

FINAL REPORT

Review of the Integrated Cargo System

Produced for the Australian Customs Service

Canberra

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1 Executive Summary

Booz Allen has conducted a short and forward-focused review of the Integrated Cargo System (ICS) for the Australian Customs Service over a five week period. Over this engagement we have taken input from Customs staff and over 300 companies and individuals involved with Customs in the processing of Imports. This includes importers, customs brokers, freight forwarders, air freight operators, sea freight operators, stevedores, container terminal operators and the software vendors servicing this industry.

Due to the nature of the problems experienced in 2005 with Imports as compared to the relatively smooth implementation of the ICS Exports module in 2004, the review has been focused primarily on the imports supply chain and on the ICS Imports functionality.

The ICS Imports was implemented on 12 October 2005, with some transition problems for air cargo but with severe short-term consequences for the movement of sea cargo. In the first days after implementation, a large proportion of containers were held by Customs on the docks, resulting in delays in imports in the lead-up to Christmas.

Many customs brokers and freight forwarders experienced grave difficulties interacting with Customs through their third-party software and attempted instead to use the ICS through the online Customs Interactive (CI) facility. CI proved difficult to use and very slow under the additional load, further exacerbating user frustration with the system. These difficulties were not general, some operators had relatively minor issues, but the problems were widespread.

By mid December 2005, the backlog of containers had been cleared but residual frustrations remained. Many of the issues for sea cargo at this time relate to the high level of data quality required by the system relative to the legacy systems, while industry practices had not adapted to provide this level of quality. The resulting data mismatches leads to Customs holding cargo and a high level of manual intervention to keep trade moving.

The cost of the project from 1999 projected to June 2006 is \$205m. Whilst we understand that until 2004 the project had been budgeted for on a year by year basis, we have been unable to identify a budget that Customs had developed for the overall project at its inception.

We have found that the problems over the implementation period were largely related to sea cargo imports, whereas air cargo was relatively unaffected. The root causes of the problems were:

- ▶ Inadequate end-to-end testing of the system – testing with live data would have highlighted many of the issues that manifested when the system went live;
- ▶ Quality problems with third-party software – many users experienced problems that were not ICS-related but rather were problems in the software they use to communicate with Customs. These software providers in turn had difficulty in developing, testing and rolling out software in time to meet short deadlines imposed by frequent Customs fixes. . We note however, that

immediately prior to 12 October, major software vendors had represented to Customs that they were ready and had completed all testing and quality reviews. In the absence of any formal quality control, Customs has no means of validating these claims;

- ▶ A lack of staged implementation – the “big bang” implementation provided no realistic fall-back when problems existed and no way of ensuring that the total end-to-end importation supply chain process worked correctly before widespread implementation;
- ▶ Inadequate training in the new system – many organisations were not able to train in the combined new environment of their third-party software and the ICS. This meant that these organisations were not sufficiently prepared and had not adapted their own internal processes to the requirements of the new system.

The implementation occurred more smoothly in the air cargo industry relative to the sea cargo environment, primarily due to the existence of well established data conventions in the air cargo industry and an earlier and more pro-active engagement with Customs by air cargo operators in relation to the changes required to their own systems.

We have assessed the delivery of the ICS against its original objectives, outlined in the March 1997 Cargo Management Strategy. These objectives of the strategy were visionary, yet very general and poorly defined. Insofar as they can be quantified, these objectives have been only partially achieved to date. In the key outcomes of trade facilitation and improved border protection, we have seen no quantifiable improvement in Customs’ performance to date attributable to the introduction of the system.

The ICS is now a stable system, is showing good functionality and is performing reliably. The ICS offers substantial benefits over the legacy systems it replaces. It is integrated, well structured, it is based on high integrity data architecture and is highly configurable. In these respects, the ICS is among the better examples of Customs systems available among the developed nations. We believe that the integrated nature of the system and its modern architecture represents a sound base on which Customs can base further improvements.

We have provided a series of “lessons learnt” for future ICS releases that will prevent the issues of October 2005 reoccurring, as well as a set of recommendations for how Customs can leverage the foundation of the ICS to make improvements in the imports supply chain. The recommendations are broken into:

- ▶ Establishment of a sound governance base for the overall program of work, including clear business ownership;
- ▶ Continuation for a limited period of the industry-driven tactical remediation program for the ICS. This is being effective in removing residual deficiencies;
- ▶ A strategically focused program to exploit the ICS and improve the efficiency and effectiveness of Customs and the imports processes used across the

industry. This will require a clear set of objectives, strong accountabilities and a high level of engagement with the industry. This program includes:

- More consistent national approaches to cargo management, compliance and border protection;
- A definition of a clear set of outcomes for improvements in trade facilitation and border protection;
- Adoption of global best practices to achieve the performance improvement required.

We believe that although Australian Customs is a well-performing organisation today in world terms and has done much in implementing the ICS to position itself for the future, there remain opportunities for further operational improvement that could benefit both the government and importers.

2 Introduction and Terms of Reference

In 1996 Customs embarked on an ambitious and far-reaching review of cargo management in its Cargo Management Strategy. This evolved into a strategy of closer workings with the industry, supported by a program of legislative reform, an organisational restructure and a planned overhaul of Customs' IT systems. By 2000, the strategy had evolved into the Cargo Management Reengineering (CMR) project, with the intention to review the processes and systems that support cargo movements into and out of Australia. This was also to provide a single, integrated face of government for the cargo management industry. A key plank of the CMR was the development of new systems (the Integrated Cargo Management System or ICS), integrated risk management, increased use of self-assessed shipments and an approach to accrediting low-risk and highly compliant clients – the Accredited Client Program. Accredited clients were to receive facilitated handling and improved payment terms in exchange for a rigorous approach to risk management and compliance procedures.

Up until 2000, the main focus of the Cargo Management Strategy and CMR was the rationalisation of the complex import/export environment and the facilitation of trade movements. Fundamental to this approach was the use of a managed-risk approach, making decisions on where Customs' resources would be spent to ensure good revenue compliance, facilitated trade flows and good security. This was heavily impacted by the attack on the World Trade Centre in New York on September 11, 2001. After this date, a greatly increased emphasis was placed on border protection, with a move from a risk-managed approach to a tighter control regime, with a consequential shift in the focus of CMR.

The ICS was always a key plank of the CMR and the means by which the new processes would be implemented. EDS, as Customs' outsourced IT partner, started work on the system in late 1997 but were removed from the project in October 2001. In February 2002, a consortium led by Computer Associates was awarded the tender to build the new system. In parallel, IBM was appointed to develop the Customs Connect Facility (CCF), as an Internet gateway to provide secure access to the ICS.

In August 2004, the Exports functionality was implemented reasonably successfully. In the ICS, the volume of export messages is low relative to imports and the complexities are fewer. The industry adapted to the system with little trouble.

On 12 October 2005, the Imports functionality of the ICS was implemented. Almost immediately this caused disruption in the nation's ports – cargo was delayed and containers piled up on wharves causing delays in delivery. Not all importers or cargo managers were impacted equally, but overall the impacts were severe for several weeks.

The final cost (projected to June 2006) of the project was \$205m. This includes internal and external costs, capital and expense from the financial year 1999/00. This includes delivery of the ICS and CCF, as well as costs associated with the specification and implementation of these systems.

2.1 Terms of Reference

Customs has commissioned this review to understand the causes of the problems in October 2005, but more particularly to understand the lessons learnt to incorporate into future ICS releases. In conducting this review, Booz Allen has worked to the following terms of reference:

- ▶ Determine how progress against the realisation of benefits for business and government is being made (including the measurement of those benefits);
- ▶ Assess the performance and effectiveness of the system and associated business processes (specifically in relation to the robustness of the present system and its support of business requirements):
 - Where there are shortfalls, identify what needs to be undertaken to address them, including to deliver any unrealised benefits for government or industry;
- ▶ Determine the potential for additional benefits for government or industry;
- ▶ Assess the ongoing governance and decision-making structure of the ICS for enhancements and change management:
 - Strengths or weakness in the procedures and processes now employed to manage the ICS, including user/stakeholder liaison should be identified.

In addition, the following specific outcomes were requested:

- ▶ Consult a broad range of organisations associated with the implementation and future development of the ICS, including industry third-party software providers, carriers, stevedores, cargo terminal operators, brokers and freight forwarders;
- ▶ Examine the impact of the ICS on the import and export supply chain and business process;
- ▶ Identify the lessons to be learned for future management and development of the ICS and for future projects.

In conducting the review, we have placed the greatest emphasis on understanding the issues and potential of the Imports functionality of the ICS. Exports has been implemented for over 12 months and has given little problems relative to the substantial disruptions associated with Imports.

2.2 Booz Allen's Approach to the Review

Booz Allen has approached this review using a structured process and with a tightly integrated program of stakeholder engagement at three levels:

- ▶ Internal Customs' stakeholders;
- ▶ Industry stakeholders through detailed interviews and site visits;
- ▶ Industry stakeholders using broad-based engagement through a web-based survey, email and mail submissions and public meetings in Melbourne, Sydney, Brisbane and Perth.

The industry stakeholders consulted in the detailed interviews are listed in Appendix 1 and were drawn from industry peak bodies, customs brokers, freight forwarders, importers, stevedores, terminal operators and ocean and air carriers. The broad-based industry engagement took input from over 300 companies and individuals.

3 Background to the ICS

3.1 The History of the Cargo Management Strategy and the Integrated Cargo System

The ICS has a long history, originating in the Cargo Management Strategy (CMS) of 1996 (see Figure 1).

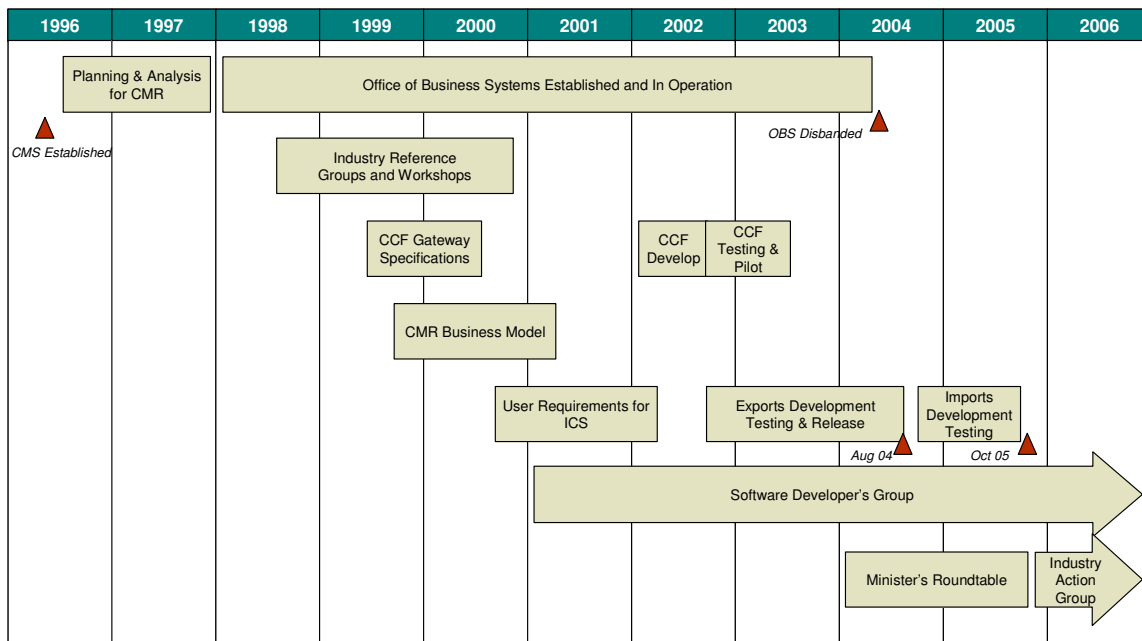


Figure 1 – History of the ICS

In 1995-96, trade volumes were increasing at an average rate of 3-4% per annum and improvements in international supply chains provoked a review within Customs of the effectiveness and efficiency of import and export processes. The review included consultation with a wide number of stakeholders from both public and private sectors and resulted in the release of a document entitled “The Cargo Management Strategy” in April 1996.

The Cargo Management Strategy outlined three major strategic directions:

- ▶ Closer links with clients;
- ▶ Greater cooperation and coordination amongst government agencies; and
- ▶ An integrated cargo system.

Another major conclusion of the study was that Customs needed to re-engineer its cargo management processes. The proposed re-engineering was to facilitate cargo movements and would include greater integration of government interactions for the export and import communities.

In March 1998 a new organisation was established within Customs to undertake a review of existing business systems and processes. This new organisation was entitled “The Division of Office of Business Systems”, (OBS) and took an overall program management role to maintain close liaison with all internal and external stakeholders.

Within government, liaison with other agencies was achieved through the Higher Level Reference Group. External to government, an Industry Reference Group was also established, comprised of the senior executives of companies involved in the import or export of cargo.

The CMR program focused on establishing change on a number of fronts:

- ▶ New business processes to enable a dramatic performance improvement;
- ▶ Legislative changes to modernise the way Customs manages the movement of cargo into and out of Australia;
- ▶ An integrated information technology system now known as the ICS.

Customs had been a long standing user of EDI-based solutions for interacting with industry counterparts. Since the late 1990s, the Australian government has actively pursued the goal of increased use of Internet-based online channels. Customs had previously implemented a number of stand-alone solutions to provide electronic transaction capability to importers and exporters, but these were limited by the lack of integration between different functions. The ICS was envisioned to be an end-to-end solution that facilitated an overall increase in efficiency and effectiveness of import and export business processes. In order to provide a common focal point, the CMR project released a business model description in March of 2000.

Up to this point, the development of the ICS specifications had been tied very closely to the CMR project. Industry had been engaged in various forums and had submitted suggestions for alternative business models. A large number of industry representatives were involved in helping Customs understand the nature of the import and export business. In addition, Customs engaged with the third-party software industry through the Software Developers Forum, the purpose of which was to ensure a close cooperation and understanding of specifications for communications between the ICS and other software. In addition, an ICS User Representative was funded by Customs (although recovered through cost recovery charges). This user representative was external to Customs and had a role of providing an interface between users and Customs in relation to the project.

Following the events of 11 September 2001, there was a distinct change in the CMR project, in the form of an increased focus on border protection. Industry representatives experienced this as a swing back from the initial CMR goal of “trade facilitation” to the role of Customs as a regulator. This was consistent with a heightened emphasis on border security worldwide.

The CMR application portfolio is made up of the core processing system (ICS) and the secure Internet gateway (CCF). The structure of these applications is described further in Section 5.1. Technical communication with external companies is conducted mainly through electronic messaging based on the EDIFACT¹ standards between the ICS and third-party software used by importers, exporters, customs brokers, stevedores and freight forwarders. Different organisations use different software, resulting in around

¹ EDIFACT stands for ‘Electronic Data Interchange for Administration, Commerce and Transport’. EDIFACT is the International EDI standard introduced by the United Nations Economic Commission.

40 packages that communicate with the ICS. These packages communicate over the Internet or via dedicated lines to the CCF and thereby to the ICS. In addition to the electronic messaging, it is possible to use the ICS directly through Customs Interactive (CI), a web-based user interface.

The CCF module went live in April of 2003. However, both the Exports and Imports modules were dogged by a series of postponements and delays. Exports was initially planned to go-live in September of 2002 but was eventually implemented nearly two years later in October 2004. Imports was initially scheduled to go-live in April 2003 but was eventually implemented two and a half years later in October 2005. Feedback from the industry indicates that the Exports model introduction was relatively incident free compared to the events triggered by the Imports go-live in October 2005.

