management
<p>The globalised economy</p>	<p>China and India, and possibly Indonesia, will increase in relative influence over trade and economic growth in the region.</p> <p>In addition to retaining leading economic roles, the US and the EU will also continue as the influential global regulators of trade for security, community protection and environmental protection reasons.</p> <p>The volume of transactions at the border, both cargo and people, will increase and be marked by the continuing globalisation of markets for goods and services. The importance of the electronic border (intangible transactions) for community protection, security and revenue reasons will increase.</p>	<p>Several bilateral trade agreements will come into force.</p> <p>Containerised cargo will increase at an annual rate of 5-6 per cent to 2015, leading to a 70 per cent TEU increase in imports and exports by 2015. Air cargo will increase at an annual rate of 6 per cent (11 per cent for express carriers).</p> <p>Visitor arrivals by air are expected to grow on average by 4.9 per cent per year. Growth in departures is expected to grow strongly at 10 per cent per year from 2009. Visitor arrivals by sea are expected to grow on average by 3.8 per cent per year.</p> <p>Ship visits to Australian ports are expected to increase at an annual rate of 5 - 10 per cent per year, except in Western Australia, where the rate is more likely to be 40 per cent per year, driven by resources, particularly exports.</p> <p>Arrivals by sea and air will be across a greater spread of geographical locations in Australia, including remote ports.</p> <p>Modernisation of customs organisations will remain imperative, with Australia impacted by continuing pressure for more efficient, integrated processes, including through the application of technology, that manage and facilitate the end to end flow of people and goods rather than focussing on individual transactions at the border.</p> <p>Australia will continue as a major resource exporter, with an associated requirement for supporting infrastructure and processes.</p> <p>Mutual recognition arrangements and security initiatives with other customs administrations will lead to an increased focus on exports and export data for risk assessment.</p> <p>There will be a continued expectation in Australia that its border management agency will protect the community from some of the impacts of globalisation, including products manufactured to less than acceptable standards and under priced foreign competition.</p> <p>There will be an expanded number of controls on a greater range of goods for the purpose of consumer safety.</p> <p>Co-regulation with industry will become more likely to be considered as a model as the border management task increases in size and complexity.</p> <p>The community will continue to become increasingly concerned about the electronic border, leading in turn to an expectation that the Government will manage that border too.</p>

Global drivers of change	Main trends to 2015	Broad implications for border management
Security and insecurity	<p>Counter proliferation will remain a key risk because of the activities of both state and non state actors.</p> <p>The risk of international terrorist attacks is unlikely to decrease.</p> <p>Transnational organised crime will grow in volume and reach, exploiting opportunities in the region and taking advantage of legitimate business structures and growing consumer markets.</p> <p>Nearby failed and failing states will continue to present border security risks and challenge capacity building activities, and generate opportunities for international organised crime.</p>	<p>There will be continued emphasis on export controls on Defence and dual use goods, with increasingly high expectations placed on the Australian border management agency.</p> <p>The UN Security Council will continue to impose sanctions on recalcitrant states, resulting in an increased number of regulations that impact border management.</p> <p>The border management agency will be expected to continue to control the movement of people, goods and currency (and like) as circumvention strategies continue to evolve.</p> <p>Organised crime will evolve to create new challenges to detection at the border as its activities resemble more and more the legitimate business going on around it.</p> <p>Diversification of criminal activities will increase the complexity of the regulatory environment, particularly as it relates to drugs and drug precursors.</p> <p>The border management agency will be a target for criminal infiltration or attempts at corruption.</p> <p>Low level conflicts in failed and failing states could displace large numbers of people.</p> <p>It will be increasingly important that business resumption plans for international trade and travel are in place to manage the aftermath of an unexpected event, such as a pandemic outbreak or terrorist attack.</p>

Global drivers of change	Main trends to 2015	Broad implications for border management
A changing world	<p>Availability of oil and oil based fuels will become a critical issue.</p> <p>Resource pressures and environmental changes will present different challenges at the border.</p> <p>Technology will advance rapidly, continuing the current trends of increasing sophistication, power, portability and affordability.</p> <p>A pandemic, human or agricultural, in the region is considered likely in the timeframe under consideration, and the likelihood of this will be exacerbated by regional failures of health care systems or stresses on plant and animal husbandry practices.</p> <p>There will be a continued demographic trend in Australia towards an increasingly elderly population, a trend expected to accelerate after 2010.</p>	<p>In addition to increasing the cost of border management operations, the high cost of oil might also impact air passenger numbers projections. Similarly, there may be a proportional increase in the carriage of cargo by sea, away from air.</p> <p>Australia may become an important exporter of energy.</p> <p>Increasing competition for natural resources will impact efforts to police Australia's EEZ, with markedly more organised attempts to exploit it illegally. The Australian Antarctic Territory might be similarly affected, potentially creating an entirely new border.</p> <p>Immigration and quarantine risks at the border will alter as environmental changes occur globally.</p> <p>Environmental concerns will make the regulatory environment more complex, in particular the prospect of increased international scrutiny of the disposal of hazardous waste and likely prevalence of international carbon trading.</p> <p>Increased border management capabilities will be offered by improved detection, communication and information management technologies, but these will also create new challenges as technology previously only available to governments becomes affordable by non state actors, offering them like capabilities to evade detection.</p> <p>The Australian border management agency will be expected to maintain a high level of pandemic readiness, including a preparedness to very tightly control the border under certain, extreme circumstances.</p> <p>Workforce competition and cost will emerge as a key issue because of an aging population, but also the need to compete for the people and skills required to manage the border.</p> <p>With an increasingly large component of the longer serving workforce retiring, combined with a shift in work patterns away from long term service, knowledge management capabilities will become critical.</p> <p>A slowing of economic growth brought on by demographic changes may refocus scrutiny of the efficiency of border management processes because of their role in supporting economic growth.</p>



Response

Combined these developments will challenge the current strategies and capabilities of the border management agency. They will require growing partnerships with industry, law enforcement and security agencies and the border management agencies of other countries to better secure the supply chain and international travel environment. They will also place a premium on the use of risk based interventions that are driven by sophisticated intelligence and targeting systems and practices. Accordingly, Australia's border management agency will need to achieve the following.

1. Work ahead of the border to identify and manage risks

Australia's border management agency will need to position itself to know about risks before they arrive at the border as the primary means of border protection — the physical border will ultimately become the secondary layer of intervention. It will do this through:

- mutual recognition of border processes with other administrations, including pre-export examination
- using pre-arrival, pre-load and pre-departure data
- using industry's data and developing efficient means for it to be accessed or collected
- identifying anomalous behaviours or transactions early
- developing systems and processes that provide domain awareness
- capacity building in the region
- using overseas liaison (posts).

2. Maximise the number of cross border movements where intervention is not required

Maximising the extent of secure trade and travel so as to more tightly focus interventions on high risk cargo and people will be a key responsibility of Australia's border management agency. It will do this through:

- promoting and facilitating authorised economic operators

- recognising industry's own measures to secure the supply chain and international travel environment
- moving to a quality assurance rather than inspection regime for trusted parties
- removing trusted parties' transactions from mass screening arrangements other than for assurance purposes.

3. Focussing on intelligence

Australia's border management agency will use intelligence effectively to identify risks against which intervention is needed. It will:

- develop partnerships across government
- develop international partnerships with intelligence and law enforcement agencies
- conduct active intelligence operations with our partner agencies in Australia and overseas
- develop models to apply intelligence that takes advantage of the industry and other data produced by the end to end flow of cross border movements of people and goods, for example, using the whole of traveller history model
- change risk assessment processes to take in the end to end flow of cross border movements of people and goods rather than individual transactions at the border
- develop focussed intelligence to mitigate criminal networks.

4. Have non intrusive technologies and unobtrusive intervention processes

Non intrusive inspection technologies and unobtrusive intervention processes lie at the foundation of the ability of Australia's border management agency to intercept goods and people identified as risks while minimising the impact on legitimate trade and travel. Elements of this include:

- integrating information collection and controls into industry's business models wherever possible
- "in flow" inspection technologies and processes (for

- example, drive-through container x-ray facilities)
- leveraging industry's adoption of technologies for assurance (for example, "smart" containers)
- leveraging industry's own measures to provide security in the international travel environment
- leveraging industry's own inspection regimes (developed to meet security requirements)
- continuing to develop and deploy new non intrusive inspection technologies.

5. Be flexible and scalable in our intervention approach

Australia's border management agency will need to be able to rapidly scale up or reorient its border protection activities, including the:

- ability to rapidly increase and sustain increased intervention rates:
 - in certain circumstances (for example, a pandemic)
 - in response to certain risks (for example, unsafe consumer products)
 - in certain streams
- ability to deploy and redeploy people and technology as needed
- ability to redirect processes and intervention rates in response to emerging or increased risks.

6. Global partnerships to manage cross border flows

Australia's border management agency understands that the border is best protected if approached in its international context, which can be done by:

- developing custom to customs and other government to government partnerships around border management
- developing shared processes with global partners around reporting and inspection arrangements
- influencing global partners to assist industry to participate efficiently in international trade
- capacity building in the region
- using overseas liaison (posts).

7. Assisting industry to participate efficiently in international trade and travel

Australia's border management agency has a responsibility to support legitimate trade and travel, which it will do through:

- being engaged early with industry as it develops new business model so as to better design necessary border controls
- promoting measures that allow Australia to be seen internationally as a secure trading partner
- taking a leading role in promoting business resumption processes for international trade and travel for use in the aftermath of an unexpected event (for example, a pandemic outbreak or terrorist attack)
- promoting international adoption of a "report to one, report to all" (single window to government) facility
- assisting Australian industry to meet the requirements of overseas authorised economic operator and like arrangements
- promoting internationally models of efficient data collection from parties involved in crossing border, for example, models that use existing industry data sets about people or goods rather than requiring new data sets to be created.

8. Having a supportive workforce engagement and development model

Australia's border management agency will need a supportive workforce engagement and development model that delivers the capabilities necessary to provide effective border protection in this environment. Elements of this will include:

- employment and sourcing models that match business requirements
- retaining flexibility while meeting the need for increasingly specialised skills
- the ability to attract, recruit and retain the right employees.

Strategic discontinuities

The potential exists for major domestic, regional or global discontinuities to emerge that could rapidly and significantly change the environment in which Australia's border management agency operates. Such discontinuities are incidents or trends with ramifications beyond extending or varying existing historical patterns and will create significant new challenges.

Some of the key discontinuities may include:

- sudden, large scale slowing of economic development worldwide, but especially in Asia
- a major regional conflict, political destabilisation or break down in law and order in a regional state with consequences for civil maritime and border security. This could result in a self reinforcing increase in the economic pressures on regional nations, and potentially increasing the volume and determination of people smuggling operations and population displacement
- significant changes to regional security relationships. This could include Australia's participation in new multi or bilateral security or supply chain arrangements which alter Australia's security responsibilities
- a major terrorist incident with consequences for civil maritime and border security
- a major new natural or synthetic bio security threat, requiring a major increase in border security operations
- a significant new border security technology that causes major displacement effects on cross-border illegal activity, for example, from passengers to vessels.

Outline

The *Customs Strategic Outlook 2015* comprises four sections, not including the Executive Summary. The content of these main sections is described below. The Outlook does not cover the activities of BPC, which has developed its own Future Operating Concept looking out to 2015.

Modernisation of customs organisations will remain imperative, with Australia impacted by continuing pressure for more efficient, integrated processes

The main body of the Outlook adopts the convention of referring to the "border management agency", rather than Customs, because of the document's focus more on current and future functional requirements at the border than upon whom will be performing these.

The structure of each section is closely aligned where possible to the main trends and broad implications tabulated in the Executive Summary.

Section 2. Strategic environmental assessment to 2015

This section considers the global context in which border management activities occur and teases out the key developments that are likely to be of greatest impact out to 2015. It is from the analysis underlying this section that the global drivers, main trends, broad implications and strategic discontinuities have been identified.

This section has been derived from a wide range of open source, foreign and Australian Government material.

Section 3. Implications for border management to 2015

This section looks in more detail at the impact on border management of the key developments out to 2015.

Where possible, it quantifies the likely impacts.