3.2 The Implementation of Imports

In July 2005, the decision was made during a Minister's Roundtable to implement the Imports functionality on 12 October, subject to Customs addressing some major issues with the software at that time. ICS Imports was available from 19 July 2005, albeit with outstanding defects, with a three-month transition period until 12 October. Customs continued to introduce changes to the software up until 6 October, only one week prior to the go-live date. This required software vendors to complete their corresponding changes, conduct their final testing and release their software to their customers in a very short period of time. In some cases, this resulted in the customers of some software vendors receiving their updates for the launch of ICS Imports after 12 October.

In the days following the 12 October release, major issues quickly became evident:

- ▶ For sea freight, data integrity issues were preventing data matching between cargo manifests and Customs declarations. While these issues were not new and Customs has previously communicated the data matching and cascade reporting requirements, the ICS required a far higher standard of data accuracy than the Compile and Sea Cargo Automation systems it replaced, resulting in mismatched cargo being held;
- ▶ Many companies were using software that failed to work correctly, resulting in incorrect information being transferred and/or viewed. This made it very difficult for many companies interacting with Customs to function correctly;
- ▶ Problems with some third-party software forced many companies to attempt to use the ICS directly through Customs Interactive. This showed very poor usability and very slow performance based on the unexpected number of companies attempting to use it and based on the fact that Customs Interactive was not designed to accommodate a large number of users;
- ▶ Incorrect data matching as well as profiling of sea containers resulting in a large number of containers being held as high risk in the first few days after implementation;
- ▶ Industry responded to these problems with calls to the Customs Help Desk. The Help Desk was overwhelmed by this additional traffic and was unable to handle the volume, resulting in many calls being unanswered.

Within days of going live in October 2005, a significant back-up of containers had occurred at Australian ports and a backlash ensued in the press. Pressure was applied through the Minister to resolve the matter. The Minister proceeded to conduct a number of roundtable discussions with Industry to find solutions to the problems. A log of problems was established and priorities assigned within the ICS support group to resolve those issues. A number of quick fixes were implemented and towards the end of November 2005 throughput through container terminals started to return to normal.

It should be noted that while a crisis was occurring in Australian ports, air freight had relatively fewer problems and some importing organisations using air cargo suffered relatively little impact around this time. This appears to relate to the established data conventions in the air cargo industry. Operators in the air cargo industry were also more proactive in engaging early with Customs in relation to the required software changes.

Following the complications of the October 2005 Imports go-live, a number of forums have been working hard to resolve issues. The Industry Action Group (IAG) has been meeting regularly to identify and prioritise fixes to the existing ICS. Feedback from industry indicates that in January and February little progress was made but that by March momentum had been built in resolving outstanding issues. The IAG is continuing to meet, and since go-live a number of fixes have been successfully implemented (e.g., an improved diagnostics capability and relaxed matching rules on ocean bills of lading between cargo reports and import declarations).



The events to date have left Industry angry and disappointed. Within Customs, many users have also expressed their frustration with a new system that offered greatly enhanced functionality and significant potential, but which has had a high level of early problems.

4 The Achievement of the ICS' Planned Outcomes















4.1 Progress Against Planned Outcomes

In conducting this review we have been unable to locate a clear and quantified set of outcomes and benefits expected from the introduction of the ICS. However, from 1997 onwards, a number of consistent high-level objectives have been stated for the CMR project². These are summarised in Table 1. For each objective we have provided an assessment of how the ICS (in March 2006) has performed against those expectations.

Table 1 – Objectives of the CMR/ICS Implementation

Objective	Rating (see legend)	Comments
Introduce new cargo management processes and systems to greatly improve the effective delivery of services to government, industry and community		<p>Service effectiveness, as measured by efficient movement of cargo, is greater for some parts of industry (principally integrated air freight operators), and the same or less efficient for the remainder.</p> <p>Some of the introduced functionality changes have been the cause of severe disruptions (e.g., matching of data on Ocean Bill of Lading) and has resulted in manual work-arounds and reduced process efficiency. Industry involved in the clearance of sea cargo has reported an increase in labour in order to meet new process standards.</p> <p>More data is captured by the ICS and while this has caused some issues, it also represents the potential for improved risk management and cargo control.</p> <p>The raising of the self-assessment limit from \$250 to \$1,000 has removed considerable effort for Customs and importers over small transactions.</p>
Support an effective Risk Management Strategy based on exception intervention in relation to revenue and community protection		<p>Effective Risk Management is enabled by effective profiling, effective application of information provided by profiles, and accurate reporting to provide feedback on effectiveness of the process as a whole.</p> <p>The profiling mechanism whilst being a powerful capability, is currently not meeting expectations due to some factors:</p> <ul style="list-style-type: none"> ▶ The profiling engine is not currently “tuned” to be effective. The effect of this is to provide “overmatching” and incorrect matches in addition to correct matches. Sorting the “wheat” from the “chaff” is proving to be a challenge ▶ The data provided by various industry sources in key matching fields is not consistently of good standard. This creates challenges for the profiling functionality <p>The inability to develop a full range of reports on profile effectiveness since October 2005 has also masked the true impact of the above problems. This has potentially hampered the ability of the function to learn and drive improvement.</p>







² Australian Customs Service, Cargo Management Strategy, March 1997

Objective	Rating (see legend)	Comments
Expedite cargo movements by developing flexible arrangements, based on assessed risk, and introduce a regime of "early report early status" in which import cargo is reported prior to arrival and cleared promptly	Sea cargo  Air cargo 	Measurements of the intervals between sea cargo reporting and cargo clearance currently indicate that performance is very similar to performance pre-October 2005. Air cargo tends to use international data standards and also is mostly managed by integrated logistics companies. This results in a lower exposure to the risk of multiple data sources supplying inconsistent data for the same field. This makes air freight less susceptible to the data matching problem that has dogged Sea Freight through the OBL.
Maintain revenue levels without disruption		Revenue collection showed that revenue levels were maintained.
Provide trade statistics and other trade reporting matters		The Australian Bureau of Statistics (ABS) now receives more detailed information on trade.
Align with the "single window to government" philosophy and other strategies like the "Government Online Strategy"		The ICS has successfully integrated the interactions from industry to the Australian Quarantine and Inspection Service (AQIS), Australian Bureau of Standards (ABS) and the Australian Tax Office (ATO). Links with DITR, DOTARS and some others are being managed and will be enhanced as required with those agencies.
Improve IT supportability and flexibility by modernising the platform		The ICS has been built on a more modern platform and has effectively removed the risks presented by the previous Unisys system, which had reached the end of its supportable life.
Establish a scheme of accredited importers and exporters with a "premium" service level from Customs		A revised version of the accredited client scheme as discussed in 1997 is currently before Parliament for approval. If approved, this could be in operation by early 2007.
Internal alignment of Customs functions		The CMR and ICS projects have provided an excellent platform for internal process alignment and improvement. Customs reorganised in 2002 to align Commercial and Border Protection functions. This has delivered some benefits, but further alignment of internal functions remains necessary (e.g., reducing the impact of functional silos, improving communication and broadening involvement).
Improved control of cargo – increase visibility and ability to manage movements		Visibility is improved, but some problems exist with processing of under-bond movements and part shipments.
Legend:		
	No benefit achieved	
	Some slight evidence of benefits	 A clear benefit, which may not be large
	Partially achieved the objective	 A clear and substantial benefit achieved

4.2 Delivery of Planned Benefits

While there is no detailed benefits realisation plan for CMR or the ICS, a number of benefits were expected from the 1997 Cargo Management Strategy. Progress against these is assessed in Table 2, however, as the planned benefits were not quantified we have used a heuristic scale to measure their achievement.

Table 2 – Expected Benefits from the ICS

Benefit	Achievement (see legend)	Comments
Benefits for Industry		
Greater flexibility in reporting information to Customs		<p>Industry feels that reporting is very similar to the previous system, except more data is required and due to various problems, the new system is more cumbersome. Cargo reporting behaviour is very similar to pre-ICS days (~20% of air cargo and ~30% of the sea cargo is reported late).</p> <p>The adoption of Internet-based access and the removal of the need for expensive EDI gateways will provide lower access costs.</p>
More streamlined and simplified dealings with Customs	<p>Integrated companies</p>  <p>Non-integrated companies</p> 	<p>Benefits include:</p> <ul style="list-style-type: none"> ▶ Raising of self-assessment limit from \$250 to \$1,000 ▶ Clearance is now initiated by the impending arrival notice, enabling earlier cargo release ▶ Community protection profiles are now transparent to Industry ▶ Multiple suppliers within one house-bill no longer require multiple declarations – some customs brokers report that they save \$70 per declaration ▶ The system performance in responding to messages is faster and more consistent than the old Compile system <p>The high standard of data required for matching sea cargo reports with declarations has proved problematic for Industry, especially given that poor quality data often impacts other parties in the interaction other than the data provider. This has required manual intervention by Customs to ensure the required level of matching is achieved.</p>
A reduction in the costs of meeting regulatory obligations		<ul style="list-style-type: none"> ▶ The removal of Tradegate as an intermediary in the value chain has reduced costs ▶ The ability to include multiple suppliers on a single declaration has reduced costs ▶ The matching functionality between declarations and cargo reports has been causing complications for some customs brokers ▶ Industry reports that this has resulted in an increase in labour requirements with a matching increase in costs
Increased predictability in cargo logistics and control		<ul style="list-style-type: none"> ▶ Visibility of cargo status has been improved with the recent implementation of improved diagnostics tools ▶ However, status reporting has been confused due to the fact that different stakeholders, such as importers and stevedores, can see a different status of the same item due to different refresh rates of their respective third-party software
Easier interactions with government using Customs as the “single window” to government for importing and exporting		<p>This has largely been achieved, however some industry parties still have internal processes that do not take advantage of this. For example, some companies have separate teams for AQIS and Customs processes, while the Customs and quarantine processes are integrated in the new system.</p>













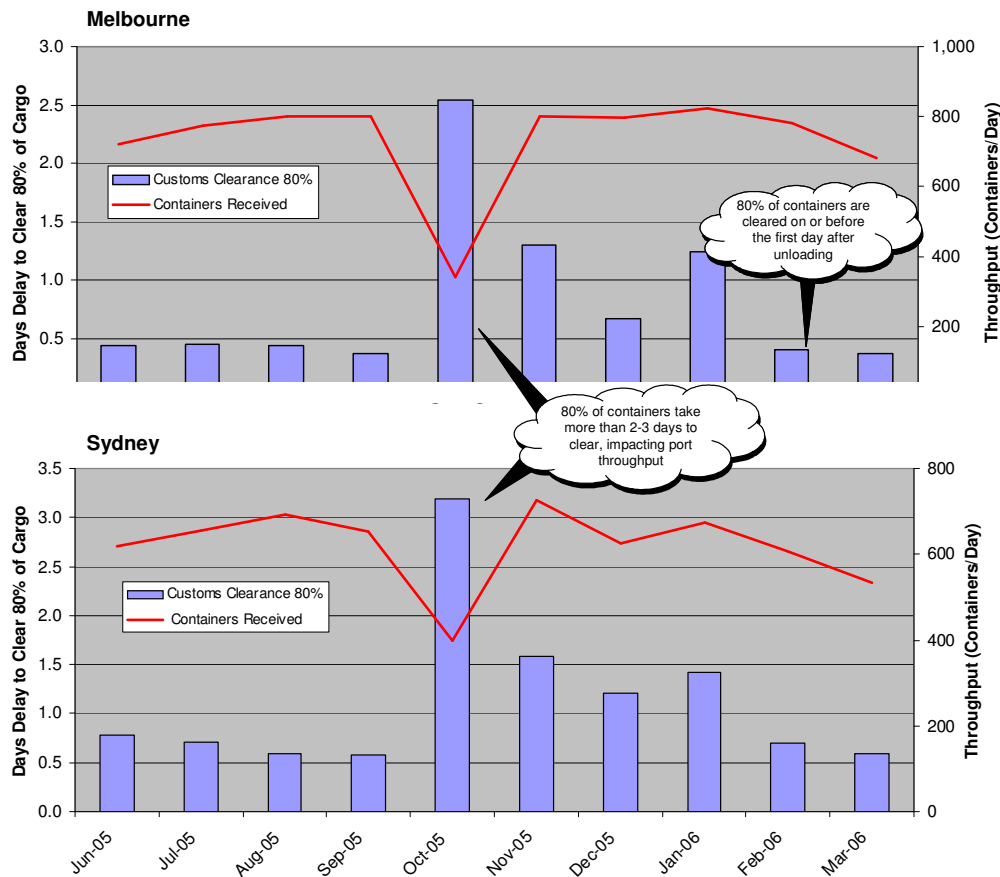
Benefit	Achievement (see legend)	Comments	
Ease of use		<ul style="list-style-type: none"> ▶ The new system requires greater standards of data accuracy that many companies have found difficult to meet ▶ Use of the Customs Interactive facility takes considerably longer than the same process under the legacy system ▶ The process to gain digital certificates is onerous. Many small companies use family trust structures that are not allowed under the certificate issuance rules 	
Benefits for Customs and Government			
Improved data quality, integrity and timeliness		<p>The ICS requires a much higher standard of data quality than the systems it replaces. The data quality should therefore improve over time. However, the poor quality of data currently in the system is the result of combining four legacy systems and data therefore requires extensive "cleaning". For example, ICS reference data includes ~1,200 spellings of a major retailer's name.</p> <p>The majority of the Corporate Research Environment (CRE) reports are currently not functional.</p> <p>The high data integrity standards required for matching Ocean Bill of Lading (OBL) have not been able to be met by many companies, creating problems in gaining clearances for sea cargo.</p>	
Improved knowledge and understanding of clients		The Customer Research Environment has substantial potential as a single source of client data. This potential is currently not being realised due to low data quality (see above).	
Improved targeting and profiling capabilities		Effective risk management is enabled by effective profiling, effective application of information provided by profiles, and accurate reporting to provide feedback on effectiveness of the process as a whole. Problems in these three areas are covered in detail under "Risk Management" in the previous table.	
Flexibility to potentially allow for new and different linkages with other government agencies		The ICS provides an integrated point from which to incorporate interactions with other agencies. At present this is in place for the AQIS, ATO and ABS and can be enhanced for other agencies when needed.	
Cost efficiencies		No noticeable decline in costs has taken place yet. No benefits realisation plan exists to ensure capitalisation on cost efficiencies. Also, no specific cost savings have been targeted or reported against.	
Replacement of non-supported technologies		The legacy systems replaced by the ICS operated on a Unisys mainframe for which support would not have been available from March 2006.	
Legend:			
	No benefit achieved		A clear benefit, which may not be large
	Some slight evidence of benefits		A clear and substantial benefit achieved
	Partially achieved the objective		

Figure 2 shows the rate of container movements through Australian ports from June 2005 to March 2006. These charts show that Customs processing is reasonably efficient, with 80% of containers cleared by Customs either before arrival or on the day of arrival. They also show the impact of the ICS implementation slowing container

movements. They do not, however, demonstrate any clear improvement in efficiency caused by the ICS, as measured by faster processing or increased port throughput.

Figure 2 – Sea Container Customs Clearance Rates Melbourne and Sydney



Source: Patrick container movement data, Booz Allen Hamilton analysis

Note: "Customs Clearance" is a proxy measure, determined here by the time that the cargo record was last modified by Customs and effectively "cleared", with no further Customs activity. Customs does not formally clear cargo until all payments are made, generally 1-3 days later.

4.3 Conclusion

Overall, the ICS has delivered some benefits to Customs and industry (following the period of instability from October-November 2005). However, these have not been substantial. Many of the "improved" business processes implemented by the ICS such as cascade reporting for sea cargo, have exceeded industry's current capability. This has caused difficulties and stress within part of the sea cargo industry. In air freight where data reporting and processes are more mature and standardised, implementation has caused fewer interruptions with more benefits being realised.

The greatest benefits relate to the much higher quality of data that the ICS holds (which itself has caused problems for industry), as well as the integrated nature of the system.











We discuss the potential for the ICS to deliver greater benefits in the future in Section 9.

5 Technical Assessment of the ICS and Associated Systems

To determine whether the ICS is a sound and flexible platform for future improvements, we have conducted a high-level assessment of its architecture, performance, functionality and support processes.

Table 3 provides a summary of the results of the system assessment.

Table 3 – Summary of System Assessment Results

Assessment Component	Overall Result (see legend)	Comments
Architecture		Overall application and technical architecture is sound
Technical Quality		After resolution of the problems in October-November 2005, current technical quality is good
Performance		System performance has stabilised and is meeting service level targets
Functionality		Except for profiles, functionality is working largely as designed
Supporting Processes (including testing, incident management, etc.)		Supporting processes are not operating to a high level of maturity and can be improved
Legend:		
	Very poor quality, no formal processes at all	 Operating at a moderate level, considerable room for improvement
	Very low quality or level of process maturity	 Operating at a reasonable level, but with room for improvement
		 Meeting all expectations, operating at a high level

Following a period of major disruption and a number of software quality problems both within the ICS and third-party software, the ICS now appears to have stabilised and is performing reasonably to the expected service levels.

5.1 Overview of the CMR System Architecture

The CMR application architecture (used here to refer to the ICS and any associated systems) is shown in Figure 3 and consists of the core system, the ICS, made up of four major modules:

- ▶ Imports – manages cargo import functionality;
- ▶ Exports – manages exports functionality;
- ▶ Client – a single view of clients (any external stakeholder the systems interact with) across both Imports and Exports;
- ▶ The Customs Risk Assessment (CRA) – a repository providing information for risk assessment on any message entering the system.

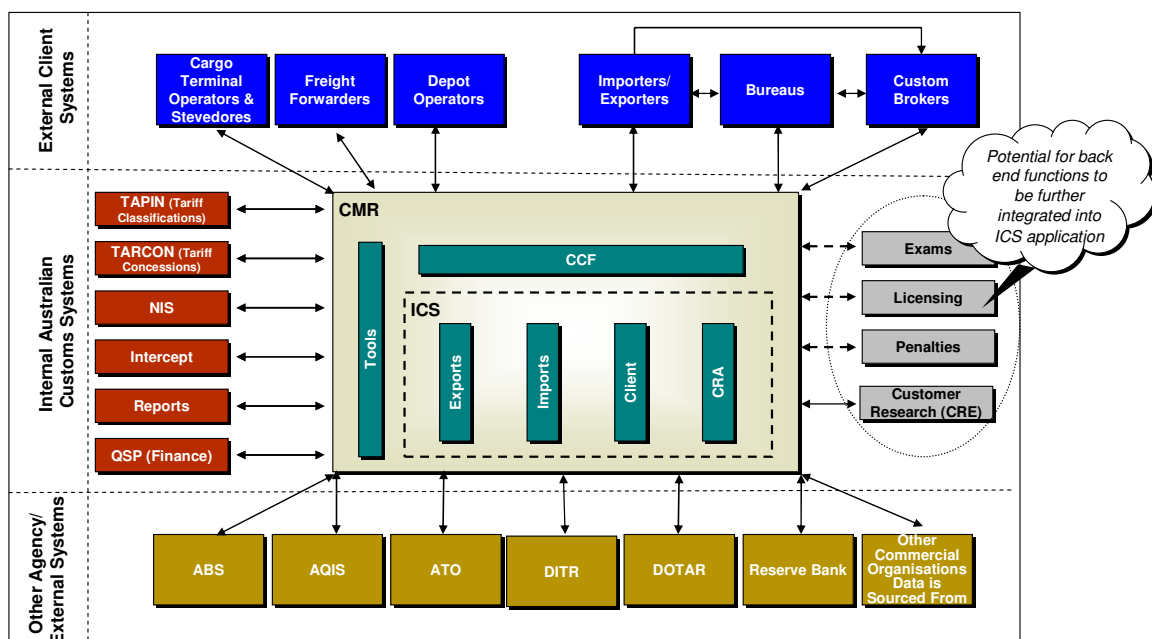
The ICS interacts with Customs staff and external organisations through the Customs Connect Facility (CCF). Communication is principally through third-party software packages used by brokers, freight forwarders, port operators and importers by means of EDI messages using the EDIFACT standard. It is also possible to use the system directly online using Customs Interactive (CI).

The system interfaces with a variety of other Customs systems such as finance. Some other systems are not integrated including:

- ▶ Exams – database for recording examination information for all non-passenger examinations;
- ▶ Licensing – web-based system to process renewals and cancellations of warehouse, depot and broker licences;
- ▶ Penalties – used by compliance officers to record non-compliance instances.

There are online interfaces with external agencies including ABS, ATO and AQIS to allow all the necessary interactions required for Customs and quarantine clearances.

Figure 3 – CMR Application Architecture and Interfaces



Source: Australian Customs IT documentation and Booz Allen interviews

Based on our high-level assessment, the system is modularised and reasonably well structured. It has integrated the functions of several legacy systems such as Compile, Exports, Sea Cargo Reporting, Air Cargo Reporting and multiple Risk Assessment applications. The system makes extensive use of rules and status flags to track and manage the status of cargo.

The Cargo Risk Assessment makes use of a rules engine and proprietary text matching software (“SSA-Name” produced by Identity Systems) to identify patterns of risk or identify subjects of interest. All messages coming into the system can potentially be

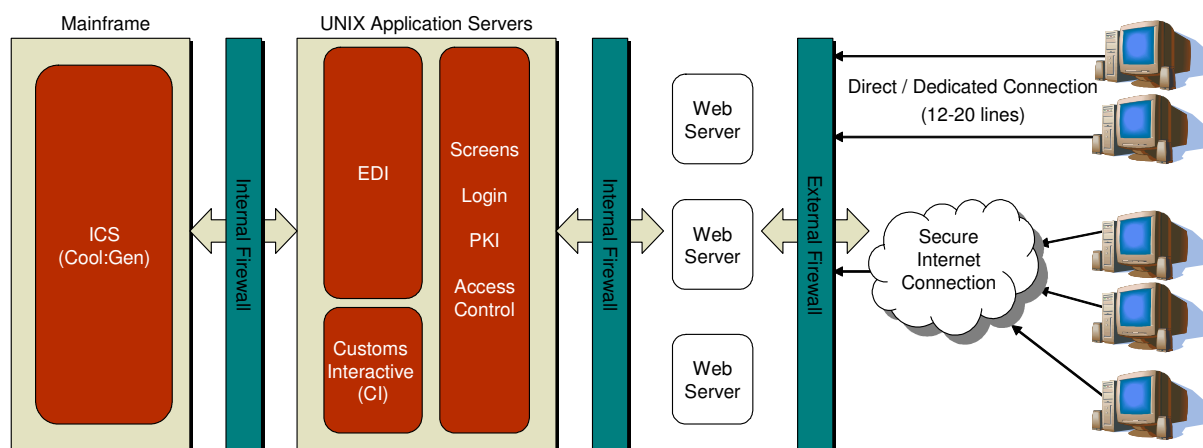
screened against any number of criteria for risk factors. These include quarantine factors, community protection and security concerns.

5.2 CMR's Technical Architecture

CMR utilises a conventional Internet-facing architecture using web servers and gateway services to control access. Once connected, the external organisation interacts through an EDI messaging service or web screens to access the ICS itself. Access controls, EDI messaging and web screens are provided through CCF. External parties can access CCF through the Internet or by means of dedicated lines for higher performance with large volumes. Access security is provided by means of Public Key Infrastructure, with digital certificates issued through Verisign.

A high-level representation of CMR's technical architecture is shown in Figure 4.

Figure 4 – CMR's Technical Architecture



Source: Australian Customs IT documentation and Booz Allen Hamilton interviews

Overall, the CMR application and technical architecture is a considerable improvement over the legacy systems it replaced in the following ways:

- ▶ Imports, Exports, Clients and Risk Assessment modules are now integrated – in the old system these modules existed as separate applications. This provides for an integrated process of cargo management, allowing for more integrated workflow;
- ▶ The system integrates the interactions required with AQIS and the ATO, allowing all information to be provided in one place;
- ▶ The same risk assessment module is now shared amongst Imports, Exports and Cargo Reporting whereas in the old system, separate Risk Assessments modules were used for Imports, Exports and Cargo Reporting. Using a common Risk Assessment module will ensure consistency across the modules and improved risk controls;
- ▶ Clients can now access Customs functionality via the Internet, replacing the need for expensive EDI gateways and dedicated data communications lines.

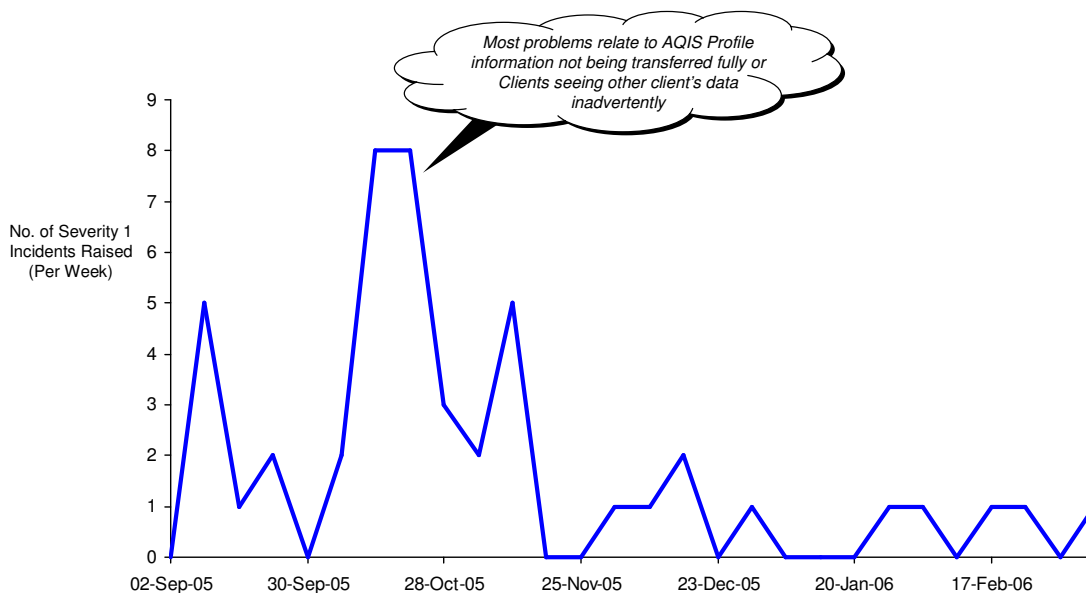
This gives clients greater flexibility in choosing their communications solutions to access Custom's systems;

- ▶ The introduction of digital certificates provides greater security. For certificates issued for a company, there is a restriction that the systems can only be accessed from a computer that holds the digital certificate. This means that although there is greater flexibility in accessing the systems using the Internet, companies can access them only from one computer.

5.3 Technical Quality

The ICS experienced a very high number of technical and functional issues in the first months of its operation. This has now stabilised and the system's quality appears reasonable (see Figure 5). The significant level of problems experienced in the first weeks of implementation can be traced back to inadequate testing of the system, as well as problems with the usability of Customs Interactive.

Figure 5 – No. of System Problems Raised (Sept 05 to March 06)



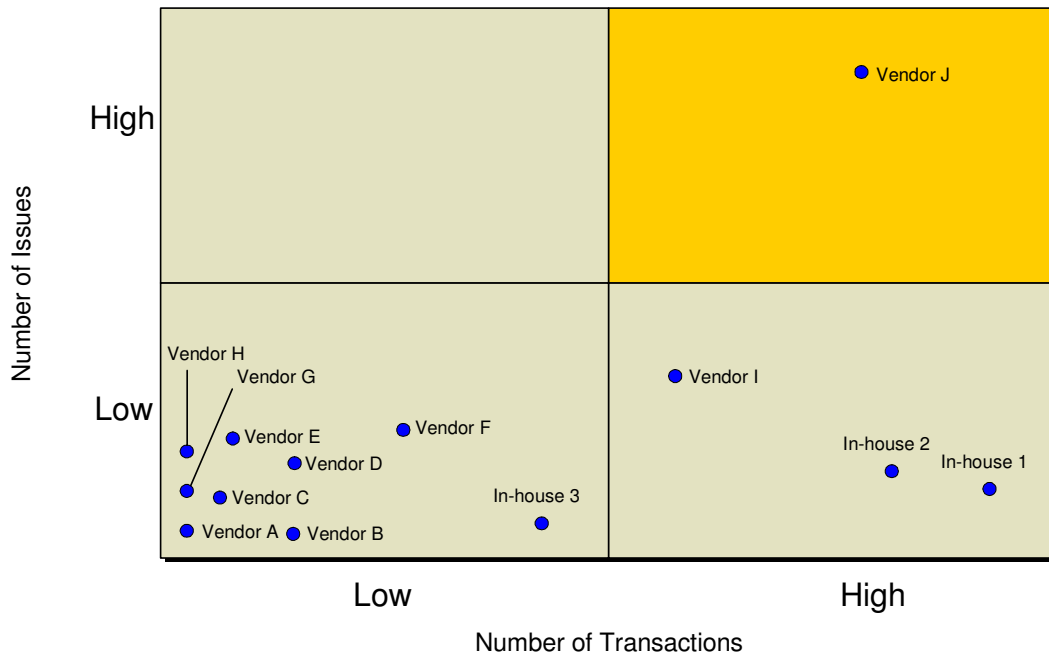
Note: CMR related Severity 1 incidents over the period of September 2005 to March 2006

Source: Customs Service Desk Incident Log Extracts, Australian Customs Management Interviews, Booz Allen Hamilton analysis

In addition to the problems with the ICS itself, a large number of problems appeared to relate to third-party software. In these circumstances the information available to the user of the software was different to that visible directly within the ICS. Analysis of problems reported by users of different third-party software demonstrates a high level of variation in the level of problems associated with different products (see Figure 6). We attribute this to wide variation in levels of testing and quality in the third-party software interacting with the ICS. This is borne out by interviews where users who suffered the worst experience were consistently also users of software with high levels of problems reported.

We note that immediately prior to 12 October, major software vendors represented to Customs that they were ready and had completed all testing and quality reviews. In the absence of any formal quality control, Customs has no means of validating these claims.

Figure 6 – Levels of Problems Associated with Third-Party Software



(1) Sample size is approx. 50% of all help desk calls logged from Sep 05 to Jan 06

(2) Transactions defined as the total number of inbound and outbound EDI messages

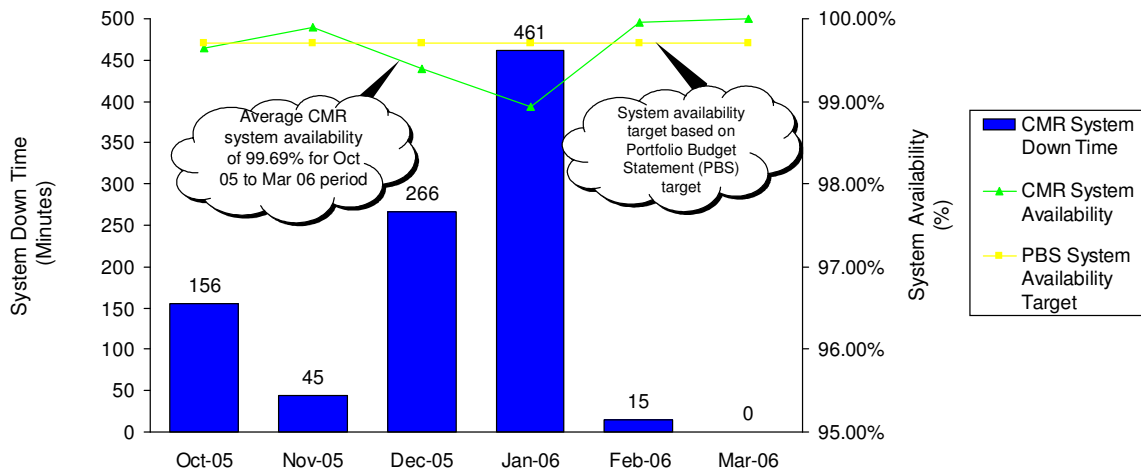
Source: Customs Service Desk Incident Log Extracts, CMR Production Data Extracts, Australian Customs Management Interviews, Booz Allen Hamilton analysis

We have assessed the level of availability provided by the ICS, related to the technical quality of the system. Figure 7 demonstrates that the ICS is now showing high levels of availability and is exceeding its expected availability standard.