Section 4. Responding to the border management challenge to 2015

This section describes at a high level some of the ways in which the border management agency can respond to the impacts outlined in the previous section.

Section 5. Border management in 2015

This section, based on the preceding, summarises the key capabilities that will need to be developed to meet the likely changes out to 2015.

During the next 30 years, the volume of transactions, conducted irrespective of the physical distance between those engaged, will continue to expand, shaping and improving everyday life for millions of people. A key feature of globalisation will be the continuing internationalisation of markets for goods, services and labour, which will integrate geographically dispersed sets of customers and suppliers. This will be an engine for accelerating economic growth, but will also be a source of risk, as local markets become increasingly exposed to destabilising fluctuations in the wider global economy



Strategic environmental assessment to 2015

The globalised economy

During the next 30 years, the volume of transactions, conducted irrespective of the physical distance between those engaged, will continue to expand, shaping and improving everyday life for millions of people. A key feature of globalisation will be the continuing internationalisation of markets for goods, services and labour, which will integrate geographically dispersed sets of customers and suppliers. This will be an engine for accelerating economic growth, but will also be a source of risk, as local markets become increasingly exposed to destabilising fluctuations in the wider global economy

China and India, and possibly Indonesia, will increase in relative influence over trade and economic growth in the region.

Most forecasts indicate that by 2020 China's gross national product (GNP) will exceed that of individual Western economic powers except for the United States. India's GNP will have overtaken or be on the threshold of overtaking European economies.

China's continuing emergence as a major economic power will significantly increase bilateral trade volumes with an emphasis on Australian exports. Most of this increased export trade into the future will consist of goods exported as dry or wet bulk. China is currently Australia's largest trading partner, with a 34 per cent increase in the export of goods and a 13 per cent increase in the export of services over 2005-2006.

A key development will be China's increasing ability to compete on the grounds of capability rather than cheap labour, especially in the area of IT. In the medium term this will occur through a bilateral economy with India based on joint ventures between Chinese and Indian IT companies. By 2008, China is expected to generate intellectual property at a rate comparable to developed countries. As a result, by 2015 China is likely to be a key

voice in determining how intellectual property is regulated as it seeks to protect its own burgeoning intellectual property. International regulation in this area is likely to become increasingly contentious and complicated.

India is also emerging as a significant economic player and is expected to achieve sustained economic growth of 8-10 per cent per annum. India is Australia's ninth largest trading partner and is now a major Australian market, largely in resources, with exports increasing 34 per cent per annum over the last five years. The Australian Government has agreed to undertake a feasibility study for an Australia-India Free Trade Agreement (FTA). For the foreseeable future, bulk commodities will continue to dominate Australia's exports to India. An emerging

China's continuing emergence as a major economic power will significantly increase bilateral trade volumes

threat to India's economic success is a skills shortage, particularly in its computer services companies, which will account for about a quarter of overall growth over the period under consideration.

One of the world's largest developing economies will be Indonesia, with experts saying an annual high economic growth rate of 6-7 per cent may occur. This would propel the population from 225 to 250 million in the next 15 years. Such high growth would presume an improved

investment environment, including intellectual property rights protection and openness to foreign investment. If growth was slower than predicted, the Indonesian economy may be unable to absorb the unemployed or under-employed labour force, thus heightening the risk of greater political instability. Indonesia is currently Australia's 13th largest trading partner. Non-services related trade is composed mainly of petroleum products and dry bulk products. In July 2007 a feasibility study for an Australia-Indonesia FTA was announced by both countries. Future Indonesian economic development rates are subject to many variables, including institutional development, business transparency and multi ethnic and cultural stability; overall the trade commodity mix would need to change significantly in combination with robust Indonesian economic growth for the current trade to be significantly impacted.

The Australian community will expect to be protected from manufactured products that may not meet accepted health or safety or intellectual property standards, while still facilitating an increased volume of trade to support retail demand in Australia. Pressure on the Government will come from both the community and large Australian or global retailers based in Australia with a heavy reliance on imports.

The relative influence of the Asian economies on trade in the region is heavily dependant on their continued growth. Variables that will affect that growth include: level of external investment in the economies; access to energy (both in terms of security and the drive to control CO₂ emissions); demographic changes (for example, the effect of aging populations in China, Japan and South Korea and young populations in Viet Nam and Indonesia); and non economic shocks (for example, pandemics, terrorist incidents).

Australia is party to, or working on, 12 bilateral trade agreements (see Table 1). Each has, or will have, an effect on both the proportional origin and volume of cargo and complexity of the border management task associated with this.

Bilateral agreements aside, the fate of the multilateral Doha Development Agenda, under the aegis of the World Trade Organisation (WTO), remains uncertain. The WTO is sanguine, noting that slow progress is outweighed by the benefits brought from consensus decisions. Recent developments show smaller but still significant manufacturing economies, such as Brazil and Argentina, shifting the Doha focus from agricultural subsidies to industrial tariffs, but it is unclear yet whether this an emerging trend. India's apparent ongoing disdain for the process may be more damaging.

TABLE 1 Bilateral trade agreements

Agreement	Status
Australia – New Zealand (ANZCERTA)	Since 1983
Australia –Singapore	Since 2003
Australia – Thailand	Since 2005
Australia – United States of America	Since 2005
Australia/New Zealand – ASEAN	Under negotiation
Australian – Malaysia	Under negotiation
Australia – China	Under negotiation
Australia – Gulf Cooperation Council	Under negotiation
Australia – Japan	Under negotiation
Australia – Chile	Preparatory talks
Australia – India	Feasibility study
Australia – Indonesia	Feasibility study

Overall, it is not possible at this time to predict the affects of Doha on border management; for the foreseeable future the focus should be on the complexities brought by bilateral free trade agreements.

In addition to retaining leading economic roles, the US and the EU will also continue as the influential global regulators of trade for security, community protection and environmental protection reasons.

For the foreseeable future, the US will continue to dominate, and drive, global cargo security measures. This is not to say the US will necessarily get its own way all of the time: the recent signing into US law of a requirement that all US bound sea cargo be subject to inspection pre departure with a deadline of 2012 (unless extended) has met with strong resistance from various industry sectors and other governments, including the EU. It is unclear whether this requirement will have a smooth introduction, if it goes ahead at all. In other respects, however, the US will continue to provide the impetus for the introduction of technologies such as “smart” containers, broad application of Radio Frequency Identification Devices (RFID) chips and similar in the logistics chain. It will also continue to drive process changes such as pre export security screening and authorised economic operator type arrangements, the later under the auspices of the World Customs Organisation. Many countries will continue to base their own supply chain security arrangements on the US model in order to protect their access to US markets — New Zealand has already done so, and Singapore and EU member states are following suit. This places Australia under pressure to do the same to support its exporters.

Some analysts are arguing that there is an observable trend away from the “Washington consensus” institutions (for example, the World Bank, International Monetary Fund, World Trade Organisation) and towards regional forums, such as APEC and ASEAN, as the drivers for modernisation and reform. Even so, this is unlikely to

affect US leadership in the realm of border and cargo security.

The Australian community will expect to be protected from manufactured products that may not meet accepted health or safety or intellectual property standards

In other respects, especially around community safety and environmental protection, the EU is increasingly “exporting” its standards. Globalised manufacturers, for example, are shifting towards manufacturing all goods to meet the toughest standards among their various export markets, regardless of where the goods are actually destined. For a wide variety of manufactured products, the EU has the toughest standards, and hence these are being increasingly adopted. The same globalised manufacturers in turn lobby their own governments to adopt European standards in order to avoid being disadvantaged against competitors who only manufacture for the domestic market. The result is the effective exportation of European standards globally, a trend that is penetrating even the US and China. A side effect of globalisation, the trend is expected to continue over the period under consideration.

The volume of transactions at the border, both cargo and people, will increase and be marked by the continuing globalisation of markets for goods and services. The importance of the electronic border (intangible transactions) for community protection, security and revenue reasons will increase.

World air cargo traffic is forecast to expand at an average annual rate of 6.1 per cent for the next two decades.

International express traffic growth has steadied at an average annual rate of 7 per cent; however, international express products now compose more than 11 per cent of total international air cargo traffic.

Australia has, over the past five years, been ahead of the projected world growth in containerised cargo, at an 8 per cent annual rate, but this is expected to decrease slightly out to 2015, bringing it more into line with the projected international annual average of 5-6 per cent. This will lead to a predicted (approximate average) 70 per cent increase in twenty foot equivalent units (TEU) imports and exports to and from Australia by 2015.

Ship visits to Australian ports are expected to increase between 5 and 10 per cent per annum over the period. The effect of this will be asymmetrical, with a greater impact in Western Australia driven by the arrival of export bulk vessels to an average rate of annual increase of up to 40 per cent.

World air mail traffic will grow at an average annual rate of 2.5 per cent over the next two decades. Based on past performance, Australian growth in international mail will be at least double the world average and perhaps as high as 10 per cent. More significantly, Australia Post has the potential to make significant inroads into the express carrier market, with a 22.5 per cent increase in volume of its express product in its first full year of operation. The Government will continue to be pressured to apply identical treatment to express products, regardless of

whether moved by express carrier or postal authority.

Although the numbers of manufacturers, products and companies is predicted to increase globally, it is unclear how this will affect the number of entities with whom Customs does business — data from over the last decade suggests that most import transactions (fluctuating around 70 per cent) are conducted by a relatively small number of importers (about 3,000).

Visitor arrivals by air are expected to grow on average by 4.9 per cent per annum. Growth in departures is expected to grow strongly at 10 per cent per annum from 2009 with the significant expansion in aviation capacity due at that time. The number of international air passengers in Australia is estimated to increase from 22.9 million in 2005-06 to 29.9 million in 2011-12. Visitor arrivals by sea are expected to grow on average by 3.8 per cent per year. The number of cruise ships arriving at Australian ports will increase by 2.8 per cent per annum.

Australia has, over the past five years, been ahead of the projected world growth in containerised cargo

Industry will continue to drive a trend for increasingly dispersed logistics centres and entry points (for example, air entry ports located away from major airports, such as at Avalon, and inland sea container terminals, such as at Somerton, both in Victoria). Elsewhere, the resources

industry is driving additional capacity in existing bulk export ports, including building new berths, and in the period under review may decide to construct entirely new ports. This is likely to occur predominantly in Western Australia and Queensland, but may affect other States as well.

Security and insecurity

Counter proliferation will remain a key risk because of the activities of both state and non state actors.

Proliferation activities are no longer the exclusive preserve of states. It is likely that information and materials to build Weapons of Mass Destruction (WMD) are available to groups/individuals willing to pay (and who have made the appropriate connections). Beyond WMD, state and non-state actors continue in their efforts to obtain Defence and dual use goods.

Over recent years proliferators have developed new ways to circumvent export control regimes. Increased transparency, especially in relation to what items the regimes cover, has prompted proliferators to develop more sophisticated procurement networks, working through front companies and involving more circuitous shipping routes. They rarely attempt to procure goods illegally, preferring to exploit weaknesses in a country's export control system. This presents challenges to Customs risk assessment procedures and increases the importance of information intelligence sharing between Customs and other law enforcement, national security and regulatory agencies to understand and address the threat.

The risk of international terrorist attacks is unlikely to decrease.

The key factors that spawned international terrorism show no signs of abating over the period under consideration. Global communication has facilitated

radicalisation, which will create impact outside the Middle East, including Southeast Asia, and Western Europe, where radicalism has traditionally not been as strong.

Information technology allowing for instant connectivity, communication and learning will enable any terrorist threat to become increasingly decentralized, evolving into an eclectic array of groups, cells, and individuals that do not need a stationary headquarters to plan and carry out operations. Training materials, targeting guidance, weapons know-how, and fund raising will increasingly become virtual (online).

Strong terrorist interest in acquiring chemical, biological, radiological and nuclear weapons increases the risk of a major terrorist attack involving WMD.

Diversification of criminal activities will increase the complexity of the regulatory environment, particularly as it relates to drugs and drug precursors

Of concern is that terrorists might acquire biological agents or, less likely, a nuclear device, either of which could cause mass casualties. Bioterrorism appears particularly suited to smaller, better-informed groups. It

is expected that terrorists will attempt cyber attacks to disrupt critical information networks and, even more likely, to cause physical damage to information systems

Regional terrorist groups, such as Jemaah Islamiyah, will likely continue to pose a threat to Australia's international interests.