We conclude that, after a period of several months characterised by frequent and significant system problems, the ICS has now stabilised and is no longer experiencing major quality problems.

In Section 6.2 we examine the deficiencies of testing prior to implementation that lie at the root cause of these quality issues. We also examine what measures were taken to test third-party software with the ICS and the causes of the variation in the quality across the many software suppliers.

Figure 7 – ICS Availability



(1) System availability is calculated based on planned uptime; this excludes planned system outages (for system maintenance) of approximately 4 hours per week

(2) Data for March is as at 24 March 2006

(3) PBS target refers to Portfolio Budget Statement targets. PBS availability targets are currently based on legacy systems and should be updated to reflect target levels for the new systems

Source: Australian Customs IT Interviews, CMR Production Data Extracts, Booz Allen Hamilton analysis

5.4 Performance

Figure 8 shows the response times for an EDI message for the ICS/CCF, relative to the legacy systems they replace and the expected performance standard.

This shows that immediately following implementation, the ICS suffered from dramatic system slow-downs that severely impacted users' ability to interact with the system. Since November 2005, performance has improved greatly and is now substantially better than the legacy systems.

The very slow processing that has been commented on by many industry parties was partially due to the ICS itself, but was also caused by the problems with third-party software products that forced many users to attempt to use Customs Interactive. This proved difficult to use and very slow, particularly under the unexpected traffic loads that were being placed upon it.

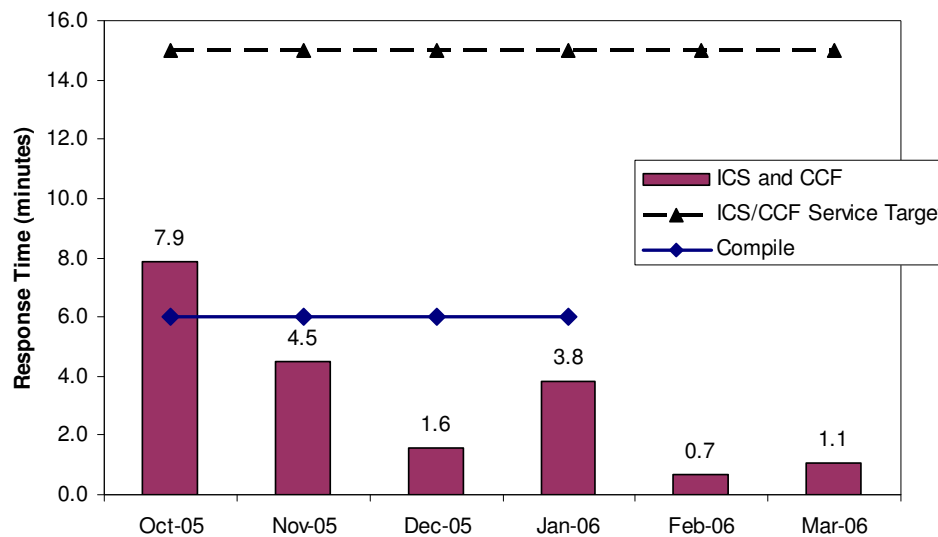
The principal cause of slow performance by the ICS in October was an unexpected processing load that was caused by mismatching of data and by profiles that were evidently untested for their performance impacts. In addition, the slow performance of Customs Interactive was due to:

- ▶ Additional user traffic by organisations having problems with their EDI connections through third-party software;
- ▶ Inadequate hardware configuration of the Customs Interactive servers;
- ▶ Low usability of the screen interactions of the system, making user interactions longer than normal and increasing the number of concurrent users.

The profiles causing the processing overhead were removed shortly after go-live and incrementally reinstated after they were fully tested. As a consequence, the

performance displayed by the system is now better than that previously available from legacy systems and falls within the performance standard agreed with industry. The hardware capacity for Customs Interactive was also increased, although this system remains cumbersome to use for complex processing due to poor user interface design.

Figure 8 – System EDI Message Response Time



(1) Response time is measured from gateway to gateway

(2) Response time does not cover communications time or processing time in external client/ third-party software

(3) Compile was no longer used after 4 February 2006 and hence no data was available after this date

Source: Australian Customs IT Interviews, CMR Production Data Extracts, Booz Allen Hamilton analysis

Overall the CMR system performance has stabilised and is performing within its service level targets.

5.5 Functionality of the ICS










With the exception of the cascade reporting functionality for sea cargo and the limitations in managing profiles, the major part of the ICS is now functioning as expected or as it was designed. In many cases, the current functionality of the system is quite different from historical practice in parts of the industry. This, combined with insufficient training programs has resulted in many issues across some areas of the industry.

Examples where changes in business practice or business requirements are impacting the industry are:

- ▶ Part shipments (particularly for part shipments arriving close to one another);
- ▶ Ocean Bill of Lading (OBL) matching for cascade reporting involving many levels;
- ▶ Chained underbond movements involving multi-destinations and destination changes.

The ICS functionality assessment in Table 4 is based on the system’s ability to execute the function it was designed to do and is not based on the user’s ability to use the system correctly.

Table 4 – ICS Functionality Assessment

Area	Function	Rating (see legend)	Comments
Cargo Reporting	Lodge Impending and Actual Arrival Report (Imports)		<ul style="list-style-type: none"> Partially functional and has workarounds Business rules in system do not account for, or accommodate, multiple Impending Arrival Reports (IAR) which arise when a journey has multiple destinations
	Lodge Cargo Reports	Sea  Air 	<ul style="list-style-type: none"> Fully functional and working as designed, however the higher level of integrity required by Customs has not been found to be workable by parts of the sea cargo industry Issues around part shipments are due to changes in business practice in this area and lack of knowledge of how to use the system – not because of system functionality issues. Part shipments also impact the “lodge out-turn report” and “request underbond movement” processes
	Cargo Report Matching	Sea  Air 	<ul style="list-style-type: none"> Fully functional and working as designed, however the cascade reporting functionality has not been found to be workable by parts of the sea cargo industry The matching issues around the OBL and cascade reporting are due to lack of consistent and uniform reporting of information in the sea cargo industry rather than lack of or inadequate system functionality. This problem does not occur for air cargo, where the House Airway Bill (the equivalent of the OBL for air cargo) matches with a high degree of accuracy
	Lodge Out-turn Report		<ul style="list-style-type: none"> Partially functional and has workarounds Currently the system does not provide all the information required for reporting of the out-turn report for break bulk cargo or cargo requiring deconsolidation (which accounts for less than 10% of all cargo)
Declaration Processing	Lodge Import Declaration		<ul style="list-style-type: none"> Functional and working as expected, however it does not currently cover some low volume areas like drawback claims and unaccompanied personal effects
	Lodge Export Declaration		<ul style="list-style-type: none"> Partially functional and has workarounds System is yet to fully deal with expiry of Custom Authority Numbers (CAN) required for the matching of export documents
Cargo Movement/ Release	Request Underbond Movement		<ul style="list-style-type: none"> Fully functional and working as expected Underbond issues are generally associated with chained underbonds and part shipments scenarios. Both arise from changes in business practice in this area and the lack of familiarity with the new system – not because of system functionality issues

Area	Function	Rating (see legend)	Comments
	Lodge CTO Receipt (Exports)	●	▶ Fully functional and working as expected
	Lodge Departure Report (Exports)	●	▶ Fully functional and working as expected
Status Monitoring	To track the progress of a shipment through the system	◐	▶ Recently implemented diagnostic functionality relieved considerable frustration whereby the reasons for a consignment's status were not clear
Settlement	Make Payment	◐	▶ Fully functional and working as expected. Feedback from industry is that payment references are difficult to understand
	Make Payment as an Accredited Client	○	▶ Not functioning currently. Accredited client is currently being investigated for introduction, probably in early 2007
Risk Assessment	Profile Matching	◐	<ul style="list-style-type: none"> ▶ Partially functional and has workarounds ▶ Profiling requirements are not well handled by current system. As a result, matching and usability issues are experienced e.g., over/under matching, more complex process for creating profiles ▶ Profiling functionality is still experiencing some technical issues relating to tracing the decision logic that governs the operation of profiles in combination ▶ Lack of profile monitoring tools
Legend:		◐	Functionality has significant gaps
○	Functionality is absent	◐	Functionality has some gaps and problems
◐	Functionality is minor and/or suffers significant problems	●	Functionality appears complete and works well

Source: Australian Customs Management Interviews, Booz Allen Hamilton analysis

Despite the gaps described above, the ICS is a highly-functional system that assumes a high level of accuracy and integrity of the data provided to it. In the case of cascade reporting of sea cargo, industry could not provide the high level of data quality required, resulting in significant issues for brokers dealing in sea cargo.

The ICS has automated and made several functions now available online e.g., self-assessed import declarations (SAC), impending and actual arrival reporting, bulk cargo reporting, and detailed departure reporting for exports.

Improvement in the usability and flexibility of the ICS, particularly the Customs Interactive user interface, will help make the system more user-friendly and reduce time and effort to perform routine functions. Recent enhancements to the diagnostics functionality have also been effective in addressing common complaints over a lack of traceability and transparency of cargo within the system.



5.6 Technical Support Processes




Technical support processes are critical to ensure that the ICS is well maintained, new releases are implemented with minimal impact and problems are addressed speedily







and proactively. In addition, as the system evolves over time, industry must be well informed and prepared to use the updated system efficiently.

Overall, there is great potential for improvement of the current supporting processes, particularly Help Desk, problem management and training. Table 5 shows how the CMR supporting processes compared against Booz Allen's best practice model for IT support.

Table 5 – ICS Supporting Process Assessed Against Best Practice

Process Area	Features of Best Practice	Rating (see legend)	Rationale for Assessment or Current State
Help Desk (receiving and recording of calls)	<ul style="list-style-type: none"> ▶ Single point of contact for customers ▶ Calls/requests/incidents are clearly classified ▶ Calls/requests/incidents are classified by root of problem, not by symptoms ▶ Help Desk owns incident control process and monitors progress on all incidents regardless of origin ▶ Help Desk plays an active role as communication channel for incident control, contact point for enquiries on general service issues and dissemination of relevant information e.g., changes, releases 		<ul style="list-style-type: none"> ▶ No common process for incident capture. Process differs for internal and external clients ▶ No single point for recording of incidents across the organisation – several incident/issue logs are used ▶ Lack of single owner for overall Help Desk (all levels 1 to 3) process ▶ Incidents are not uniquely classified and categories used are not clearly defined ▶ Some Help Desk staff were not formally trained in call centre skills
Incident Management (handling incidents)	<ul style="list-style-type: none"> ▶ Incidents recorded in terms of symptoms, basic diagnostic data, information about configuration or services affected ▶ All incidents are analysed to discover reason for incident ▶ Users are provided means to continue business via a degraded service ▶ Effort made to minimise impact of incident on business and provide more time to investigate and devise a solution ▶ All events during resolution and recovery activity are recorded ▶ Procedures in place to guarantee each incident is resolved within the agreed time ▶ When incident is resolved, all records are updated accurately and resolution is agreed with the customer 		<ul style="list-style-type: none"> ▶ Information recorded for several incidents is incomplete ▶ No visible/tangible performance or service measures for incident resolution and handling ▶ Lack of strong ownership of incident management process ▶ Lack of proactive monitoring of Incident Log and outstanding incidents ▶ Roles and responsibilities are not clear e.g., responsibilities for closing incidents raised or making sure priority incidences are escalated are unclear

Process Area	Features of Best Practice	Rating (see legend)	Rationale for Assessment or Current State
Problem Management (problem resolution and longer-term planning)	<ul style="list-style-type: none"> ▶ Root causes of incidents/problems identified and provided Help Desk with information on workarounds ▶ Monitoring and analysis of problem environment and provision of information for proactive measures to improve service quality ▶ Major problem reviews conducted and integrated with incident management control information provided by Help Desk 		<ul style="list-style-type: none"> ▶ Lack of business leadership in proactive problem management process i.e., IT currently drives this process ▶ Lacking a longer-term outlook in identifying high-risk problem areas and mitigation strategies to help prevent or manage them ▶ The Industry Action Group plays a positive role in longer-term planning for problem resolution
Release Management (upgrade and change releases to system)	<ul style="list-style-type: none"> ▶ Release management policy agreed with clients ▶ Release management works closely with other change management activities like training and communication ▶ Formal procedures used for release acceptance testing ▶ Sign-off for release for implementation ▶ Audit of software and hardware prior to, and after, implementation of changes ▶ Track client satisfaction with release management 		<ul style="list-style-type: none"> ▶ Insufficient input and agreement to release management strategy, policy and plan with internal and external stakeholders ▶ No formal sign-off by users for release acceptance ▶ No tracking of client satisfaction
Testing – Customs Internal Testing	<ul style="list-style-type: none"> ▶ Clear test strategy and plan ▶ Testing scope, objectives, roles and responsibilities are communicated ▶ Testing covers all types of testing e.g., functional, performance, integration ▶ Testing covers all types of users e.g., power users, end users ▶ Extensive and comprehensive test scenarios are used ▶ Prototyping for all services and technologies with full vendor involvement and response ▶ Use of automated testing tools for greater efficiency ▶ Testing criteria and targets clearly set out for all tests 		<ul style="list-style-type: none"> ▶ Not all users had access to UAT environment ▶ Test scripts and testing done or driven by test team and not business owners and users ▶ Lack of thorough testing process with no sign-offs and no clear targets for testing coverage e.g., % of users ▶ Data available for simulating test scenarios was not adequate ▶ Lack of end-to-end testing e.g., the ICS and CCF were tested separately ▶ Industry testing is covered in the section “Engagement with Industry”

Process Area	Features of Best Practice	Rating (see legend)	Rationale for Assessment or Current State
Training – External Industry	<ul style="list-style-type: none"> ▶ Training analysis conducted to determine appropriate level and type of training required ▶ Scope, objectives and role of solution are clearly communicated to all users ▶ Multiple delivery mechanisms (CBT, demo videos, hands-on, Web site) provide formal and informal self-paced alternatives ▶ Training effectiveness measured ▶ Sophisticated information technology used as part of work process ▶ Training of users and clients used as satisfaction driver 		<p>Customs did make considerable efforts to ensure that the potential impacts of the coming ICS changes were well understood. However:</p> <ul style="list-style-type: none"> ▶ Customs Interactive training was not adequately designed to suit different target audiences and their different needs ▶ Limited hands-on training was made available to internal Customs users as well as external clients ▶ Effectiveness of training was not measured (e.g., % of declarations successfully launched) ▶ No training application has been made available for ongoing training ▶ Training was not closely integrated with release management
Legend:  No evidence that a process is followed  A process is used, but is highly immature and incomplete		 Process is immature and implemented poorly  Process is disciplined and mature, but falls short of best practice  Process operates at or exceeds best practice	

Source: Australian Customs Management Interviews, Booz Allen Hamilton Analysis

Overall, the support processes are below standard for a system of the complexity and breadth of use of the ICS. Industry standard process frameworks such as ITIL³ are freely available and, implemented in a structured and disciplined manner, will address many of the deficiencies noted above. Failure to do so will result in lower systems availability, longer delays to address problems and lower quality future releases.

³ ITIL stands for "IT Infrastructure Library" and is a set of guidelines developed for the British government. ITIL is the de-facto global standard in the area of service management.

6 Engagement with Industry


6.1 Engagement with the Import Supply Chain Stakeholders

Over a number of years prior to the implementation of the ICS, there was extensive communication of the CMR project and the changes associated with it within various industry forums. These included:

- ▶ A series of Ministerial Roundtable meetings with representation from all parts of industry;
- ▶ The Industry Reference Group;
- ▶ The Software Developers Forum;
- ▶ Issuance of a Software Developers Guide to inform industry of the required changes to their own software;
- ▶ Funding of the ICS User Representative;
- ▶ Regular discussion of the project at the quarterly CNCC meetings;
- ▶ The presentation and debate of legislative changes through the Parliament;
- ▶ Questioning at Senate Estimates;
- ▶ Extensive media coverage of the project;
- ▶ The provision of training and training materials by Customs;
- ▶ Direct consultation by Customs officers with industry participants; and
- ▶ Extensive online and hardcopy material that was made available by Customs in relation to many aspects of the project.

This section assesses Customs' engagement with industry across the ICS development life cycle including technical specifications, development, testing and implementation. Industry is made up of many constituencies and we have attempted to reflect a cross-sectional view. Our overall assessment of stakeholder engagement is shown in Table 6.

Table 6 – Stakeholder Engagement During the Development of the ICS

Process Area	Best Practice	Rating (see legend)	Rationale for Assessment or Current State
Shared Vision	<ul style="list-style-type: none"> ▶ Overall IT and business vision is widely communicated with key external organisations and there is evidence that the vision is well understood, accepted and reflected back in the individual plans of the stakeholder organisations 		<ul style="list-style-type: none"> ▶ Customs' vision is not widely shared outside of Customs and only periodically at the highest levels of the industry through quarterly executive communication sessions such as the CNCC

Process Area	Best Practice	Rating (see legend)	Rationale for Assessment or Current State
Communication with External Stakeholders	<ul style="list-style-type: none"> ▶ Comprehensive involvement in external stakeholder performance improvement programs (e.g., better data quality) ▶ Stakeholders fully embrace the principles of continuous improvement and open dialogue 		<ul style="list-style-type: none"> ▶ Customs consulted broadly with the industry and worked closely with a small number of key companies such as Qantas ▶ Input was taken but much was not used, with no feedback on what suggestions had been adopted and why ▶ No formal involvement by Customs in improving the quality or performance of external parties (e.g., data quality, error rates) ▶ Industry takes part in monthly Industry Action Group to articulate desired changes to Customs ▶ One-off (transactional) interaction between Customs and industry groups to confirm and gain buy-in for designs, but industry is typically not involved in the design process
Preparation and Education of Industry	<ul style="list-style-type: none"> ▶ Educates customers through close interaction to provide them with greater knowledge of products/services ▶ Develops a deep understanding of the customer or user base to better inform the interaction and education process 		<ul style="list-style-type: none"> ▶ Customs delivered substantial static material on how to use the ICS, but training on the live system was not extensive or widely used
Industry Testing	<ul style="list-style-type: none"> ▶ Scope, objectives and role of solution are clearly communicated to all users ▶ Automated testing tools in place with robust test scenarios for easier hands-off testing ▶ Testing effectiveness is measured to determine what worked and what did not work 		<p>Customs engaged in highly-structured and comprehensive testing with some air freight forwarding organisations, resulting in a very low level of issues experienced. However, there were exceptions. In general there was:</p> <ul style="list-style-type: none"> ▶ Insufficient time allocated for comprehensive testing ▶ Lack of end-to-end testing i.e., from the importers' logistics software to third-party Customs interface to the ICS and back again ▶ Lack of standardisation of testing process ▶ Functional testing done largely by Customs staff, rather than end-users ▶ Limited test data and scenarios that failed to properly stress the system
Legend:			Largely one-way communications, no effective feedback
	No evidence of organised communications		Good dialogue, but a feedback loop is lacking, making real understanding uncertain
	Limited consultation or communication		Very open dialogue with real engagement and understanding by all parties

Although external stakeholders were kept abreast of the overall CMR strategy through the Cargo Management Strategy and the Business Model, these were usually high-level sessions that did not involve industry in the planning process or regular teamwork type settings to help see CMR from conception through to delivery (e.g., regular teamwork sessions to help scope or define functionality, especially the components that industry is expected to use on a daily basis). Certain confidential

functionality such as risk profiling should be excluded from consideration in industry working sessions.

The net result of this interaction appears to have been an absence of engagement in establishing the strategy and objectives for the ICS, and an absence of engagement in design-setting. When the Minister's Roundtable was established in January 2004, the specification for the ICS was largely complete.

While Customs worked closely with the Software Developers Forum and some large freight forwarders to work through many aspects of the new system, there is little evidence that the system functionality and data requirements were well understood, let alone accepted, by large parts of the industry. For example, as early as January 2004, industry representatives expressed concerns that new Import underbond and cascade reporting requirements would impede speedy flow of cargo⁴.

Our overall assessment is that, despite the measures listed above, parts of industry did not have a good understanding of the nature of the system, its sophisticated matching requirements, or the level of training needed to use the new robust but complex system.

6.2 Engagement with Third-Party Software Vendors

The implementation of a robust end-to-end system with complete user and performance testing is a difficult challenge in a very heterogeneous industry with a complex supply chain. There are many different players in the import/export supply chain with varying degrees of scale, infrastructure support, resources and process discipline. Additionally, the import/export business is supported by a number of software vendors that provide a mix of packaged solutions and/or processing capabilities. Many industry brokers, freight forwarders, importers, shipping companies, and stevedores use third-party software applications to enter import/export data, track shipments, run reports, and otherwise interact with Customs. To these companies, the Customs ICS appears as a "black box" that runs in the background. Some companies involved in import/export also use in-house applications that interact with the ICS using EDI messaging.

Such a complex environment requires a high degree of communication and coordination to successfully implement a major system. Key to the implementation was ensuring that all the disparate components (ICS, commercial packages and in-house applications) work together seamlessly. This is not an easy task. It requires that full end-to-end testing be completed with all components. We found three significant issues with how end-to-end testing of the ICS with third-party software was conducted:

- ▶ *The timeline for testing was too short* – for Imports, we found that although Customs made most software functions available for testing near February, 2005, there appeared to be quality problems with the early releases (i.e., defects in the software prevented a full suite of tests being completed). Customs continued to improve the quality of the ICS and a production version of the

⁴ Minister's Roundtable meeting minutes

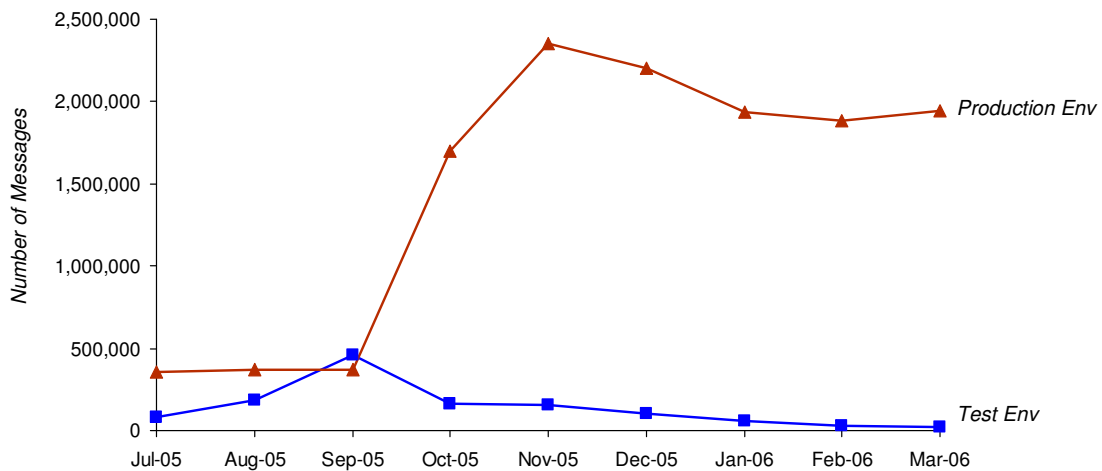
system was available for industry testing from 5 July as part of the three-month transition period prior to the 12 October go-live date. However, further changes were being made by Customs and the final release of a fully-specified ICS application was not done until 6 October, only a week prior to the planned go-live date.

- ▶ *Test cases provided by Customs to industry were fairly limited* – for imports, we found that many test cases provided by Customs were limited in scale and scope. This prevented the full exercising of the system necessary to ensure a robust application and interaction with the ICS.
- ▶ *There was no validation of tests performed* – Each vendor self-managed their testing and was accountable for the result. As seen in Figure 6, these resulted in a highly variable level of quality across the many software suppliers.

It should be noted that these issues were not general – Customs had engaged in close collaboration with a small number of very large air freight forwarders. These companies engaged in extensive testing, recognising that a successful interface with Customs was critical to their operation. No equivalent testing occurred with sea freight operators, smaller operators or the independent software vendors, despite Customs' encouragement to do so.

It should also be noted that some large independent software vendors had reassured Customs that they were ready prior to the implementation. In the absence of clear quality standards, there was no objective or independent validation of these claims. Figure 6 shows that one major software provider released software associated with high levels of issues, other developers successfully delivered to their clients functional software that experienced a low level of problems.

Figure 9 shows the volume of test messages in the period immediately before and after the implementation in October. It clearly shows very low levels of testing until September 2006, indicating that most testing was delayed until very close to implementation. The consequences of this testing regime have been assessed in Section 5.3 – software vendors were in a highly variable state of readiness and in some cases deployed software that resulted in significant problems. This is also reflected in the volume of test messages that continued for several weeks after implementation.

Figure 9 – Volume of Testing Performed

Source: Customs, Test case and production message volumes through ICS Imports, Booz Allen analysis

6.3 Industry Engagement Over Implementation

Leading up to the implementation of ICS Imports, Customs was receiving conflicting reports of industry readiness, including from the CBFCA (reporting a “not ready” status) and large companies that Customs was working closely with (“ready and keen to go”). The lack of a readiness assessment and end-to-end testing with clear quality hurdles did not allow a fact-based assessment of the overall industry’s readiness to be made.

In addition, while Customs had provided extensive briefings, many smaller companies in particular were not prepared for the change. For these companies there was no staged implementation or realistic fall-back to allow them to continue to conduct their business while coming to grips with the new system. Compile continued to operate until February 2006, but its use as a contingency system required manual matching of cargo reports and import declarations to be performed by Customs; this was a difficult and slow process at a time when communication with Customs was limited by help desk congestion. Even given the difficulties of using ICS over this period, few organisations preferred the use of Compile as a fall-back solution.

7 Governance of the ICS Development and Implementation

7.1 Current State of Governance

Governance of a large change program such as CMR requires “a structure of relationships and processes to direct and control the enterprise in order to achieve the enterprise’s goals by adding value while balancing risk versus return”⁵. In the case of the ICS, there does not appear to have been an effective structure or process to direct and control the project, nor to make suitable risk decisions. To fulfil this task, Customs has had at least 10 bodies responsible for different aspects of the management and governance of the ICS, including the interactions with industry (see Table 7). These bodies overlap in their responsibilities and accountabilities, and overall the program has no single business owner and accountabilities for its delivery are unclear.

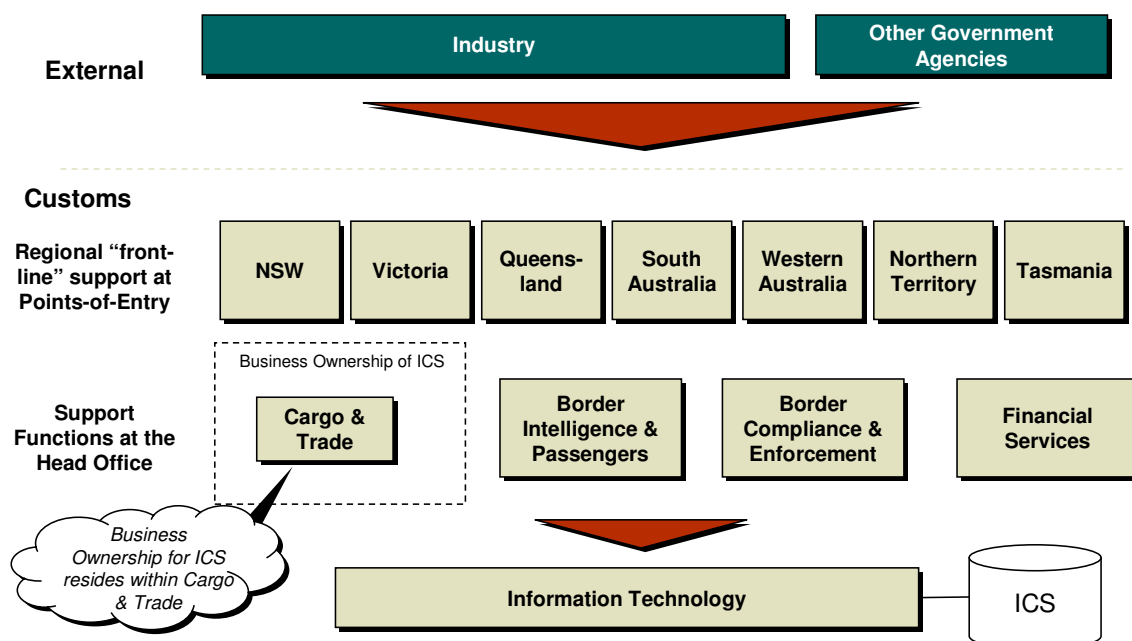
Table 7 – Baseline of Committees or Standing Meetings that have a Governance Role

	Forum	Area of Focus	Participants	Freq	Decision Rights
Strategic	IMSC (Information Management Strategy Committee)	IT Priorities	All National Directors	Every 6 months	Endorse IT strategy and business plans
	IMPC (Information Management Policy Committee)	IT Priorities	All National Managers, CIO, CFO, Project Mgr	Quarterly	Approve IT projects >\$30K
Executive	CMR Executive	CMR	Cargo Systems and IT	Weekly	Information sharing of results Buy-in for new functionality
	CMR SES Directors	CMR	Regional Reps, IT and business executives	3-4 weekly	Information sharing of results/reports
IT Operational	CAB (Change Advisory Board)	Change Mgt for Apps	IT App Dev Team Leaders, Cargo reps who have items on agenda	Fort-nightly	Decision to go ahead with evaluation and development of changes requested
	CCB (Change Control Board)	Approve Changes	EDS/CAM staff, Customs	Weekly	Approve EDS changes to production environment and for deployment
	CPC (Change Planning Committee)	Scheduling	Technical Team Leaders, EDS, deployment staff	Weekly	Decision rights to schedule changes
Consultative, External	IAG (Industry Action Group)	External Clients	Industry peak body representatives, Cargo Systems, IT	Monthly	Inform Customs of industry issues and priorities for improvement to the ICS
	CNCC (Customs National Consultative Council)	External Clients	CEO, industry representatives	Quarterly	Inform industry of executive-level changes that could affect them
	Software Developers Meeting	External Clients	Third-party software firms and industry in-house software developers	Monthly	Inform software developers of IT changes that they need to react to

⁵CobiT 3rd Edition, IT Governance Institute 2000

In a large complex program such as CMR, we would expect to see a clear business owner and a strong program management structure and process to organise and manage the many interrelated initiatives that make up the program. In Customs, this combined role appears to have been performed by the Office of Business Systems (OBS). This was however, disbanded following the implementation of the Exports module in 2004. Since that date, Cargo and Trade Branch has been the designated business owner, however many other branches are required to cooperate in the development of the ICS (see Figure 10) and strong program management support has been lacking.