Terrorist groups often engage in low-level criminality to fund their activities, facilitate the movement of members and procure weapons. This criminality often includes credit card fraud, robbery, passport and identity fraud and drug trafficking. Some links have been established between international terrorist groups and transnational criminal activities. For example, Hizballah supporters have raised funds for the group through tobacco smuggling. Similarly, Basque separatist group Euskadi Ta Askatasuna (ETA) raises large sums of money through the sale of counterfeit goods. The potential financial gain from activities such as these means they will continue to be attractive for terrorist groups looking to expand their influence and fund their activities.

Transnational organised crime will grow in volume and reach, exploiting opportunities in the region and taking advantage of legitimate business structures and growing consumer markets.

Nearby failed and failing states will continue to present border security risks and challenge capacity building activities, and generate opportunities for international organised crime.

Criminal networks have benefited from globalisation, which has expanded illegal markets and boosted the size, resources and reach of criminal networks.

Australia is, and will continue to be, threatened by transnational organised crime groups. These criminal networks develop methodologies and partnerships designed to facilitate the movement of illicit goods

across national borders, including illicit drugs, precursor chemicals, firearms, tobacco, counterfeit goods, wildlife and proceeds of crime. Organised crime groups will persist in their attempts to compromise public officials, including those in law enforcement agencies.

Criminal networks have benefited from globalisation, which has expanded illegal markets and boosted their size, resources and reach

Just as legitimate trade is becoming more flexible, criminal networks are becoming more flexible in their illegitimate businesses. Intimately connected syndicates are being replaced by less structured sets of associations. Various entities can be brought together to conduct particular activities within a certain timeframe and then disbanded to form other groups for different criminal ventures. These networks are highly flexible in their use of various import streams and commodities.

The most significant threats to the border from illicit imports and exports of drugs, precursor chemicals, firearms, tobacco, counterfeit goods, wildlife and currency are due to the activities of criminal networks.

The global shift towards use and production of Amphetamine Type Substances (ATS) over other types of drugs is continuing. The Australian situation is no exception, with rising numbers of ATS and precursor detections at the border and increasing detections of clandestine laboratories.

Australia will continue to be threatened by an increasing variety of serious and organised crime groups who develop appropriate planning processes and foster regional and global partnerships specifically to facilitate the movement of goods across national borders

Organised crime groups are increasingly seeking to establish themselves in the Pacific region. Despite capacity-building efforts by Australia and other countries, meagre enforcement resources, poor governance and widespread corruption make Pacific Island nations vulnerable to exploitation.

Nevertheless, the main organised crime threats to the Pacific region come from the illegal exploitation of natural resources, such as timber and fish stocks.

A changing world

Availability of oil and oil-based fuels will become a critical issue.

The current high oil and gas prices are expected to remain for the foreseeable future, with increasing market tightness predicted after 2010 — assuming world economic growth of around 4.5 per cent annually over the next decade, international demand for oil will rise from 81.6 million barrels a day to 95.8 in 2012. At the same time, supply is expected to decrease by 2.8 million barrels a day by 2009. This, combined with similar supply problems in gas production and biofuels remaining a marginal source over the timeframe under consideration, will reduce the alternatives available to governments.

Slower than expected economic growth may defer the problem, but not for very long, and higher oil prices may well change the demand pathway if users of oil do not.

High oil prices have impacted on air freight growth, resulting in an approximate halving of annual average growth rates since 2004, although growth has occurred nonetheless.

This decline in cargo carriage has been offset for airlines by passenger traffic volumes and “yield growth” — so far, higher oil prices have been almost exactly offset by reducing labour and similar costs.

Quantifying the impact of increase demand for oil in the face of diminishing supply is difficult and is necessarily heavily reliant on the base assumptions used. For example, one study that assumed a permanent doubling of oil prices over current levels concludes that air transport activity in Australia will drop by 27 per cent by 2016-17.

Conversely, the same study predicted a 12 per cent increase in sea transport over the same period driven by an Australian dollar devalued by high oil prices in turn strengthening Australian (largely bulk) commodity exports. Beyond this, world maritime dry cargo traffic (that is, excluding bulk) is for the first time showing an average annual growth rate comparable to world air cargo traffic, the suggestion being that sea transport becomes more attractive as oil prices increase.

Resource pressures and environmental changes will present different challenges at the border.

The impact of environmental change is unlikely to be directly felt by Australia's border management agency in the period under review.

There is, however, compelling evidence to indicate that climate change is occurring and that the atmosphere will continue to warm at an unprecedented rate throughout

the 21st century. A scientific consensus holds that a large part of this warming is attributable to human activities, primarily through the concentration of CO₂ and other greenhouse gases.

Climate science is complex, with linear cause and effect relationships not yet readily apparent; the consequences of climate change will vary in their impact in time, incidence and geographical extent in ways at the moment unpredictable. This is especially the case in the timeframe under consideration.

Over time, global climate change will reduce land for habitation and will result in changing patterns of agriculture and fertility, while tropical diseases, like malaria, are also likely to move into temperate zones. There will be an increased risk of extreme weather events, threatening densely populated littoral, urban and farming regions with eccentric growing seasons, flooding and storm damage. Climate change will remain highly politicised: although the relationship between causes and effects is likely to be increasingly understood as more evidence and computing power becomes available, responses will be contested and affected by self-interest. Over the longer term, the impact of environmental changes could become severe. For example, by 2037, nearly two-thirds of the world's population will live in areas of water stress, while environmental degradation, the intensification of agriculture, and pace of urbanization may reduce the fertility of, and access to, arable land.

Food and water insecurity will drive mass migration from some worst affected areas and the effects may be felt in more affluent regions through distribution problems, specialised agriculture and aggressive food pricing. Increasing demand and climate change are likely to place pressure on the supply of key staples, for example, a drastic depletion of fish stocks or a significantly reduced capacity to grow cereal crops. Genetic and scientific modification of food crops is likely to be necessary, both for human and animal consumption and for bio fuel production.

Water shortages will be the key constraint to growth in many countries. Regardless of the extent of efficient water use initiatives, including the attribution of an economic value, the base cost of water and services will increase.

Technology will advance rapidly, continuing the current trends of increasing sophistication, power, portability and affordability.

The world is undergoing a global technology revolution that is integrating developments in biotechnology, nanotechnology, materials technology, and information technology. Advances in bio/nano/materials/information technologies are combining to enable devices and systems with potential global effects on individual and public health and safety; economic, social and political systems; and business and commerce. The emerging technology revolution, together with the ongoing process of globalisation enabled by the growth in information technology, on the one hand opens up possibilities for increased monitoring, surveillance and tracking of goods and people, and, on the other, introduces potential difficulties with privacy and ethical issues.

The following highlights some of the more significant technology trends and applications likely by 2020 in information and communications, surveillance systems, and sensors. This is not an exhaustive list, but does convey a sense of the major trends in these areas:

- a. Rapid bioassays using bio/nano/technologies (allowing on the spot identification of chemical traces)
- b. Embedded sensors and computational devices in commercial goods
- c. Radio frequency identification (RFID) tracking of commercial products and individuals
- d. Widespread bundled information and communications technologies, including wireless internet connectivity
- e. Pervasive undetectable cameras and sophisticated sensor networks

- f. Large, searchable databases containing detailed personal data
- g. Smart fabrics and textiles
- h. Nanostructured materials with enhanced properties;
- i. Small and efficient portable power systems
- j. Quantum based cryptographic systems for secure information transfer.

Most of the technologies listed above depend on developments in more than one field and it is the convergence of these that is contributing to the accelerated pace of development. Many are capabilities in which governments may need to maintain a technological edge as these technologies become pervasive in society and are available to criminal or terrorist organisations.

The rate at which new technologies are developed and adopted is not assured. This variability is illustrated in Figure 1, which uses smart materials and nanomaterials as an example to indicate divergent technology futures under high growth and low growth scenarios.

Table 2 indicates a number of feasible technologies that could impact border operations within the next 15 years if both the technological and implementation barriers can

be overcome — some of the main barriers to are cost, social and ethical acceptance and the ease of use.

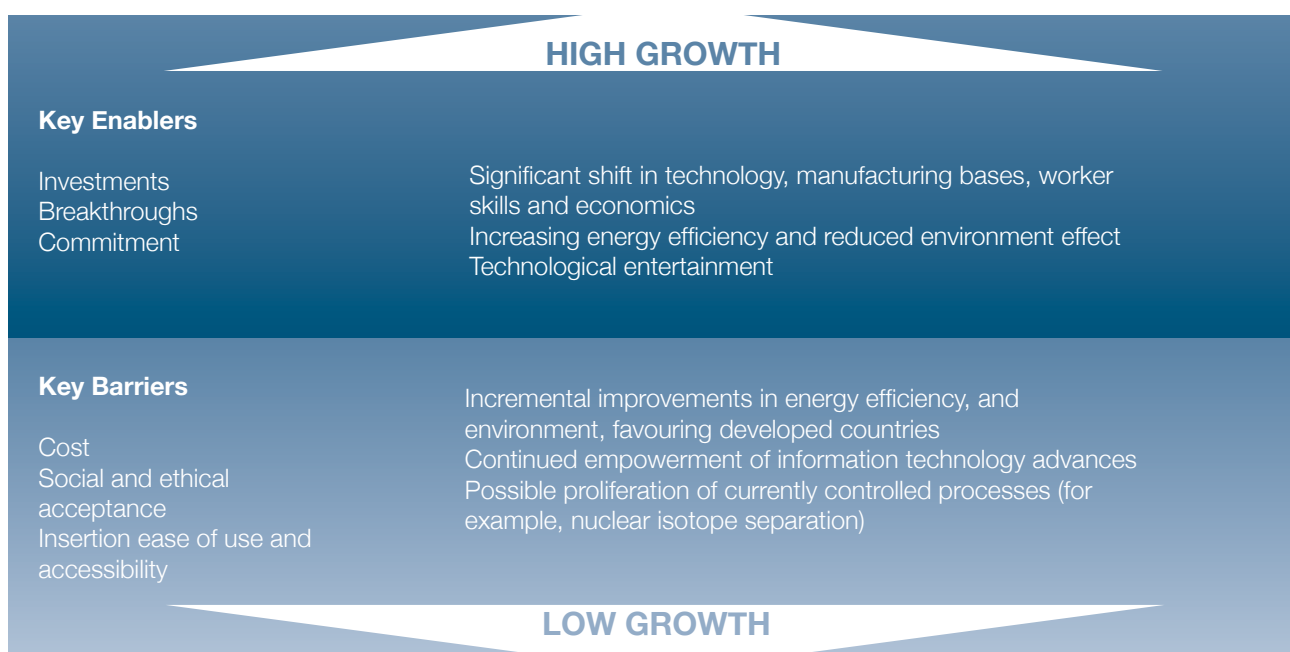
A pandemic, human or agricultural, in the region is considered likely in the timeframe under consideration, and the likelihood of this will be exacerbated by regional failures of health care systems or stresses on plant and animal husbandry practices.

Several communicable diseases will continue to have a significant impact on population and development and, without effective control measures, may spread from developing regions to more settled and affluent areas.

HIV/AIDS will remain prevalent in Sub-Saharan Africa. Beyond this, emerging economies such as India, China and Russia are likely to be challenged significantly by HIV/AIDS, with an estimated 10-20 million sufferers in China by 2010. Its increasing impact in the Pacific may come to present a health related border management issue for Australia.

The social, economic and human costs of contagious and communicable diseases will remain high and are likely to slow economic growth drastically in the worst affected regions for the period under review and beyond.

Figure 1 Possible future developments and effects of smart materials and nanomaterials



A bird flu pandemic is considered likely and could cost 150 million lives. More than half of US doctors surveyed recently said a pandemic will arrive within the next four years. Public health officials globally are particularly concerned about H5N1 bird flu, which is spreading globally and may develop into a deadly human strain. Death toll projections range from 5 million to 150 million, depending on how well national and local governments prepare. Three previous influenza pandemics, in 1918, 1957 and 1968, killed 40 million, 2 million and 1 million people respectively.