Figure 10 – Current Business Ownership of the ICS



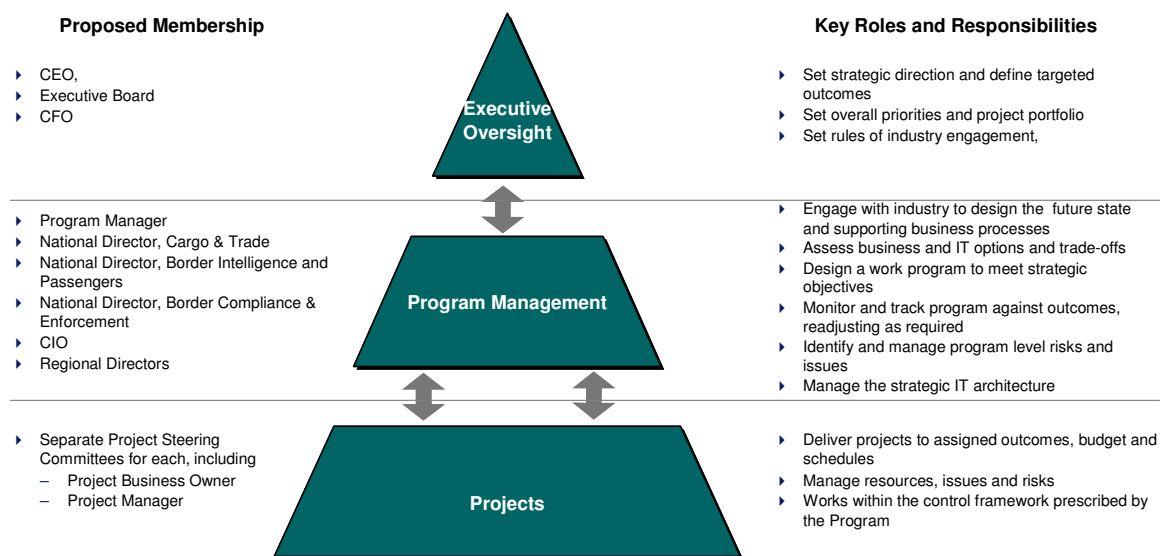
Although Cargo and Trade is a key organisation within Customs, the overall ICS capability requires leadership and direction on risk assessment, compliance, financial reporting, data warehousing, quarantine requirements, import/export statistics and all aspects of reporting.

In Customs, governance serves a number of critical purposes in making CMR successful, including:

- ▶ Ensuring a closer partnership between IT, suppliers, the internal business stakeholders and the external industry stakeholders;
- ▶ Providing visibility to industry stakeholders so they can proactively work to meet Customs’ objectives (as opposed to being in a reactionary mode to Customs’ requirements);
- ▶ Providing alignment with Customs’ strategic objectives (beyond just CMR objectives);

- ▶ Providing alignment with Customs' IT strategy and the desired future state IT portfolio;
- ▶ Defining and tracking of clear metrics to measure performance;
- ▶ Ensuring that the benefits of the ICS architecture are not comprised by uncontrolled changes to the applications;
- ▶ Tracking of benefits realisation;
- ▶ Prioritising and managing financial investments.

Figure 11 – Proposed Governance Model



For the management of a program of the size and complexity of the ICS, we would expect to see the following governance mechanisms operating together in an overall governance model, as shown in Figure 11.

- ▶ An Executive Oversight body, charged with setting strategic direction, defining targeted outcomes and tracking overall progress. This would normally include the CEO and a subset of the executive board;
- ▶ A Program Management body, responsible for the day-to-day running of the overall program, setting priorities, tracking progress against outcomes, managing the interaction with industry and managing issues and risks as they arise. Architectural management of the ICS suite of applications also occurs at this level to ensure their long-term flexibility. The Program Management Office should be led by a full-time senior executive reporting to the executive board or CEO and should be supported by a small number (3-5) of qualified and full-time staff;
- ▶ Project Management of the major pieces that make up the Program (e.g., industry engagement, process engineering, change management and software development). These are concerned with resource and task management to

achieve the objectives, the schedule and the budget set for them at the Program level.

Each of the different bodies should have clearly defined roles and responsibilities, accountabilities and decision rights. Proposed membership of each body is also given in Figure 11.

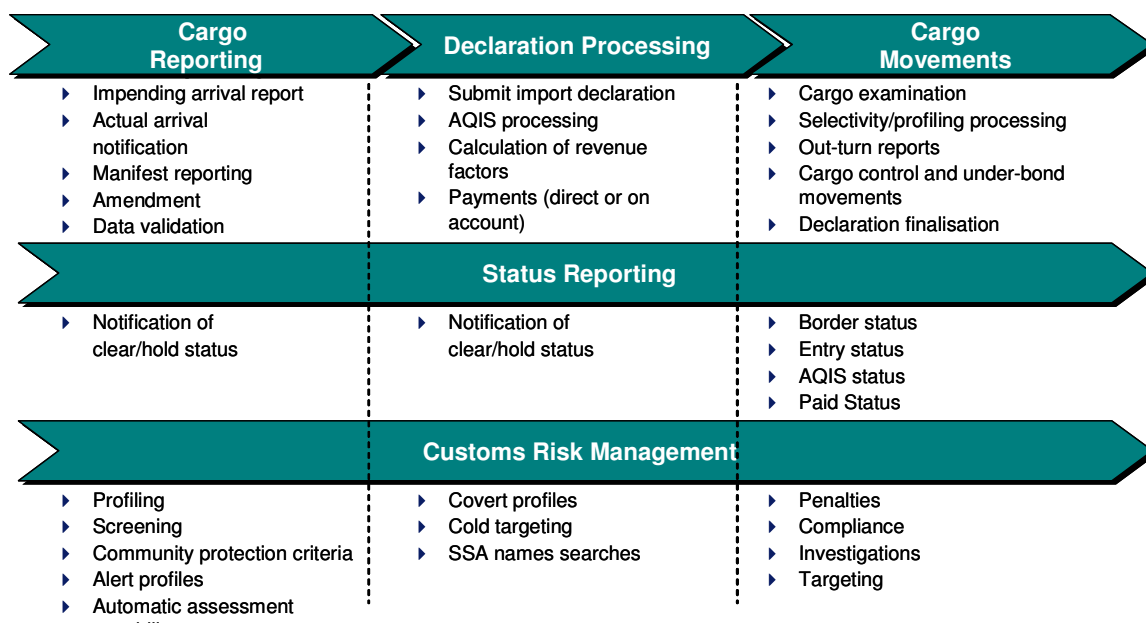
8 The Potential for Further Benefits

The ICS has delivered a highly-functional and flexible platform that is now stable and performing well. While there is a range of tactical measures that can be taken to further improve delivery in the short term, the greatest value of the investment in the ICS will be as a platform of the future.

In this respect, the ICS offers substantial benefits over the legacy systems it replaces – it is integrated, well structured, is based on a high integrity data architecture and is highly configurable. In these respects, the ICS is among the better examples of Customs' systems available among the developed nations.

To help assess how the ICS can be used in the future, we have used a process framework for Imports to assess how the ICS compares to current best practices and how adoption of global best practices can benefit Australian Customs. To help level-set the business process discussion, our framework summarises the major business components of the import environment (Figure 12).

Figure 12 – Imports Business Processes Framework



We used this framework to make an assessment of the ICS against industry “best practices”. “Best practices” is a subjective term in the import business because no single business practice can be implemented in every country the same way with the same expected outcomes. However, the comparison does provide a gap analysis that is directionally correct (i.e., indicates whether the gap is large or small) and also indicates the potential that certain practices can deliver.

Using the framework, we have completed a gap analysis for the high-level processes (cargo reporting, declaration processing, cargo movements, status reporting, and Customs risk management). The following sections use a slider metaphor to represent a spectrum of practices across the five process areas – the left-hand side represents a sub-optimal practice and the right-hand side represents an “ideal” situation, even

though that perfect ideal may not exist in practice. We have indicated on each continuum where best practices lie and where Australia lies. In using this representation we found it necessary in places to separate the air cargo assessment from the sea cargo assessment because of the higher degree of data and industry standardisation in air versus sea.

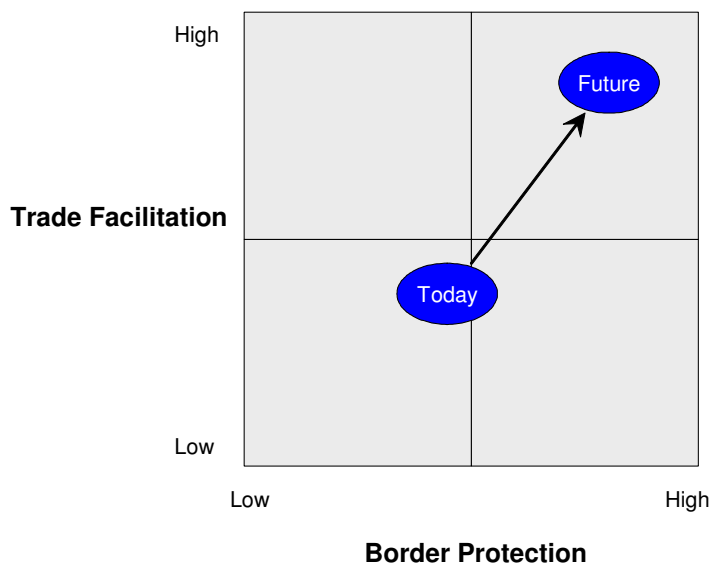
It should be noted that, globally, there are few examples of countries that approach an ideal situation in any given area of import processing, and none that approach this level in every area of their operation. Australia certainly rates as one of the leading countries in the world in Customs practices and with the ICS, has the potential to rise to even higher levels of effectiveness.

In closing the gap with best practice, and potentially exceeding current standards of best practice, it will first be essential that Customs develops a future state vision that establishes clear and quantifiable objectives for the future. In each part of the process, Customs' aspirations for transformational change, and the aspirations of the industry, should be clearly understood.

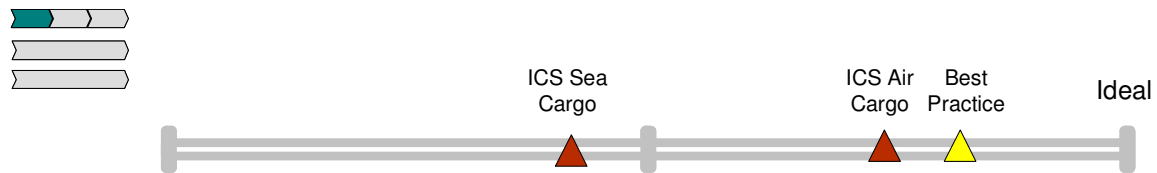
8.1 Overview

The changes required for Customs to achieve improved trade flows and greater border protection are not all achievable within the organisational boundaries of Customs. The use of high-quality data flows, enabling high levels of automation and improved risk management, will provide benefits for all parts of the supply chain, but all parties have a part to play in the improvement. These improvements will therefore need to be pursued collaboratively and by working at a strategic level, where the interests of all parties most easily coincide. We further believe that trade facilitation and border protection are enhanced by the measures we have outlined, and that these two high-level objectives need not be considered as in conflict with each other (see Figure 13).

Figure 13 – Potential Improvements due to Adoption of Best Practices



8.2 Cargo Reporting



The objective of cargo reporting is to deliver timely, accurate and high integrity information of cargo movements. This is a pre-requisite to the effective management of the balance of the imports process. High quality data will allow very high standards of data matching and can typically only be ensured when information transfers are based on a clear standard and are automated to prevent errors being introduced by manual entry.

Optimally, cargo movements processes will provide:

- ▶ A well-controlled set of conditions under which all parties can interact, providing accurate and timely information on which to base scheduling for offloading, storage and inland carriage of goods;
- ▶ Reduced costs associated with inaccuracies that cause delays, storage charges, and multiple reporting;
- ▶ Reduced opportunities for illicit criminal activities associated with smuggling and terrorism, thereby potentially reducing insurance premiums and other overhead costs;
- ▶ Support for faster throughput and just-in-time delivery, optimising equipment capacity utilisation.

For Customs and other government trade authorities, such conditions will provide for:

- ▶ Streamlined processing procedures and greater dependency on automated processes;
- ▶ Optimisation of scarce human and capital resources;
- ▶ Greater reliability in risk assessment for contraband, revenue protection and public health and safety purposes.

Examples of best practices are where data standards and electronic interchange is high.

In Australia, air cargo already achieves a high standard of performance in this area but sea cargo does not due to data integrity issues with the Ocean Bill of Lading which is preventing cascade reporting from operating effectively. Specific actions that can address this gap include:

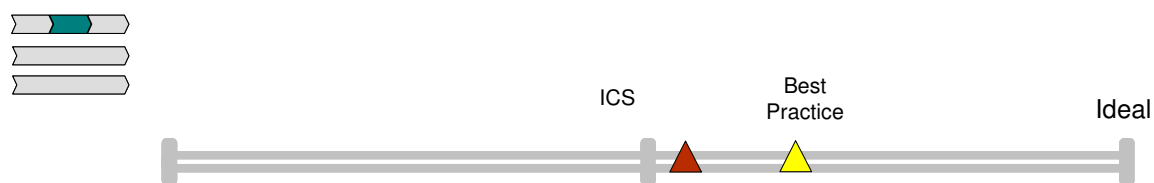
- ▶ Adoption of WCO Cargo Data Standards for exchange of shipping cargo movement information. Australia has played a lead role in the development of these standards and they have been accepted and harmonised with the

standards from the United Nations Centre for Trade Facilitation and Electronic Business and the ISO;

- ▶ Greater use of electronic linkages between transportation companies and Customs Brokers, Freight Forwarders, Stevedores and Depot Operators to ensure a common view of key data such as the Ocean Bill of Lading;
- ▶ Imposition of stricter standards for data accuracy and timeliness from shipping companies. In the US, strict penalties apply for non-compliance on the part of shipping companies with data accuracy and timeliness standards.

We believe that the recent changes implemented by Customs to manually match OBLs and declarations for sea cargo is a practical short term solution to the current problems with sea cargo reporting. In the longer term however, international experience demonstrates that high standards of data matching can be achieved for sea cargo reporting, and that this should be the aim of Australian Customs.

8.3 Declaration Processing



Declaration processing is dependent on high-quality data on manifests (provided through cargo reporting) being matched with declarations. In an ideal scenario, the declaration is matched with the manifest early in the process (before arrival of the ship/plane) and the shipment is profiled for risk. If required, the shipment is identified for examination by x-ray or physical inspection with this process taking place immediately upon arrival. Once “cleared”, payment is made and the goods are available for collection.

This process is intended to take as short a time as possible so that transport can be arranged before the three days “free storage” period has elapsed.

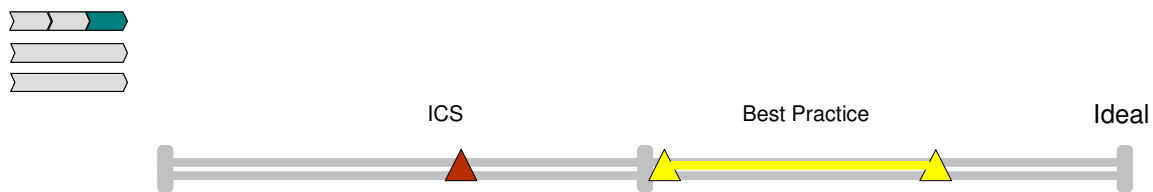
While no country we are aware of performs declaration processing at close to the ideal level, the EU provides an example of leading performance in their matching of manifests to declarations.

In Australia, cargo is not considered “cleared” by Customs until all duties have been paid. This makes it difficult to distinguish delays due to Customs processing and delays in payments. Specific actions that can improve this process in Australia are:

- ▶ Improvements in the data quality to allow earlier profiling of cargo and identification of which cargo to x-ray before arrival. This should combine targeting and random sampling (see Section 8.6 – Risk Management). This is dependent on early receipt of cargo reports, an area that is problematic for sea cargo;

- ▶ Consideration of separating the commercial processes of payments from the risk assessment. This will allow payment of fully reviewed cargo to provide “final” clearance and so provide more predictability for the recipient or agent. This may be subject to time limits that trigger re-review for security purposes;
- ▶ Investigation of payment accounts or other means that remove the delays in payments (similar measures have been partially incorporated in the recent Accredited Client proposals).

8.4 Cargo Movements



As applied to both imports and exports, cargo movements is the result of completing the government processes for evaluating the information from the declaration and cargo inventory records and determining through risk assessment processes that it is not necessary to physically hold the goods in Customs’ custody.

Assuming that the best practices for cargo reporting, declaration processing and risk assessment are functioning, generally it should be possible to release 90% of imported cargo either before or upon accurate notification of actual arrival. Australia, while performing well, currently clears around 70% of sea cargo before arrival. As well, more than 98% of outbound cargo should be capable of approval for export so long as the goods are securely sealed from physical intervention and irretrievably under the control of the outbound carrier or already laden aboard the conveyance for direct departure from the country.

Typical obstacles to achieving this ideal state for cargo movements are:

- ▶ Late, incomplete, inaccurate or repeatedly amended data from the cargo inventory or declaration providers;
- ▶ Improper functioning of government equipment, electronic evaluation of data or systemic risk assessment processes;
- ▶ Heightened alert status due to terrorist, contraband, smuggling or other national security threats;
- ▶ A lack of integration of government cargo control processes among different trade-processing agencies;
- ▶ A lack of an objective means of measuring and quantifying government cargo processing methods.

The benefits to industry and government from applying best practices are:

- ▶ Dependable movement and delivery of cargo to satisfy just-in-time inventory requirements;

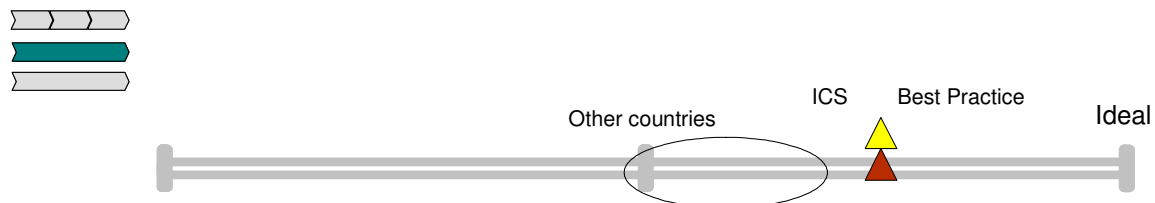
- ▶ Reduced costs associated with delay and duplication of processes;
- ▶ Improved equipment and human resource utilisation;
- ▶ Greater profit for industry and improved productivity for government.

The EU nations have made significant advances towards optimal best processes in this area, both in the matching of manifests to declarations, and also in the facilitation of underbond movements between countries.

Specific actions that can improve this process in Australia are:

- ▶ Agreement of objectives and key performance measures for release of cargo;
- ▶ Reporting on Customs' performance against these measures, not confusing industry delays (e.g., to make payments) with Customs clearance delays;
- ▶ Review of the processes of review and clearance to reduce the clearance times for low risk cargo;
- ▶ Review of the processes for management of sea cargo through the Container Examination Facility to ensure inspection is done as early as possible;
- ▶ Consideration of the requirement to match manifests to declarations for underbond movements, as such goods are still under Customs' control and subject to later clearance controls;
- ▶ Review of the systems interface between the ICS and Exams, the system that operates the Container Examination Facility, to ensure efficient processes and high visibility of cargo status (see Status Reporting).

8.5 Status Reporting



Status reporting is the ability to provide a complete picture of the status of a cargo item at any stage through the import process and security reasons expected. Following recent changes to improve the diagnostics ability, we believe that the ICS represents a best-practice example of status reporting due to:

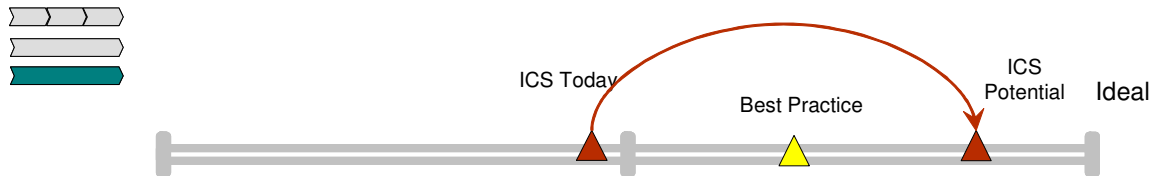
- ▶ The integrated nature of the system, making status easy to assess;
- ▶ Provision of a single window into government for the status of import cargo.

The integrated nature of the system is key to this strength and a major enabler of future improvements.

However, there are improvements that Australia can make to further develop this capability. In particular, the Customs Interactive system is difficult to use and confusing, with different statuses reporting on different screens. Today this requires an experienced operator to determine the “real” status of an item. This makes the

system confusing and provides scope for erroneous decision making. Recent improvements in the diagnostics capability should alleviate this somewhat.

8.6 Risk Management



Establishing the level of risk for imported or exported goods is the primary reason for government processing of international trade transactions. Risk assessment is directed at identifying compliance irregularities and criminal behaviour that are associated with terrorism, improper payment of revenues, importation or exportation of contraband and protected species, goods that are environmentally threatening or that will damage agriculture or natural resources or are contrary to international trade agreements or foreign policy.

Best practice for risk assessment is generally defined as establishing a series of conditions that will capture the highest number of irregularities and violations by selecting the fewest number of transactions for review and/or inspection. The most frequently employed risk assessment methods involve:

- ▶ Targeting historically known violators and violations;
- ▶ Profiling for irregular or illogical trade patterns;
- ▶ Establishing alerts for reported illicit transactions;
- ▶ Use of advanced intelligence techniques such as satellite imagery and being well integrated with information flows from other intelligence agencies;
- ▶ Use of random sampling techniques;
- ▶ Use of x-ray and other technical devices for detecting density, radioactivity etc.

Additional best practices are having the capability to adjust the risk assessment factors in order to:

- ▶ Vary profiles to prevent predictability;
- ▶ Respond to increased or decreased threats;
- ▶ Recognise changes in trade volumes and patterns for different ports.

Having a system of measures that provide Customs with evidence to routinely evaluate the effectiveness of risk processes and adjust conditions is a “must have” for risk assessment.

Exemplars of best practice in this area are:

- ▶ Israel for its integration of national intelligence capabilities with Customs to detect potential inbound risks;

- ▶ The US for its profiling services, managed through a single point for national and local profiling and its extensive use of historical pattern analysis, specific targeting and random sampling.

In Australia, the ICS Profiling engine is particularly powerful but difficult to use and manage. Specific actions that can increase its effectiveness include:

- ▶ Definition of outcomes and performance measures for intelligence and profiling that drive development in this area;
- ▶ Review of the existing management arrangements for the design, development and testing of profiles to ensure that all profiles have a clear purpose and efficacy before deployment;
- ▶ Based on greater testing, tuning of the existing profiles to reduce the number of hits that today require manual review;
- ▶ Incorporation of random sampling in addition to specific targeting. Random sampling should be automated and integrated with risk-based targeting.

9 Key Lessons Learnt

As with any large systems implementation, a number of items have emerged as lessons to be learnt from the experience. This implementation was unique in that it not only involved multiple government agencies, but also had to be successful in accommodating various levels of process maturity in a wide range of external companies and related third-party software providers. All of this combined to provide a challenging environment with multiple lessons for future implementations.

Table 8 provides a summary of the key lessons with background and suggested actions for the future.

Table 8 - Key Lessons Learnt

Lesson Learnt	Background	Actions for the Future
Strong program management is required	Following the closure of OBS, there was no single business owner within Customs of the ICS project and there was poor overall program management	<ul style="list-style-type: none"> ▶ Institute a clear business owner and program management capability immediately to manage the CMR, covering both business processes, industry engagement and the systems development
Strong budgetary control is essential	The CMR did not have an overall budget for its activities	<ul style="list-style-type: none"> ▶ Ensure a clear budget and budget accountability in any projects undertaken
Unclear objectives cannot be delivered	The objectives of CMR were stated in general terms, making it impossible for project initiatives to focus on achieving these	<ul style="list-style-type: none"> ▶ Ensure that all objectives are measurable for all facets of the project e.g., trouble-free implementation as well as benefits realisation ▶ Use a formal benefits realisation management process to ensure benefits are achieved
Staged implementation and/or parallel operation is essential to manage impacts on industry	The "big bang" implementation gave neither Customs nor Industry any fall-back when the new system failed to function according to expectations	<ul style="list-style-type: none"> ▶ All large and complex implementations should do a risk assessment of the deployment and examine suitable strategies for mitigation. In this case, suitable strategies include parallel running and/or staged implementation
Sacrificing testing to make a deadline is high risk	The ICS allowed a very limited test program that allowed several defects to be introduced into the system	<ul style="list-style-type: none"> ▶ Manage the testing process from early in the project, making sure that adequate time, resources and expertise are available
More formal quality controls with the software industry will help ensure a quality result	Customs did not accredit software providers, leaving them to test themselves against a test environment. Software vendors vary widely in the quality of the software available at implementation	<ul style="list-style-type: none"> ▶ Adopt a quality assurance program and institute a more rigorous testing process for software vendors

Lesson Learnt	Background	Actions for the Future
User-centred design will help prevent development of systems with low usability	The Customs Interactive facility is slow and difficult to use	<ul style="list-style-type: none"> ▶ Adopt user-centric design practices and usability testing to ensure that the processes and systems are as easy to use as possible
Engage Industry in planning of large implementations	Customs received feedback from some parts of industry that readiness for the ICS was low but other parts indicated that readiness was high	<ul style="list-style-type: none"> ▶ Use a formal readiness assessment that engages industry as well as internal stakeholder and tracks a number of quality and readiness measures
Profiles require more coordinated management and should be designed and tested by experts before deployment	The profiles when first introduced created widespread “holds” on cargo and caused severe processing overheads. Profiles still have the potential to create damaging effects if not managed carefully	<ul style="list-style-type: none"> ▶ Establish a management process that examines the impacts of the Profiles portfolio ▶ Establish a testing environment where the effectiveness and consequences of new Profiles can be tested
A test environment that allows industry and Customs staff to train with the “real” system and transactions is vital	The ICS implementation did not provide any testing on a “live” system prior to implementation. Despite extensive investments in presentation-based training, this was not adequate for users to become familiar with the complexities of the system	<ul style="list-style-type: none"> ▶ Provide a “live” test environment for the ICS ▶ Ensure that it reflects the production environment and can accept real data for training purposes

10 Recommendations and Next Steps

Following a difficult implementation and transition period for Customs and many parts of industry, the focus for the ICS must now be to leveraging the investments made for the future. We propose a structured program of activities as follows:

10.1 Governance Actions

Before any other actions, the governance of the ICS should be improved to provide greater strategic direction and oversight, as well as greater management and control of the program of work. We believe that this can best be achieved with a three-layer governance structure, as shown in Figure 11.

To assist Customs in establishing this structure, we have provided an example of a Program Management Framework in Appendix 3.

Specific recommendations are:

No.	Recommendation	Priority	Timeframe
1	Establish a formal executive steering committee for the Program with a clear terms of reference to provide strategic direction, oversight and monitoring of the future ICS work program	High	Immediate
2	<p>Establish a Program Management structure and process according to industry best practices. This will actively manage all of the projects within the ICS work program, including industry engagement, IT, business process reengineering and organisational change. It will also manage demand for change to the systems and prioritise these within budget constraints.</p> <p>The Program should be led by senior executive reporting to the executive board or CEO. This executive should not have normal line responsibilities during discharge of this office to ensure that adequate time and effort can be dedicated to the task. The Program Management function should also be supported by a small number (3-5) of qualified and full-time staff.</p> <p>The Program Management function will take ownership of the Program, including ensuring that all relevant internal Customs teams are appropriately engaged and aligned.</p> <p>Industry representatives should take part in a newly formed program management structure. This representation should go beyond the already existing representation in the Industry Action Group. We do not imply by this that Customs must accept all suggestions proposed, but should listen and provide feedback on proposals put forward.</p>	High	Immediate
3	Rationalise existing committee and forums within the above model. Where the body is not accountable for a specific outcome, it should be abolished. For the balance, each should have clear terms of reference and targeted outcomes.	High	Immediate

10.2 Tactical Improvements

While the future plans for the ICS are developed and agreed, there are a number of short-term actions that will serve to increase functionality, usability and stability of the system that should be progressed in parallel.

Specific recommendations for tactical improvements are:

No.	Recommendation	Priority	Timeframe
4	<p>Continue the existing IAG-driven program of tactical improvements, prioritising high-impact changes with a short-term benefit. This should avoid driving long-term focused change to avoid potential conflicts with the developing strategic agenda, and we have therefore proposed a six-month window for short-term improvements to be agreed.</p> <p>This can also address short-term functional gaps highlighted in Table 4, where these can be managed within the six-month window.</p>	High	Immediate, ending in 6 months
5	<p>Improve systems support processes to a best-practice level, including:</p> <ul style="list-style-type: none"> ▶ Help Desk (e.g., get clear ownership for end-to-end Help Desk process and implement one common set of Help Desk tool) ▶ Incident Management (management of incidents in a structured and responsive fashion) ▶ Problem Management (problem resolution and longer-term planning, proper tracking and monitoring) ▶ Release Management (upgrade and change releases to system) ▶ Testing – Customs Internal Testing of new releases. An end-to-end testing environment should be developed that includes automated testing tools and robust test cases to cover all parts of the Customs import/export supply chain 	High	Immediate, to be complete within 12 months
6	<p>To improve the level of training available to all users of the ICS including:</p> <ul style="list-style-type: none"> ▶ Provision of a live testing environment for the ICS ▶ Making available regular communications on up-coming changes to the system and any associated changes expected in industry processes 	High	Within 6 months
7	<p>Improve the quality of interaction with third-party software vendors and in-house software applications through:</p> <ul style="list-style-type: none"> ▶ Establishment of clear quality criteria that third-party applications should meet regarding their interaction with the ICS ▶ Establishment of a more rigorous test regime and test bed to more comprehensively test software against the agreed criteria ▶ Development and publication of statistics on third-party software interaction compliance and quality leading up to future releases ▶ Develop an industry protocol for software vendors covering a commitment to quality and agreeing contingency measures should a software release have issues impacting customers <p>These activities should be done cooperatively with vendors and major users of third-party software.</p>	High	Within 3 months
8	<p>For future releases, ensure that implementation risks are managed through at least one of the following mechanisms:</p> <ul style="list-style-type: none"> ▶ Parallel operation, so that users can fall-back to an older version if the software does not operate correctly ▶ Staged implementation, where correct operation is verified in production use before it is deployed more widely ▶ Guaranteed roll-back – ensure that changes implemented can be rolled-back to the original state in the event that they are found to be functioning incorrectly <p>Note that all of these release strategies require matching responses from third-party software and should be developed cooperatively with vendors and developers of these software packages.</p>	High	Before the next major release

No.	Recommendation	Priority	Timeframe
9	Address the usability issues with Customs Interactive using industry joint design and usability testing.	High	Within 3 months
10	Establishment of test processes and a test environment for profiles that allows their performance and impact to be assessed before they are used in a live environment. This should include rigorous processes to prevent profiles being implemented outside of authorised test and implementation processes.	High	Within 3 months

10.3 Strategic Transformation Actions

Following the establishment of a sound governance framework and stabilisation of the short-term process and functional deficiencies, Customs can turn its attention to leveraging the ICS as a platform for the future. This phase of work will require careful planning and the setting of clear objectives to be successful. It will also need to be based on a more open interaction with industry so that the potential impacts and benefits can be identified and managed.