Some diseases, such as tuberculosis, malaria and

cholera, will re emerge in strength in populations unaffected for decades, even centuries, as economic and environmental changes occur and the pattern of human activity becomes more diverse and complex. A population under pressure from, for example, a pandemic will readily develop a high incidence of tuberculosis, especially if the health system is simultaneously overwhelmed. Second-wave diseases like this have the potential to greatly extend the period over which a pandemic of any sort impacts a population.

The ease with which such diseases can be rapidly spread internationally by infected air travellers, and the absolute

Table 2 Feasibility of selected technologies by 2020

Implementation Feasibility				
Technical feasibility	Niche market only	May satisfy a need for a medium or large market, but raises significant public policy issues	Satisfies a strong need for a medium market and raises no significant public policy issues	Satisfies a strong need for a large market and raises no significant public policy issues
Highly feasible	CBRN sensors on emergency response teams	Pervasive sensors Genetic screening GM crops	Ubiquitous information access Ubiquitous RFID tagging Targeted drug delivery	Hybrid vehicles Rapid bioassays Rural wireless communications
Feasible	Unconventional transport GM animals for R&D	Implants for tracking and ID Xenotransplantation	Cheap solar energy Smart systems Filters and catalysts Monitoring and control for disease management	Quantum cryptography Improved diagnostic and surgical methods
Uncertain	Commercial UAVs High-tech terrorism Military nanotechnologies Military robotics	Biometrics as sole ID CBRN sensor network in cities Secure video monitoring Hospital robotics Therapies based on Stem cell R&D	Smart textiles Wearable computers Enhanced medical recovery Immunotherapy Improved treatments from data analysis	Electronic transactions Hands-free computer interface Secure data transfer Resistant textiles In-silico drug R&D
Unlikely	Memory-enhancing drugs Robotic scientist Super soldiers	Chip implants for brain	Drugs tailored to genetics	Cheap autonomous housing Print-to-order-books
Highly unlikely	Proxy-bot Quantum computers	Genetic selection of offspring	Artificial muscles and tissue	Hydrogen vehicles

importance of early detection in mitigating the spread and impact of a potential pandemic will place border management agencies under increasing pressure to have well-developed capabilities to detect and contain possible vectors at the border

Analysts suggest that major pandemic may be the instrument that causes a reverse in the process of globalization as national responses to contain infection will involve significant restrictions on personal mobility and interaction over a lengthy period. Some states may even be destabilized by the effort and resources required to address the situation.

There will be a continued demographic trend in Australia towards an increasingly elderly population, a trend expected to accelerate after 2010.

Given increasing longevity, declining birth rates and the disproportionate size of the baby boom generation now approaching traditional retirement age in the West, the age profile of employees is changing dramatically. By 2047, a quarter of the Australian population is expected to be over 65 years of age.

Too few skilled young people entering the workforce means that businesses will soon face a chronic shortage of workers with the skills the economy needs. Organisations must look at the workforce quite differently and adapt management practices accordingly to ensure their future talent supply.

It has been predicted that Generation Y, the population segment born between 1978 and 1995, may have many of its members leave their country of origin to pursue large portions of their lives overseas. Employers will see the age range of their workers span four generations, with baby boomers working beyond age 65 — as a result, the concept of retirement may change significantly.

An unprecedented ageing of populations across the developed world will call for new levels of efficiency and creativity from the public sector. Without clear productivity gains economic growth cannot be sustained, especially given the increased health spending associated with the aging population.

Workers will increasingly expect employers to provide benefits additional to money. The productivity boom in the US economy last century created a massive consumer culture; but increasingly well-off workers may choose to trade higher salaries for more time with families. An associated trend will be high expectations of employers to provide competitive benefits to attract employees. This expectation is generally characterised by its association with Generation Y, but in the Australian context is as likely to be driven by very low rates of unemployment and associated with most workers, not just those born in a particular period.



Implications for border management to 2015

The changing nature of the world outlined in the preceding section will have three broad implications, which will impact all areas of border management.

The globalised economy

Several bilateral trade agreements will come into force.

Compared to non-Free Trade Agreement (FTA) baseline projections the implementation of an Australia China FTA can be expected to increase Australian imports from China in 2015 by over 7 per cent compared to 2004 levels. Exports to China can be expected to increase by 15 per cent. Despite current Australian disappointment with progress on negotiations, which provide for the best part of an agreement to be implemented by 2010, the net impact of an FTA by 2015 will not be affected by the rate of implementation, slow or otherwise, prior to 2010.

While the Australian Government has standardised insofar as possible the text of its bilateral trade agreements, and is expected to do so in the future, different measures associated with individual agreements add complexity for border management, particularly in respect of the Harmonized Commodity Description and Coding System (the Tariff) used to determine classification and duty rates.

General duty rates in the Tariff are mostly low and the trend towards lower rates is expected to continue. Two key developments will create increased workload in the period under consideration, with the reduction to the duty rates applied generally to manufacturing industries (5 per cent) for passenger motor vehicles in 2010 and for textiles, clothing and footwear in 2015.

The trend in the importance of the Tariff away from revenue to classification, largely for the purposes of community protection and bilateral trade agreement safeguards, will concomitantly shift the compliance focus of the border management agency. The decline of the

natural incentive to correct classification, payment of duty, may complicate and increase both interventionist and post-transactional workloads.

Arrivals by sea and air will be across a greater spread of geographical locations in Australia, including remote ports.

Containerised cargo will increase at an annual rate of 5-6 per cent to 2015, leading to a 70 per cent TEU increase in imports and exports by 2015. Air cargo will increase at an annual rate of 6 per cent (11 per cent for express carriers).

Under current arrangements, 5 per cent of sea containers are inspected as part of the Container Examination Facility strategy. This financial year, just over 130 000 TEU were inspected, which required 167 officers at a cost of just over \$16 million and \$30.5 million in logistical (stevedoring, transport and unpack) costs.

Based on current projections, with no additional facilities, current working hours and assuming the same inspection rate of 5 per cent in 2015, 226 000 TEU will have to be inspected, which will require around 350 officers at a cost of about \$30.5 million and approximate logistical costs of \$54 million. This projection does not incorporate capital expenses associated with the impact of increase volumes.

A major impact in the sea cargo environment, and not taken into account in the container inspection projections above, will potentially come from the US push for 100 per cent inspection of sea containers at the export port of loading. Assuming that this comes into force, and this remains uncertain, it is only likely to be achieved through government-industry partnerships. Nonetheless, it will reorient the border management focus to export, rather than import, cargo and require a large investment in several different types of technology as "smart" containers and container seals become prevalent and the

requirement to non intrusively inspect large numbers of export containers increases.

In the case of air cargo, the combined volume of air cargo and express carrier product is expected to increase by 70 per cent by 2015, resulting in the arrival of over 17 million consignments a year, up from just over 10 million in 2007.

Under current mass screening arrangements, Customs inspects around 60 per cent of all arriving air cargo nationally (about six and a half million consignments a year), which requires 145 officers and costs over \$14 million a year. Assuming maintenance of a 60 per cent inspection rate, on current projections 273 officers will be required for this activity, with direct costs nationally of about \$26 million, by 2015.

Currently, all arriving postal articles are inspected by Customs. Using a conservative annual growth projection of 6 per cent, the number arriving postal articles will increase from around 150 million in 2007 to about 220 million by 2015.

Visitor arrivals by air are expected to grow on average by 4.9 per cent per year. Growth in departures is expected to grow strongly at 10 per cent per year from 2009. Movements of aircrew are expected to increase by 3 per cent per year. Visitor arrivals by sea are expected to grow on average by 3.8 per cent per year.

On current growth projections, by 2015 the annual increase in the number of passengers and crew processed through international airports in Australia will exceed 1.5 million, with the total numbers processed each year exceeding 30 million by 2012.

Maintaining the current facilitation rate and current business processes, even with the full introduction of some automated processing (SmartGate), a cumulative total of 300 more primary line officers will be required at airports around Australia by 2015. The annual

requirement for more primary line officers will peak in 2013, with over 60 additional officers needed in that year and each year thereafter.

The full introduction of SmartGate will offset to a degree the number of extra primary line officers required (which is taken into account above); however, the offset value will peak in 2012 and start to decline thereafter as passenger numbers continue to increase.

On current growth projections, by 2015 the annual increase in the number of passengers and crew will exceed 1.5 million

The amount by which to increase these figures in response to the impact of the use of smaller airports by low cost international carriers is unclear because it is uncertain how successful these carriers will be.

Ship visits to Australian ports are expected to increase at an annual rate of 5 - 10 per cent per year, except in Western Australia, where the rate is more likely to be 40 per cent per year, driven by resources, particularly exports.

Australia will continue as a major resource exporter, with an associated requirement for supporting infrastructure and processes.

The main impact of this trend will be predominantly felt at district ports in Western Australia and Queensland and, to a lesser degree, at other resource ports around the country.

Current first port arrivals constitute about 12 824 ships a year, for which a total of 214 officers is adequate to maintain a first port boarding rate of 70 per cent.

Based on current projections and assuming an ongoing requirement for at least 70 per cent of first port boarding, by 2015 Australian ports will see the annual arrival of 22 865 ships, requiring at least 397 officers to maintain boarding activity.

Modernisation of customs organisations will remain a key implication, with Australia impacted by continuing pressure for more efficient, integrated processes, including through the application of technology, that manage and facilitate the end to end flow of people and goods rather than focussing on individual transactions at the border.

Mutual recognition arrangements and security initiatives with other customs administrations will lead to an increased focus on exports and export data for risk assessment.

Co-regulation with industry will become more likely to be considered as a model as the border management task increases in size and complexity.

The modernising pressures on customs administrations will be characterised by a suite of requirements with broad implications:

- earlier risk assessment of imports using pre arrival data and, increasingly, pre departure data
- an increased focus on supply chain security
- aligning reporting and intervention requirements as closely as possible to industry business models
- conducting border management responsibilities within

- a known and reliable service window
- differentiated risk treatment and reporting requirements depending on risk profile and capabilities of traders
- an increased focus on exports as trade partners require earlier reporting and request other administrations to examine goods prior to departure.

These broad implications will impact most heavily the existing regulatory regime and concomitant business processes, with a flow on effect on most aspects of border management.

Additionally, the border management agency will need to have interoperability, and joint border management processes in place, with overseas border management agencies. Relationships of trust will have to be established, which may include having to post Australian officers in overseas ports from time to time. This shift of focus will greatly increase the importance of existing, permanent overseas posts and may necessitate having to establish more.

A key development in sea logistics processes that will impact border management, driven by the logistics industry, and local communities negatively affected by trucks near ports, will be the development of inland sea container terminals, or intermodal hubs. This model proposes sea containers are moved directly from the port to an inland location prior to any other activity, including revenue formalities, taking place. Border management processes, especially in the areas of risk assessment and examination of sea containers, will be impacted by the use of intermodal hubs.

According to the NSW Freight Infrastructure Advisory Board (FIARB), a number of factors are critical to the economic and environmental success of new intermodal terminals. These are:

- a critical mass to offer economies of scale

- proximity to markets
- proximity to the rail and arterial road networks
- bundling of integrated, value-added services, for example, empty container storage and Australian Quarantine and Inspection Service (AQIS)/Customs inspections
- maximising the use of fixed assets through 24/7 operations
- adequate buffering from residential areas.

These critical factors will not only influence where border management activities will have to take place in the near future, but also that the capacity to provide those activities when and where required by logistics processes will be critical to the success of intermodal hubs. This will place the border management agency under pressure from several sources to ensure its trade facilitation business processes are compatible with, if not identical to, the logistics process. Intervention against cargo destined for a hub will be expected by the logistics industry to be unobtrusive.

Similar hubs will develop for air cargo as land availability at some airports becomes acute, with similar impacts on border management processes. More critically, the developing trend of low cost international airlines to deliver passengers to locations away from major airports will result in air cargo arriving at the same places. This will necessitate a reorientation of the current air cargo inspection regime, in either concept or resources, to cope with the potential geographical dispersal of operations should this trend continue to develop.

Assuming that border management processes move to be more closely aligned to logistics processes, the number of stakeholder with whom the border management agency will have to deal could vastly increase — the FIARB study quoted above noted that the international logistics chain in NSW alone encompasses two stevedores, over 20 shipping lines, more than 250 road transport operators, six rail operators in the

metropolitan area, four metropolitan intermodal operators, and over 1 000 intermediaries and brokers dispatching shipments on behalf of firms and individuals.

There will be a continued expectation in Australia that its border management agency will protect the community from some of the impacts of globalisation, including products manufactured to less than acceptable standards and under priced foreign competition

There will be an expanded number of controls on a greater range of goods for the purpose of consumer safety.

The global counterfeit market poses a significant health and safety risk to consumers in Australia

Out to 2015, the predominant area of community, domestic and international concern will remain focussed on the continued infringement of intellectual property rights. Counterfeit trade is growing at a rapid rate internationally and is already estimated to be a US\$500 billion per year industry, or 7 per cent of global trade. Australian and international trends indicate that the worldwide trade and production of counterfeit goods will increase over the next five years, with China and India being the primary source countries of counterfeit

goods. It is anticipated that an increase in trade between Australia and China, which will occur under the proposed free trade agreement, will increase counterfeit goods importations into Australia.

The global counterfeit market poses a significant health and safety risk to consumers in Australia, with counterfeit goods such as automotive, food and pharmaceuticals already available internationally for the Australian market.

The Australian government will remain under pressure from international organisations and large manufacturers to introduce increasingly wide ranging and stringent controls relating to intellectual property rights, which will in turn increase the complexity of operations at the border.

Beyond intellectual property rights, similar complexity will result from the continued development of the regulatory framework relating more generally to community safety. In the period under review, it is expected that the EU will continue to set the standard in this regard, with the implication being that border management practices relating to community safety will be similarly modelled in Europe. The Australian border management agency will have to put itself in a position where it can influence the expected outcomes at the border in an area of continuing community and international contention.

A grey area for intellectual property rights that will emerge will be around cheaply manufactured pharmaceuticals. An unprecedented number of pharmaceutical patents are due to expire over the next five years, which may result in a rapid expansion in the manufacture of commonly used products, some of which may be substandard. Increased regulatory scrutiny can be expected, with concomitant border controls.

Existing community protection regulations are expected to remain largely unchanged during the period under review, with existing controls on firearms and other weapons, objectionable material and other goods

considered harmful maintained. This will mean increased work load as additional controls are introduced without existing ones being removed and increased complexity as controls are changed to respond to circumvention strategies.

The community will continue to become increasingly concerned about the electronic border, leading in turn to an expectation that the Government will manage that border too.

Border management will be potentially impacted in three ways by the electronic border.

First, the increasing use of the internet to purchase goods from overseas, often in “penny packets” that fall under the value threshold for the payment of customs duty and Goods and Services Tax (GST), will lead to increasing pressure on the Australian Government from domestic retailers of the same products who do pay duty and GST because they import in bulk. This situation is likely to become acute during the period under review because of the increasing trend of small retailers adopting a business model under which no stock is kept in Australia but rather dispatched direct from overseas to the consumer on a demand basis.

Another aspect of this is the purchase by individuals of prohibited items, which may necessitate continued or increased intervention by the border management agencies in high volume environments (air cargo, express carrier and postal streams). The growing postal stream, lacking detailed electronic pre arrival reporting and very unlikely to do so during the period under review, will especially impact the border management agency’s capacity to exercise control over the contents of the stream. The more frequent forays of postal administrations into the traditional express carrier market will present a particular risk — the cheaper postal rates for almost the same delivery times will attract a greater number of clients but without the pre-arrival reporting that supports non-interventionist risk assessment.

Second, international concern is growing around the use of internet transactions, especially through online auction sites, to facilitate criminal activity, including money laundering. Over the period under review, there will be growing pressure on governments to more closely monitor internet transactions that involve the transfer of money or other items of value.

Third, objectionable material, such as child pornography, is currently seized at the border stored on electronic media, which is becoming smaller and showing more sophisticated encryption possibilities. Notwithstanding matters of practicability, in the mind of the community it is not a great leap to expect that similar material stored and transmitted via the internet should be controlled in the same way. Intangible electronic transactions are likely to emerge as a key pressure point for the government and, in turn, border management agency. This development will mean a detailed rethink about resources and methodology by the Government and border management agency to achieve an appropriate and timely response. Current intervention methodologies used for tangible goods may not deliver the required controls on these electronic purchases and transfers and developing intervention strategies and associated technology will be expensive.

Security and insecurity

There will be continued emphasis on export controls on Defence and dual use goods, with increasingly high expectations placed on the Australian border management agency.

The UN Security Council will continue to impose sanctions on recalcitrant states, resulting in an increased number of regulations that impact border management.

The border management agency will be expected to

continue to control the movement of people, goods and currency (and like) as circumvention strategies continue to evolve.

Organised crime will evolve to create new challenges to detection at the border as its activities resemble more and more the legitimate business going on around it.

The border management agency will have to know its operating environment intimately in order to be able to identify anomalies that might point to criminal activity. In this, the work around trade modernisation will assist in providing better data and identifying traders around whom a high level of confidence can be placed, eliminating them from intervention.

Diversification of criminal activities will increase the complexity of the regulatory environment, particularly as it relates to drugs and drug precursors.

The increasing trend towards the production of ATS over other types of drugs has two primary implications for border management. The first is the need to be able to identify precursors of ATS, many of which are liquid, transported in bulk and do not respond to current detection or analytical equipment. Second, the regulatory environment in this area will continue to evolve as new precursors are identified, and while the border management agency is unlikely to be directly responsible for the regulations, these will add more substances that the Government expects will be identified and controlled at the border. Additionally, as the criminal activities associated with the international movement of drug precursors evolve, the border management agency will be expected to respond.

Low level conflicts in failed and failing states could displace large numbers of people.

For the foreseeable future, Australia will remain a desirable destination for displaced persons, and

increased instability in many parts of the developing world will continue to place the border under pressure from illegal arrivals.

Aviation remains the preferred method for moving people illegally to Australia and people smugglers are likely to target airline carriers operating out of smaller airports in less developed countries. The growth of cut price airline operators in Asia will exacerbate this trend, especially as these operators are likely to seek access to Australia away from the main airports to reduce costs. The implication is that Australian border management agency will have to direct its capabilities equally to small as to larger international airports.

Although aviation dominates people smuggling attempts, illegal arrivals by sea present a potentially greater risk to border management

Although aviation dominates people smuggling attempts, illegal arrivals by sea present a potentially greater risk to the border management agency because of the length of remote coastline available on which to make landfall. There are several trends or contributing factors that add

to the maritime people smuggling problem Australia faces.

Ongoing global conflicts in countries such as Iraq, Afghanistan and Sri Lanka increase the probability of potential illegal immigrants (PII) from these regions seeking safe-haven or asylum. Pools or communities of displaced persons provide opportunities for people smuggling syndicates to source potential clients seeking Australia as a final destination.

Indonesia and Malaysia are attractive transit countries for people smuggling syndicates to pool PII and to launch ventures to Australia and will remain so, continuing to drive the geographical focus of this aspect of Australian border management activities.

The penetration of organised crime into the Pacific may increase the geographical spread of people smuggling syndicates, and reinforces the need for the encouragement and support of good governance in this region.

It will be increasingly important that business resumption plans for international trade and travel are in place to manage the aftermath of an unexpected event, such as a pandemic outbreak or terrorist attack

A key role for the Australian border management agency in assisting industry to participate efficiently in international trade is to take a key role in the promotion and development of business resumption plans that will enable trade and travel to start to flow again after a major unexpected event.

A changing world

In addition to increasing the cost of border management operations, the high cost of oil might also impact air passenger numbers projections. Similarly,

there may be a proportional increase in the carriage of cargo by sea, away from air. For both possibilities, quantification is not yet feasible.

Other environmental changes will also have a direct impact on the operations of the border management agency. The Australian Government will continue to require premises energy use targets of its agencies, which are likely to decrease every year. At the same time, a concomitant requirement will exist to buy more energy from renewable sources, which for the period under review will remain more expensive; the savings made through reducing energy consumption are unlikely to offset more costly “green” power.

Similarly, agencies’ green house gas emissions are monitored by the Australian Government, and will continue to be monitored. It is very likely that targets will emerge in this area as well. In both cases, there is likely to be an increased administrative overhead for the border management agency of the future in monitoring and reporting on its energy use and emissions.

The overall implication for the border management agency is that it will pay more for its energy use through a combination of direct costs (including using “green” energy sources), buying more energy efficient technology and adjusting business processes and behaviours to use less energy. Over the longer term, this will be of especial concern in high energy use areas of border management. For example, the use of aircraft and vessels for surveillance may become sufficiently costly to warrant considering alternatives such as buying surveillance satellite time.

The changing nature of energy usage and emissions targets means that future procurement will have to have an eye for developing mandatory requirements to avoid the unnecessary expense of modification or shorter service life of some purchases as a result of these not being compliant with foreseeable future standards.

Australia may become an important exporter of energy.

Increasing competition for natural resources will impact efforts to police Australia’s EEZ, with markedly more organised attempts to exploit it illegally. The Australian Antarctic Territory might be similarly affected, potentially creating an entirely new border.

Immigration and quarantine risks at the border will alter as environmental changes occur globally.

Environmental concerns will make the regulatory environment more complex, in particular the prospect of increased international scrutiny of the disposal of hazardous waste and likely prevalence of international carbon trading.

Increased border management capabilities will be offered by improved detection, communication and information management technologies, but these will also create new challenges as technology previously only available to governments becomes affordable by non state actors, offering them like capabilities to evade detection.

The rapid development of technology, and the range of technology that will become available for the border management task, will have a major impact on the way in which border management agencies acquire technology. The pace at which technology may become obsolescent, or be circumvented if used for border protection, especially information and communication technology (ICT), will require the border management agency to have an equally rapid cycle of exploring, researching, developing and implementing new technologies. This may mean funding the exploration of nascent technology in the research environment years ahead of expected deployment in order to remain ahead of attempts to circumvent technology. This will in turn impact business processes and the type of workforce the border management agency requires.

While the preceding Strategic Environmental Assessment to 2015 noted the rapid pace at which technology is developing and summarised the foreseeable developments to 2015, the implication for border management is that a limited number of these technologies will be practicable to deploy within that period. These are described here.

Bulk detection

Bulk detection relies on imaging or material identification, or both. Over the next few years, the intense research and development efforts in many countries should yield at least evolutionary advances in bulk detection and, quite likely, significant improvements.

X-ray and gamma-ray radiography is mature. Devices are available for scanning objects ranging in size from luggage to sea containers and now cover:

- high power (for better penetration)
- high resolution (for better images)
- dual views (from the side and top)
- dual energies (to provide some discrimination between different materials)
- diffraction to identify materials by analysing crystal structure.

Current developments include:

- multiple energies which are designed to give better discrimination between materials, for example, organics and inorganics
- multiple views with a 3-D computer tomographic reconstruction of the object
- combination of x-rays with other technologies.

Future advances in x-rays are likely to be incremental, with attendant cost and other implications.

Raman spectroscopy is already used by Customs to identify suspect materials found or to detect target

The world is undergoing a global technology revolution that is integrating developments in biotechnology, nanotechnology, materials technology, and information technology

substances among the constituents of the materials.

Neutron radiography can be based on transmission (for imaging, like with x-rays) or on neutron activation analysis (for identifying materials). The neutron transmission scanner, developed for air cargo examination by Commonwealth Scientific and Industrial Research Organisation (CSIRO) and recently trialled by Customs has the potential to reveal shape, density and composition. As a result of this trial, CSIRO is pursuing the development of an improved next generation scanner in conjunction with a commercial partner.

Nuclear Quadrupole Resonance (NQR) can distinguish materials (such as “conventional” explosives and drugs) that contain nitrogen.

Radiation monitoring is a mature technology and a variety of detectors – ranging from portals that scan entire trucks to hand-held devices – are available.

Millimetre waves (mm-waves) and terahertz-rays are short-wavelength electromagnetic waves that may contribute to air cargo security in the long-term future. Currently, the technology looks promising, however more research and development is required before it will be of practical use for aviation security.

Although many of the bulk detection technologies are mature, there are prospects of useful advances – in a relatively short time and at comparatively low cost – through the combination of technologies with complementary capabilities.

Trace detection

Trace detection exploits chemical and physical characteristics of threat substances. Analysis can be performed on air samples, swabs, or by using remote sensing. Existing laboratory analytical instruments are very sensitive and capable of excellent discrimination between different materials but usually require highly trained staff and are often expensive and slow.

Gas Chromatography - Mass Spectrometry (GC-MS) is one of these well-established laboratory analytical tools; it is very sensitive and gives very good discrimination between materials but is slow and requires skilled operators.

Ion Mobility Spectrometry (IMS) is a mature technology that is widely deployed in airports and cargo depots to detect drugs and explosives. It is compact, relatively inexpensive, rapid and requires little training. It can have a high rate of false positives (false alarms), and it is recommended that complementary verification technology be used to confirm findings. The interpretive skill of the operator is also critical in reducing the false alarm rate and robust training and accreditation programs

are critical for optimum use. Incremental improvements can be expected in its performance over time.

Selected Ion Flow Tube - Mass Spectrometry (SIFT-MS) is a well-known technique for trace gas analysis. Customs uses these units in the examination of sea cargo. At this stage, these units are not easily portable. They can be programmed to detect fumigants, and Customs is currently investigating using these units to detect a wide range of substances such as chemical agents and explosive vapours.

A recent promising innovation adapts medical antibody technology to the detection of illicit substances including explosives. It discriminates very well between different substances; performance improvements could be substantial. Customs uses a number of these units as a verification tool.

'Lab-on-a-chip' devices use electronic microchip technology to miniaturise chemical and biological laboratory analysis and processing. Rapid advances can be expected over the next few years, leading to a variety of devices that are portable, robust, simple to use and relatively inexpensive. Changes here could be revolutionary.

Some commercial products pump air through concentrators that extract the wanted substance while suppressing undesirable ones. There is the possibility of extending their use to process, over a relatively long period of time (15 minutes or more), the air in cargo areas to enhance the detection of explosive vapours.

Container tracking and monitoring

Container tracking and monitoring devices, such as RFID, various "smart" seals and containers incorporating Global Positioning Systems (GPS) and the capability to monitor a container's integrity, will come into use over the period under review. This will be mainly driven by cargo and supply chain security requirements emanating from the USA. This will have two implications for border

The emerging technology revolution on the one hand opens up possibilities for increased monitoring, surveillance and tracking of goods and people, and, on the other, introduces potential difficulties with privacy and ethical issues

management. First, the border management agency will be able to remotely locate a container of interest. Conversely, should the border management agency wish to interdict a container, interested parties, including criminal, will be able to tell that it has been moved and opened unexpectedly.

CCTV

Large numbers of Closed Circuit Television (CCTV) cameras are deployed at the border. They play a vital part in security, including that of air cargo but require continual monitoring and recording capability to be effective.

There are a number of academic, research and corporate organisations working on CCTV enhancements, with the development of new software packages that can be added to existing systems. These improvements, such as automatic tracking and detection of anomalous movement, still need to be evaluated within operational settings to test their usefulness.

RFID

It can be expected that RFID devices (not unlike an electronic version of the familiar barcode) will be widely deployed for the detection and tracking of items over the next few years. They may have applications in airports for baggage handling, consignment tracking and security, and at ports for container tracking but there are practical as well as cost issues that will need to be resolved. This technology could be used by the border management agency for its own purposes as well, for example, to manage detained goods.

Implications

X-ray and IMS are the currently available and operationally proven technologies. They are mature technologies and it is expected that incremental improvements will continue. In the short-term, increasing use of antibody based technology and Raman Spectroscopy will provide much needed verification capability to IMS technology.

In the medium term, there are prospects of revolutionary improvements in neutron radiography, lab-on-a-chip devices and CCTV monitoring technology but these require more research, development and operational testing over the next few years.

The Australian border management agency will be expected to maintain a high level of pandemic readiness, including a preparedness to very tightly control the border under certain, extreme circumstances.

Under human pandemic conditions, the border management agency will suffer two concomitant impacts: an expectation that very tight border control will be implemented at the same time as officer numbers are likely to be greatly reduced.

It is predicted in a pandemic in Australia that:

- one in four people of working age will become sick
- of these, 60 000-150 000 will need hospitalisation
- work places will suffer 25-40 per cent absenteeism (33 000-53 000 out of 133 000 public servants)
- there will be around 44 000-60 000 deaths.

The duration of any pandemic remains difficult to predict, but, if influenza related, its impact is likely to occur in three to four waves over the course of year. Longer term impacts on workforce, such as the re-emergence of other diseases in a weakened population are equally difficult to assess.

The impact on border management activity will be to shift the focus to the vectors associated with the pandemic (passengers and animals and, possibly, animal products), probably, because of greatly reduced officer availability, to the exclusion of other activities.

An animal (or plant) pandemic threatening Australia's agricultural industries would result in a similar shift in focus to intercepting vectors, with the additional impact, because officer numbers are unaffected, of greatly increased rates of intervention. In the short to medium term, Government and community expectations resulting from the outbreak of an animal (or plant) pandemic will make it very difficult for the border management agency to develop and promote a solely risk based intervention methodology.

This is an area in which the border management agency will need to continue to develop its capability (equipment, protective systems and intervention methodology) as the likelihood of a pandemic increases.

Workforce competition and cost will emerge as a key issue because of an aging population, but also the need to compete for the people and skills required to manage the border.

As an example, armed forces in societies that have a declining proportion of young people, through demography, policy or disease, will find it progressively difficult to attract suitable or sufficient recruits. This trend is likely to be exacerbated by extended full-time education and a consequently greater age at which people will enter an increasingly competitive market for labour. This may lead to the use of foreign or commercial manpower and security solutions, especially for deployed or enduring tasks. This is also likely to impact border management agencies that employ officers in armed, aviation or seagoing roles, especially as those agencies will be competing with the armed forces for staff.

For the border management agency, the implication of this is that it will be competing in a tight market to attract, recruit and retain younger employees who can fulfil such demanding duties.

With an increasingly large component of the longer serving workforce retiring, combined with a shift in work patterns away from long term service, knowledge management capabilities will become critical.

A slowing of economic growth brought on by demographic changes may refocus scrutiny of the efficiency of border management processes because of their role in supporting economic growth.

An unprecedented ageing of populations across the developed world will call for new levels of efficiency and creativity from the public sector. Without clear productivity gains economic growth cannot be sustained, especially given the increased health spending associated with the aging population



CUSTOMS

CUSTOMS

Responding to the border management challenge to 2015

This section explores at a high level some of the ways in which the border management agency can respond to the impacts outlined in the previous section. The options presented here are not definitive and will be the subject of continuing development.

The globalised economy

Arrivals by sea and air will be across a greater spread of geographical locations in Australia, including remote ports.

Containerised cargo will increase at an annual rate of 5-6 per cent to 2015, leading to a 70 per cent TEU increase in imports and exports by 2015. Air cargo will increase at an annual rate of 6 per cent (11 per cent for express carriers).

In the longer term, it may be untenable to simply maintain the current level of sea container inspections through increasing the number of officers and examination facilities because of the likelihood of a reorientation of activity towards large scale inspection of export container driven by the US security regime. Should this come to pass, the emphasis will be on efficiency and the minimisation of any unwarranted interference in the normal logistics flow.

Possibilities to assist achieving a greater rate of sea container inspection include a combination of responses to both eliminate low risk containers from inspection and increase the throughput of containers that need to be scanned:

- running the current Container Examination Facilities for longer working hours (perhaps 24/7) and accepting the increased costs
- establishing partnerships with sea cargo service providers with the ultimate aim of having them secure their supply chain sufficiently against infiltration that

they are less likely to pack prohibited goods at the point of export

- in the longer term, reorient sea container inspection technology to scanners that can be taken to the waterfront or, if fixed, are integrated into the normal logistics flow for either export or import containers
- leveraging off security inspection regimes for export sea cargo at overseas ports of loading for arriving cargo.

In addition to simply increasing the number of officers (and costs) to maintain a high level of inspection rate for air cargo, a number of options could become feasible over the period under review. These include:

- new technologies that allow the bulk inspection of consolidated air cargo
- other technological efficiencies, such as providing officers mobile access to data holdings while inspecting cargo
- making better use of industry's real time data holdings to risk assess air cargo, particularly in the express carrier context
- analysis of the level of risk involved in reducing or ceasing inspection of cargo from well organised air cargo service providers (again, for example, the express carriers) who already have reasonably strict limits on what types of goods they will accept for carriage
- establishing partnerships with air cargo service providers with the ultimate aim of having them secure their supply chain sufficiently against infiltration that they do not lift prohibited goods at the port of export
- leveraging off security inspection regimes for export air cargo at overseas airports of loading.

Visitor arrivals by air are expected to grow on average by 4.9 per cent per year. Growth in departures is expected to grow strongly at 10 per cent per year from 2009. Visitor arrivals by sea are expected to grow on average by 3.8 per cent per year.

To respond to the increasing number of passengers and the likely increased divergence of arrival and departure points, a number of initiatives can continue to be developed or explored, including;

- working with airports on infrastructure capacity, particularly as it aligns to peak arrival times
- securing agreements to access passenger data from overseas states, especially those that have high levels of privacy regulation (for example the EU)
- developing interoperability with airline and airport capabilities and processes
- continuing to develop and deploy technology and processes to facilitate automated border processing for customs and immigration purposes
- developing strategies to address the requirement for new, smaller international airports, especially as demanded by low cost carrier looking to move away from the current large international airports
- considering whether more obtrusive biometrics (for example, fingerprints) need to be introduced to complement facial recognition technology
- exploring inwards clearance processes that begin at the airport of departure
- developing greater cross agency interoperability to risk assess non residents prior to visa approval and prior to arrival.

Ship visits to Australian ports are expected to increase at an annual rate of 5 - 10 per cent per year, except in Western Australia, where the rate is more likely to be 40 per cent per year, driven by resources, particularly exports.

Australia will continue as a major resource exporter, with an associated requirement for supporting infrastructure and processes.

The border management agency needs to position itself to respond to this trend in a way that is sustainable well beyond 2015, with some analysts and the resource

industry predicting another 20 or 30 years of heightened activity in the Australian resources exporting sector.

In the short term, the response demanded of the border management agency will revolve around officer availability and the places at which those officers are available

In the short term, the response demanded of the border management agency will revolve around officer availability and the places at which those officers are available. As already noted, at some district ports in Western Australia this will require a three fold increase in the number of officers over current levels by 2012 to maintain a 70 per cent first port boarding regime.

Some uncertainty attaches to this projection; while large resource exporters are at the moment adding berths to existing ports, it remains likely in the period under review that these companies will also seek to establish entirely

new ports. This would require remodelling projections about staffing district ports.

In the longer term, as the number of arriving export vessels in some parts of the country continues to increase, along with the costs associated with the current boarding model, possible responses include:

- exploring the potential to move to more risk-based activities through:
 - working with shipping lines to establish much higher levels of electronic crew reporting, leveraging off current efforts in this area
 - building intelligence holdings and relationships with overseas partners that allow interdiction of very high risk crew members at the last port of departure
- a more adaptable boarding capability, including using helicopters and small boats to enable boarding ships at sea or before they reach a berth.

The nature of the bulk cargo exported from most of these ports makes it unlikely that high levels of inspection will be required during the period under review — the development of longer term responses will remain focussed on ship and port security and crew reporting.

Modernisation of customs organisations will remain a key implication, with Australia impacted by continuing pressure for more efficient, integrated processes, including through the application of technology, that manage and facilitate the end to end flow of people and goods rather than focussing on individual transactions at the border.

Mutual recognition arrangements and security initiatives with other customs administrations will lead to an increased focus on exports and export data for risk assessment.

Co-regulation with industry will become more likely to

be considered as a model as the border management task increases in size and complexity.

Australia's border management agency is already committed to continuing modernising reforms in the cargo environment and over the period under review will take on a lead role in the region, often through APEC. The responses to the modernising drive include:

- conducting self evaluation of trade facilitation, find bottlenecks in the customs related procedures through the use of time release surveys
- implementing the APEC Framework for Secure Trade based on the World Customs Organisation Framework of Standards
- linking border management data collection to industry processes
- improving efficiency in customs clearance and the delivery of goods in order to benefit importers, exporters and manufacturers through simplified and harmonised customs procedures and best practices
- reducing paper documents for trade-related procedures and automate such procedures
- ensuring consistency of application, certainty and a level playing field for businesses through the Harmonised System Convention (the Tariff) of the World Customs Organisation
- adopting a coordinated and joint planning approach to streamlining the domestic regulatory environment as it impacts the border
- realising appropriate, transparent and predictable trade procedures through consistent and non-discriminatory application and implementation of trade-related laws and regulations.

A corollary of these responses will be further modernisation of customs legislation in Australia. This is a recurring response to many of the main trends and implications out to 2015. Taking into account the forecast complexity of the regulatory environment associated with the various border controls that are likely to be

required over the period under review, a more appropriate response may be to undertake a consolidated review of all legislation that underpins border management activities.

There will be a continued expectation in Australia that its border management agency will protect the community from some of the impacts of globalisation, including products manufactured to less than acceptable standards and under priced foreign competition

There will be an expanded number of controls on a greater range of goods for the purpose of consumer safety.

The community will continue to become increasingly concerned about the electronic border, leading in turn to an expectation that the Government will manage that border too

The increasing prominence of the electronic border will require two responses from the border management agency.

First, with regard to the electronic transmission of controlled items (for example, regulation 4A material such as child pornography) or the use of internet transactions to launder money, a decision will have to be taken about the degree to which the Government will, and can, control these transmissions. The border management agency should seek to become an influential voice in this discussion.

Second, the suggested trend that more consumers will directly receive goods from overseas, even if the transaction is conducted on their behalf by a retailer in Australia, will impact border risk assessment and inspection regimes, if only because of increasing volumes in air cargo and, especially, the express carrier and postal streams. Where electronic pre-arrival reporting

exists (air cargo and express carrier streams), the border management agency can respond by aligning its intervention in the environment more closely with existing data flows and working with industry to improve those data and their usefulness to both parties. This mirrors the work already initiated for modernisation more generally. Where electronic data do not exist, and are unlikely to do so, the border management agency will have to commit resources to determining what level of intervention is effective (and acceptable), followed by the development of the capability to do so, including appropriate technological solutions.

The key factors that spawned international terrorism show no signs of abating over the period under consideration

Security and insecurity

There will be continued emphasis on export controls on Defence and dual use goods, with increasingly high expectations placed on the Australian border management agency.

This, along with some international cargo security measures, may require the border management agency to reorient some of its interdiction capacity towards

controlling exports. Because the exports environment is one traditionally experiencing a very low level of border intervention and has very truncated delivery time to the aircraft or ship, the border management agency will have to develop a new strategy that integrates business processes and the application of inspection technology in a way that has a minimal logistical impact. Such a strategy is likely to be required to be implemented during the period under review.

The border management agency will be expected to continue to control the movement of people, goods and currency (and like) as circumvention strategies continue to evolve.

Organised crime will evolve to create new challenges to detection at the border as its activities resemble more and more the legitimate business going on around it.

The border management agency will need to develop processes to allow it to analyse in detail the border environment, which generates large quantities of data about people, movements, cargo, ships and aircraft. The ability to identify anomalies will be a crucial and this ability will need to be able to evolve itself as the “normal” changes as trade patterns and logistics processes also change.

The border management agency will need to more closely involve reputable members of the logistics industry in some components of its border risk assessment. Beyond just using referrals of suspicious activity by industry, the border management agency will develop means of using industry’s own systems to enable risk assessment and, under certain circumstances, pass some of the responsibility for responding to risk to industry. In addition to “do not load” orders associated with pre-load reporting and risk assessment, this could include negotiating with some service providers (express carriers being likely to be the most receptive in the period under review) not to accept goods for export unless they

know that some import requirements, such as permits, have already been met.

The border management agency will be a target for criminal infiltration or attempts at corruption.

The border management agency will need to put in place strong integrity arrangements for its own officers as organised crime challenges detection at the border through seeking to compromise public officials.

Diversification of criminal activities will increase the complexity of the regulatory environment, particularly as it relates to drugs and drug precursors.

This will be a key response area for the border management agency, as it is likely to require rapid technological development (and associated processes and training) over the period under review. Developing the capability to identify drug precursors, of which there may be many industrial chemicals of potential use, will be critical.

A number of other responses will have to be developed to allow the point to be reached at which diagnostic equipment can be applied. This includes, for example, training officers to read chemical labelling on the exterior of packaging and developing detailed knowledge of the legitimate and illicit trade in drug precursors. Over the period under review, these types of response will have to evolve almost continuously as different chemicals are targeted by ATS manufacturers.

Additionally, the border management agency will need to put itself in a position where it can access the expertise necessary to forecast what the next likely synthetic drugs, and their ingredients, are likely to be in order to better target border management activities around drug detection.

The most far reaching change, however, that has been suggested for the period under review is to amend

the Tariff to provide for a far greater level of detail for the classification of industrial chemicals, modelled on the work already achieved for Chemical Warfare Convention chemicals. Developing this response will be time consuming because of its international impact, but will allow far greater precision in both regulating and controlling these chemicals at the border.

Low level conflicts in failed and failing states could displace large numbers of people.

In the period under review, the Australian border management agency will be expected to continue to contribute to capacity and good governance building efforts, particularly in the Pacific, as part of the Government’s continued work to mitigate the threat of failing states in the region. This will require an ongoing commitment of resources for the foreseeable future.

A changing world

In addition to increasing the cost of border management operations, the high cost of oil might also impact air passenger numbers projections. Similarly,

there may be a proportional increase in the carriage of cargo by sea, away from air.

Effectively responding to the implications of environmental changes during the period under review will be primarily associated with corporate behaviour around energy use and emission levels. Proposed response behaviours follow, many of which are likely to be increasing driven by the Government regardless of whether agencies take these up for themselves.

The border management agency will need its procurement documentation to include guidance on environmental requirements, to articulate a commitment to environmental management and to state the obligation of purchasing officials to comply with Commonwealth environmental policies and directions. This would ensure consideration is given to environmental requirements throughout the procurement process.

The border management agency could establish an obligation on its officers to consider environmental impacts at the replacement, refurbishment and property negotiation/contracting stages. This includes purchases

Table 3 Potential technologies for border management

	Detection		Surveillance	Forensic data	People screening
	Bulk	Trace			
Information and computers			Extensive wireless communications Wearable computers Electronic transactions Secure data transfer	Ubiquitous info access Ubiquitous RFID tagging Information Exploitation Secure data transfer	Implants for tracking and ID Biometrics as sole ID Wearable computers Smart systems
Surveillance	CBRN sensor networks Rapid bioassays		Pervasive sensors Commercial UAVs Secure video monitoring	Information Exploitation Smart systems Computer forensics	Implants for tracking and ID Biometrics as sole ID Secure video monitoring
Sensors	Pervasive sensors Resistant textiles Robotics Lab on a chip	CBRN Sensors on personnel Rapid bioassays Lab on a chip	Millimetre wavelength & terahertz sensors Hyperspectral sensing		

(including lease) of such things as buildings, vehicles other operational equipment.

The border management agency will be expected to:

- systematically assess and continually review environmental performance across the agency
- follow up on audit recommendations, as these are generated from time to time, to obtain cost savings in energy use.

To achieve mandated targets while sustaining the operational capabilities expected of it, the border management agency will need to:

- initiate a study on the operational impact of rising energy costs
- initiate a study on identifying more energy efficient ways of conducting operations and managing premises
- be in a position to respond to future changes to Commonwealth environmental requirements.

Reiterating that much of the work needed to achieve mandated targets in energy use and emission levels is about behaviour, the border management agency will need to appoint and train officers involved in procurement appropriately to ensure that procurement decisions comply with environmental requirements. Educating staff generally on environmentally friendly office practices could also improve environmental performance and achieve cost savings.

The border management agency will need to continually monitor its environmental performance and initiatives against internal policies, Commonwealth requirements and the performance of other government agencies. Additionally, it will have to acquire and maintain easily accessible and accurate data on environmental performance to facilitate assessment.

The border management agency will also have to monitor the gross effects of environmental changes, and especially oil prices, on its operating environment. Some of these changes may start to have an impact on the logistics industry during the period under review and the responses of the industry will in turn influence the way in which the border management agency responds.

Australia may become an important exporter of energy. Increasing competition for natural resources will impact efforts to police Australia's EEZ, with markedly more organised attempts to exploit it illegally. The Australian Antarctic Territory might be similarly affected, potentially creating an entirely new border.

Responses to this trend are covered in the Border Protection Command Future Operating Concept.

The current high oil and gas prices are expected to remain for the foreseeable future, with increasing market tightness predicted after 2010

Environmental concerns will make the regulatory environment more complex, in particular the prospect of increased international scrutiny of the disposal of

hazardous waste and likely prevalence of international carbon trading.

Increased border management capabilities will be offered by improved detection, communication and information management technologies, but these will also create new challenges as technology previously only available to governments becomes affordable by non state actors, offering them like capabilities to evade detection.

Of the wide range of technologies that will become available in the period under consideration, only a few of these will necessarily have an application in the border environment. These are outlined in the Table 3.

Equally important will be the way in which the border management agency decides to develop and procure technology. The border management agency will need to position itself at the front end of developments in appropriate technologies to ensure that it is among the first to be able to deploy some of these — both to remain ahead of attempt to circumvent new technologies, but also to address the issue of increasingly slow procurement times suggested by some analysts as new security requirements increase the numbers of buyers.

Deploying new technologies carries risks, but many of these can be mitigated by early involvement in the direction (and funding) of promising academic research and development. The border management agency will need to develop the capability to identify research that looks promising and respond accordingly.

The Australian border management agency will be expected to maintain a high level of pandemic readiness, including a preparedness to very tightly control the border under certain, extreme circumstances.

The border management agency will need to invest in pandemic preparedness, including equipment and training, with a regular commitment to ongoing cross agency exercises, most importantly including those that simulate the effect of the pandemic on the border management agency's capacity to fulfil its own obligations at the border.

Deploying new technologies carries risks, but many of these can be mitigated by early involvement in the direction (and funding) of promising academic research and development

Workforce competition and cost will emerge as a key issue because of an aging population, but also the need to compete for the people and skills required to manage the border.

With an increasingly large component of the longer serving workforce retiring, combined with a shift in

work patterns away from long term service, knowledge management capabilities will become critical.

A slowing of economic growth brought on by demographic changes may refocus scrutiny of the efficiency of border management processes because of their role in supporting economic growth.

The border management agency will require a workforce model based around its business needs and able to adapt as these change.

Broadly, the workforce model will comprise the following components.

Attracting officers:

- having employment sub brands
- using targeted marketing for the career path
- locating work where there is the market.

Recruiting officers:

- differentiate the aptitudes required
- cater for different business needs with different employment models (for example, full and part time ongoing or non ongoing)
- outsource where cost effective to do so.

Managing officers' performance:

- Developing and deploying
 - differentiate work categories
 - match people to business needs
 - invest at steps in the career
 - business areas identify the base skill sets
 - flexibility to respond to changing requirements
- Retaining
 - need for breadth and depth in the workforce
 - having breadth of skill is itself a specialisation
- Exiting and redeploying.

Lying beneath these components will be a series of differentiated career paths, itself a means to achieve some of the objectives of the main components of the workforce model.



Border management in 2015

Expectations and characteristics

To fulfil everything that will be required of it out to 2015, Australia's border management agency will need to achieve the following operating responses.

1. Work ahead of the border to identify and manage risks

Australia's border management agency will need to position itself to know about risks before they arrive at the border as the primary means of border protection — the physical border will ultimately become the secondary layer of intervention. It will do this through:

- mutual recognition of border processes with other administrations, including pre-export examination
- using pre-arrival, pre-load and pre-departure data
- using industry's data and developing efficient means for it to be accessed or collected
- identifying anomalous behaviours or transactions early
- developing systems and processes that provide domain awareness
- capacity building in the region
- using overseas liaison (posts).

2. Maximise the number of cross border movements where intervention is not required

Maximising the extent of secure trade and travel so as to more tightly focus interventions on high risk cargo and people will be a key responsibility of Australia's border management agency. It will do this through:

- promoting and facilitating authorised economic operators
- recognising industry's own measures to secure the supply chain and international travel environment
- moving to a quality assurance rather than inspection regime for trusted parties
- removing trusted parties' transactions from mass

screening arrangements other than for assurance purposes.

3. Focussing on intelligence

Australia's border management agency will use intelligence effectively to identify risks against which intervention is needed. It will:

- develop partnerships across government
- develop international partnerships with intelligence and law enforcement agencies
- conduct active intelligence operations with our partner agencies in Australia and overseas
- develop models to apply intelligence that takes advantage of the industry and other data produced by the end to end flow of cross border movements of people and goods, for example, using the whole of traveller history model
- change risk assessment processes to take in the end to end flow of cross border movements of people and goods rather than individual transactions at the border
- develop focussed intelligence to mitigate criminal networks.

4. Have non intrusive technologies and unobtrusive intervention processes

Non intrusive inspection technologies and unobtrusive intervention processes lie at the foundation of the ability of Australia's border management agency to intercept goods and people identified as risks while minimising the impact on legitimate trade and travel. Elements of this include:

- integrating information collection and controls into industry's business models wherever possible
- "in flow" inspection technologies and processes (for example, drive-through container x-ray facilities)
- leveraging industry's adoption of technologies for assurance (for example, "smart" containers)
- leveraging industry's own measures to provide security in the international travel environment

- leveraging industry's own inspection regimes (developed to meet security requirements)
- continuing to develop and deploy new non intrusive inspection technologies.

5. Be flexible and scalable in our intervention approach

Australia's border management agency will need to be able to rapidly scale up or reorient its border protection activities, including the:

- ability to rapidly increase and sustain increased intervention rates:
 - in certain circumstances (for example, a pandemic)
 - in response to certain risks (for example, unsafe consumer products)
 - in certain streams
- ability to deploy and redeploy people and technology as needed
- ability to redirect processes and intervention rates in response to emerging or increased risks.

6. Global partnerships to manage cross border flows

Australia's border management agency understands that the border is best protected if approached in its international context, which can be done by:

- developing custom to customs and other government to government partnerships around border management
- developing shared processes with global partners around reporting and inspection arrangements
- influencing global partners to assist industry to participate efficiently in international trade
- capacity building in the region
- using overseas liaison (posts).

There are eleven broad capability development areas that will allow Australia's border management agency to face the challenges of 2015

7. Assisting industry to participate efficiently in international trade and travel

Australia's border management agency has a responsibility to support legitimate trade and travel, which it will do through:

- being engaged early with industry as it develops new business model so as to better design necessary border controls
- promoting measures that allow Australia to be seen internationally as a secure trading partner
- taking a leading role in promoting business resumption processes for international trade and travel for use in the aftermath of an unexpected event (for example, a pandemic outbreak or terrorist attack)
- promoting international adoption of a "report to one, report to all" (single window to government) facility
- assisting Australian industry to meet the requirements of overseas authorised economic operator and like arrangements

- promoting internationally models of efficient data collection from parties involved in crossing border, for example, models that use existing industry data sets about people or goods rather than requiring new data sets to be created.

8. Having a supportive workforce engagement and development model

Australia's border management agency will need a supportive workforce engagement and development model that delivers the capabilities necessary to provide effective border protection in this environment. Elements of this will include:

- employment and sourcing models that match business requirements
- retaining flexibility while meeting the need for increasingly specialised skills
- the ability to attract, recruit and retain the right employees.

Broad capability development needs

There are eleven broad capability development areas that will allow Australia's border management agency to face the challenges of 2015. Many components of these broad capabilities are already under development and are likely to come to fruition in the period under review. Many of the broad capabilities are linked: for example, the continued development of non intrusive inspection technology provides the foundation for the capabilities around efficient, streamlined and unobtrusive customs processes.

1. Mutual recognition (data and processes)

The broad capability is primarily about recognising reporting, risk assessment or inspection of cargo that has taken place at the port of export and not duplicating these efforts at the Australian border, with Australian risk assessment and inspection of export cargo will be

similarly used by overseas partner agencies. Similar ideas are likely to be applicable to broadening the use of immigration data. An element of this capability is also about shared recognition of, and hence better linkages between, processes at the Australian border. Generally, the broad capability will include:

- harmonised import and export requirements with trading partners
- provision of a "report to one, report to all" (single window) capability
- formalised arrangements with other agencies operating at the border for data and intelligence exchange and coordination of operational activities, here and overseas
- the ability to formally assess and then recognise of pre-load or export inspection regimes operated by overseas partner agencies
- the ability to absent shipments from recognised channels from mass screening or other inspection regimes at the border.

2. Pre arrival/pre load/pre departure data reporting

This broad capability is about lengthening the risk assessment cycle to allow longer to react if necessary or to eliminate cargo and persons from further consideration earlier. Ultimately, it is intended to minimise work at the border by preventing cargo or persons about which concerns are held from travelling to Australia at all, or until such concerns as resolved. The capability is likely to require the following general components:

- early risk assessment processes and systems that can operate on incomplete data sets
- a legislative and policy base (perhaps including international memoranda of understanding) to support responses to very early risk assessment, in particular instructions not to load cargo, or allow persons to board, at the port of departure
- appropriate response capabilities to be activated in

instances where cargo is loaded, or a person boards, despite instruction to the contrary.

3. Direct access to industry data

It will be increasingly important to develop capabilities to use the full suite of data available in the supply chain for risk assessment and other management tasks, including post transactional activity. A similar capability exists for passenger data, but will be refined over time. It includes the following general components:

- linking transaction data about persons and cargo (that is, travel arrangements with potentially related cargo movements)
- the ability to read nested data, for example, transmitted by sets of multiple RFID tags that cover a shipment from container level down to item level
- risk assessment techniques that use disparate data sources created by different industry sectors within the supply chain
- knowing the environment, that is, who creates which data and how these interact along the supply chain
- refining and streamlining post transaction assurance activities through direct access to industry data – including through using and further developing computer forensics and forensic accounting skills and tools
- gaining access to industry’s decision making processes within the supply chain, for example, around routing and re routing cargo to meet changing consumer demands, giving visibility on the locations of expected high volumes of transactions that might impact the ability of the border management agency to respond. In the future, some of these decision making processes will be automated, shortening reaction times for the border management agency.

4. Trusted industry partners

Over the period under review, a number of parties involved in importing and exporting goods to and from Australia will be in a position to provide the border management agency with a very high level of surety about the accuracy of their reporting and the proof against infiltration of their supply chains. An increasingly required capability will be one that allows assessment and recognition of these parties, including general components that allow for:

- management of Authorised Economic Operator arrangements
- development of “differentiated” trusted parties
- where trust or appropriate assurance measures can be developed, aligning border revenue processes with broader industry financial practices (for example, transfer pricing)
- other facilitative measures for trusted importers and exporters that generally remove them from real time scrutiny and mass screening or other inspection arrangements.

5. Direct use of industry processes

This capability is about providing a greater number of intervention options for border management — wherever is appropriate along the supply chain. It is also about reducing duplication of activities (for example, non intrusive inspection for security purposes) or unnecessary double-handling or delaying of cargo or people. Its components include:

- partnerships with different logistics sectors to allow border management activities to integrate with existing (and new) industry processes
- identifying and taking advantage of “natural” choke points for, and timetabling of, intervention opportunities
- earlier involvement in industry’s infrastructure developments in some sectors, for example, airports and resource export ports

- leveraging of cargo and traveller security measures, for example, developing the capability to read and gather data from industry's "smart" containers and RFID container seals
- making use of conditions of carriage of certain industry members who may be willing to voluntarily not load prohibited goods at the port of uplift.

6. Capacity building

This existing capability will remain important over the period under review, with outcome being that it will provide a level of comfort about border protection in the region through having the capability to:

- build the capability and processes to eventually put in place mutual recognition arrangements with regional customs administrations
- build better border protection in the region to give a higher level of confidence that people of concern and prohibited goods cannot move easily through the region
- address transnational crime in the region
- coordinate regional enforcement activities.

7. Moving beyond overseas liaison to joint activities

This existing capability will remain important over the period under review, and will continue to provide the ability to engage overseas government partner agencies to work with us on a wide range of trade related issues, including supporting mutual recognition endeavours. This capability's general components will include:

- the ability to work together, for example, on intelligence gathering, technological developments and cross supply chain operations
- building relationships for cooperation on matters of shared interest
- providing faster and more direct access to partner foreign agencies' information
- making the Australian border management agency privy to the decision processes of its partner agencies.

8. Rapidly increase intervention rates

Australia's border management agency will need to develop the capability to rapidly move to increased rates of intervention under certain circumstances. In the period under review, this broad capability should be focussed primarily on:

- the ability to respond to pandemics, terrorist attacks or other dramatic changes to domestic or international environment
- the ability to respond to foreign legislative requirements, for example, the requirement for inspection of US bound cargo.

Increased border management capabilities will be offered by improved detection, communication and information management technologies

9. Rapidly redirect intervention

Australia's border management agency will need to develop the capability to rapidly redirect its intervention activity under certain circumstances. In the period under review, this broad capability should be focussed primarily on:

- the ability to shift from predominantly intervening against imports to exports
- the ability to cope with such factors as changing trade patterns, new port and airports and the demands of low cost international carriers
- the ability to address emerging risks or new concerns, such a new drug precursors or consumer safety
- the ability to reorient increased post transaction assurance activity where risks emerge.

10. Rapidly redeploy people and technology

A capability around people and technology needs to be developed to support the responsiveness of Australia's border management agency. Broadly, this capability will comprise:

- ensuring the availability of the appropriate technology, appropriately deployed
- ensuring the availability of the right people, appropriately deployed
- providing infrastructure and support for those people
- considering outsourcing or contracting certain activities
- looking at the possibility of service level arrangements with other agencies also operating at the Australian border.

11. Non intrusive inspection technology

Developing the technological capability to support the interlinked requirements of border management in 2015, including as the workforce composition and availability changes is fundamental to all other capabilities. Generally, this will include:

- the ability to identify early technology with potential and become involved in guiding its development
- the ability to provide adaptable and flexible technology as risks change
- the ability to meet the requirements of other agencies without a border presence to detect certain things
- the ability to support compliance and post transaction assurance activities through such technologies as image libraries
- have as an integral component of technological solutions the ability to support moderated or increased intervention as risks and changing trade patterns require
- as an adjunct to non intrusive inspection technology, develop the capability to have real time access to relevant data (for example, in the current context ICS data) to assist image analysts and others using mobile equipment to better identify inconsistencies or anomalies.

The following capability matrix describes how the eleven broad capability requirements combine to support the operating responses of Australia's border management agency in 2015.

Capability to response matrix

Work ahead of the border to identify and manage risks	Maximise the number of cross border movements where intervention is not required	Focussing on intelligence	Have non intrusive technologies and unobtrusive intervention processes	Be flexible and scalable in our intervention approach	Global partnerships to manage cross border flows	Assisting industry to participate efficiently in international trade	Workforce planning
Mutual recognition (data and processes)	Mutual recognition (data and processes)	Pre arrival/ pre load/pre-departure data reporting	Mutual recognition (data and processes)	Direct access to industry data	Mutual recognition (data and processes)	Mutual recognition (data and processes)	Rapidly increase intervention rates
Pre arrival/ pre load/ pre departure data reporting	Pre arrival/ pre load/ pre departure data reporting	Direct access to industry data	Pre arrival/ pre load/ pre departure data reporting	Direct use of industry processes	Trusted industry partners	Direct access to industry data	Rapidly redirect intervention
Direct access to industry data	Direct access to industry data	Direct use of industry processes	Direct access to industry data	Overseas liaison	Capacity building	Direct use of industry processes	Rapidly redeploy people and technology
Trusted industry partners	Trusted industry partners	Capacity building	Direct use of industry processes	Rapidly redirect intervention	Overseas liaison	Trusted industry partners	
Capacity building	Direct use of industry processes	Overseas liaison	Non intrusive inspection technology	Rapidly redeploy people and technology		Non intrusive inspection technology	
Overseas liaison	Non intrusive inspection technology		Rapidly redeploy people and technology	Non intrusive inspection technology		Overseas liaison	
Rapidly redeploy people and technology							