Specific recommendations include:

No.	Recommendation	Priority	Timeframe
11	Agree a set of targeted outcomes and operational measures for the effectiveness and efficiency of cargo processing, including the border protection and compliance processes for cargo.	High	Within 6 months
12	Assess the alignment of the current organisational model to achieve these outcomes. Issues that require examination include: <ul style="list-style-type: none"> ▶ A consistent operating model and operating procedures across the regions ▶ The role of regional and Canberra teams in authorising, designing, building, and testing ICS profiles. This should cover regional and national profiles ▶ Accountabilities that cross Branches and how these are managed. This should include an assessment of decision rights where organisational boundaries are not clear 	High	Within 6 months
13	Based on the targeted outcomes and KPIs for cargo, and using input from international best practices, assess the potential changes in the import and export supply chains and potential benefits for Customs and industry. This should be done in close cooperation with industry, recognising that industry is heterogeneous and does not share the same targeted outcomes. For some parts of Customs' operations such as intelligence, it may not be possible to engage closely with industry due to security concerns. Based on our assessment, we expect significant opportunities for improvement based on the ICS, by changing the long-established business processes. This should take a perspective of optimising the end-to-end supply chain and border security, rather than improving each step in the chain. The opportunities available are discussed further in Section 8. These should act as a catalyst for these discussions, rather than as a prescriptive list of improvements.	Moderate	6-18 months

11 Appendix 1 – Feedback from Industry Consultation

11.1 Disclaimer

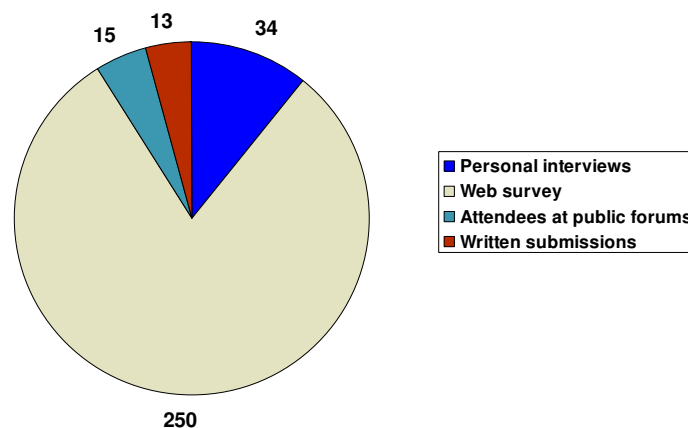
This section of the report provides feedback from the broad industry consultation process conducted by Booz Allen Hamilton. The views expressed in the feedback sections of this appendix are not the views of Booz Allen; they are a summary of the comments, suggestions and proposals of industry participants involved in the consultation process.

11.2 Consultation Process

Industry input to the Booz Allen review was gathered at various levels and by a variety of consultation channels (see Figure 14).

- ▶ Interviews with key stakeholders that took part in the ICS implementation
- ▶ A web-based survey that was open for responses from across Australia
- ▶ Public forums held in each of the major cities
- ▶ Handwritten submissions

Figure 14 – Number of Respondents by Channel



11.2.1 Interviews with key stakeholders that took part in the ICS implementation

A total of 34 face-to-face and telephonic interviews were conducted with a range of stakeholders including importers/exporters, peak bodies, stevedores, brokers/freight forwarders and software providers. A detailed list of the individuals interviewed is available in Appendix 2.

11.2.2 A web-based survey

A total of 250 responses were received from the web-based survey. The survey had three major components:

- ▶ Questions to assist in determining the participants' demographics

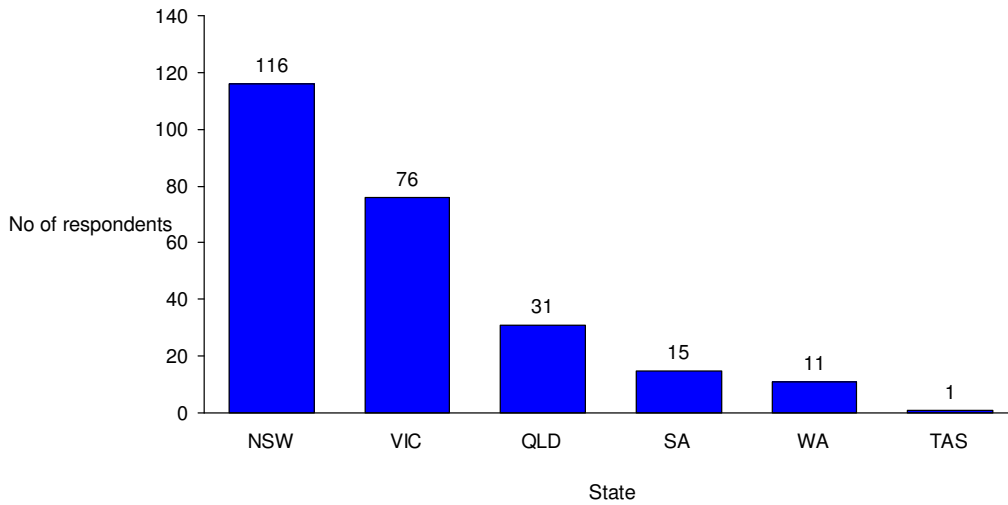
- ▶ Questions to gauge their experience of the ICS rated against a scale, and
- ▶ Questions with free text fields to elicit responses on a range of questions

Members of the following organisations were notified of the review and requested to participate in the survey:

- ▶ Australian Air Transport Association
- ▶ Australian Chamber of Commerce and Industry
- ▶ Australian Federation of International Forwarders
- ▶ Australian Importers and Exporters Association
- ▶ Conference of Asia Pacific Express Couriers
- ▶ Council of Small Business Organisations
- ▶ Customs Brokers and Forwarders Council of Australia
- ▶ Federal Chamber of Automotive Industries
- ▶ Gifts and Homewares Australia
- ▶ International Air Couriers Association
- ▶ P&O Ports
- ▶ Patrick Terminals
- ▶ Shipping Australia
- ▶ Transport Associations (NSW, VIC, Qld, WA)
- ▶ Licensed Depots list
- ▶ Software Developers list

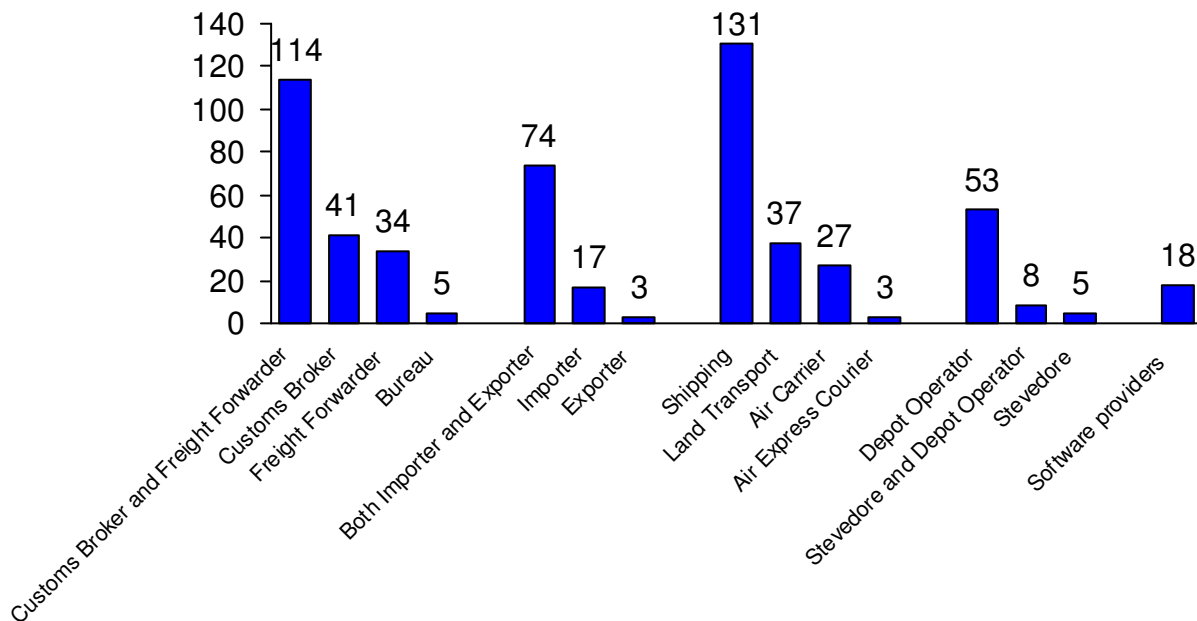
Feedback was received from across Australia except for the Northern Territory as displayed in Figure 15.

Figure 15 – Head Office Location of Respondents



Respondents represented all players in the value chain as demonstrated by Figure 16, below.

Figure 16 – Role of Respondents in the Imports Value Chain



11.2.3 Public forums held in each of the major cities

Booz Allen conducted a number of open forum meetings in major cities across Australia. Advertisements were run in all national and state and territory capital city newspapers on Friday 17 March 2006. Additionally, it was run on the Lloyds List Web site.

The format of discussions in the public forums/roundtables was to recognise that difficulties had occurred in the implementation of the ICS on 12 October 2005, acknowledge the actions taken in the short to medium term to overcome these difficulties, assess the current situation including any outstanding remedies that remained to be delivered, assess the impact of the ICS on the current business situation and identify ways to maximise benefits from the ICS in the future.

The public forums were conducted in the following locations:

- ▶ Perth – 20 March, 9am-12noon: Ascot Quays Hotel, 150 Great Eastern Hwy, Ascot
- ▶ Melbourne – 21 March, 9am-12noon: Ciloms Airport Lodge, 398 Melrose Drive, Tullamarine
- ▶ Sydney – 22 March, 9am-12noon: Mercure Hotel Sydney Airport, 20 Levey St, Wolli Creek
- ▶ Brisbane – 23 March, 9am-12noon: Morgan Room, Christie Corporate, 320 Adelaide St, Brisbane

A total of 15 individuals attended the public forums.

11.2.4 Handwritten submissions

In the advertisements discussed under the previous heading, an invitation was extended to submit written papers or emails to

icsreview@bah.com

Or by mail to:

ICS Review

Booz Allen Hamilton

Level 7, 7 Macquarie Place

Sydney NSW 2000

Further information about the review including full terms of reference was made available at: <http://itools.customs.gov.au/boozallenicsreview/>

A total of 13 written/email submissions were received.

11.3 Feedback From Industry

Feedback from industry from all four streams was consolidated and for ease of display, has been organised into the following categories:

- ▶ Impact on industry of the implementation of the ICS;
- ▶ The potential for further benefits;
- ▶ Key lessons learnt;
- ▶ Improved communication;
- ▶ Future process improvements; and

- ▶ Business and market changes to be supported by the ICS

11.3.1 Impacts on industry of the implementation of the ICS

Initial impact of the implementation of the ICS on 12 October 2005

In the days immediately following implementation of the ICS there were few clearances made. Participants believe that this was due to:

- ▶ Failure by some third-party software packages to interface perfectly with the ICS;
- ▶ Large volumes of transactions being processed through Customs Interactive. This web-based product was not initially supported on a server that was adequate for the volume of traffic. This slowed the system almost to a stand-still;
- ▶ The strict matching requirements needed precise data input that industry was not accustomed to. This resulted in a large number of entries not being accepted by the ICS;
- ▶ There was a lack of a diagnostic capability to determine why these entries were not cleared; and
- ▶ The Help Desk was not sufficiently experienced and was just as hampered as industry in attempting to diagnose problems.

Many staff from customs brokering firms were required to work twelve-hour days, seven days a week for the first two weeks until workarounds, developed by both central and local Customs staff, broke the backlog of entries awaiting clearance.

Some importers had to wait for goods to be supplied in the period shortly before Christmas. In some cases they had to pay additional storage costs for goods awaiting clearance.

Industry recognised that local Customs staff shared the same stresses and worked just as hard to rectify problems as they did. Customs staff manually intervened in order to move cargo off the docks, and Customs and industry worked overtime together to sort out the problems.

Impact of the ICS implementation in the months following 12 October 2005

Participants observed that the rate of import clearances returned closer to normal following:

- ▶ Upgrades by some third-party software providers;
- ▶ Customs relaxing some of its matching requirements; and
- ▶ A major effort by local Customs staff to provide advice and workarounds.

However, participants also observed that considerable amounts of time were consumed if entries were not cleared using the initial data input.

They blamed this excessive time consumption on the lack of a diagnostic facility in Customs Interactive.

Ongoing impact as at 21 March 2006

Some participants claimed that as a group, Customs brokers now require 20% more time than pre-October 2005 to enter data and get clearances.

These increased costs have been passed on to importers by most brokers (one importer said that two brokers had increased their costs to him by 40%).

A participant noted that the requirement to process cargo at a container level (changed business process) means that while Customs collects the same amount of duty, there is potential for some inaccuracies when duty is pro-rated across individual importers.

There is ongoing irritation among participants when goods go “on hold” instead of being cleared after all data has been correctly entered and matched and duty paid.

The lack of detail (such as a customer reference number) to identify electronic financial transactions such as direct bank debits for duty and GST with a particular client or cargo continue to frustrate participants’ accounts departments.

Some users of specific third-party software had significant problems associated with:

- ▶ Restricted ability to do multiple entries per screen;
- ▶ Not receiving e-mails alerting them when their cargo had cleared quarantine; and
- ▶ Difficulty with submission of Automatic Entry Processing (AEPs).

Participants generally felt that customs brokers are continuing to carry a processing burden as the entire supply chain is neither fully electronic nor willing and competent to enter complete and accurate data.

There was strong support from participants for local Customs staff as they are seen as hard working and knowledgeable about the industry. However, Customs management in Canberra is seen as “them” and “they” who lack any practical knowledge of the industry, have a regulatory attitude rather than a genuine consultative approach as a consequence of their experience in other government departments, are detached from what really goes on and are thought to be the root cause of many problems in the industry.

Some brokers and importers are still incensed that replies to letters and calls to Customs have still not been returned and that there has been no official recognition of, or apology for, the problems associated with the introduction of the ICS.

Some industry members believe that the ICS has achieved its aims and is easy to use. They no longer need to use the Help Desk and indeed believe that many of the initial problems with implementation were due to failures in third-party software, not inadequacies in the ICS.

11.3.2 *The potential for further benefits*

Accredited client/service provider program – Participants believed that introduction of this program would allow accredited brokers to defer payment of duty and entry of the full data required for clearance until the end of the month. This would benefit industry by:

- ▶ Allowing the brokers more time to concentrate on the accuracy of the data provided;
- ▶ Simplifying the calculation of duty and payment processes;
- ▶ Elevating accredited brokers in a commercial sense above non-accredited brokers. This would provide an added incentive to conform to Customs requirements;
- ▶ Smoothing out customs brokers' work load;
- ▶ Decreasing the time taken to clear cargo; and
- ▶ Cutting costs for the client.

Simplifying the calculation of duty and payment processes was seen by participants as a pre-requisite for this program to be successful. It would have to be similar to the deferral of GST with a standard percentage applied to all goods.

Flexible digital certificates – Some participants suggested that digital certificates should be associated with individuals and be transferable between computers. This would allow people the option to move geographically and still be able to lodge a customs entry. At present company certificates are associated with a specific computer, although personal certificates are mobile across multiple computers.

Mandate earlier reporting by air carriers and shipping lines – Participants wanted air carriers and shipping lines to take more responsibility for data accuracy and timeliness. Their case was that cargo reporting by customs brokers is required by the current Customs legislation to be completed 48 hours before a ship arrives in Australia. The legislation makes it illegal to submit a late entry. However, submitting a late entry occasionally is unavoidable because shipping lines often delay sending data to brokers in order to delay their payments. Additionally the information is often not detailed or accurate enough. If Customs is serious about this requirement it should mandate that the shipping lines and air carriers report earlier and with greater accuracy. This would push the responsibility up the supply chain similar to the requirements in the US.

Improved Help Desk support – Participants believe that currently any individual Help Desk worker is expected to assist with any problem that arises. Many experienced industry people believe that this is too big an ask. Instead they believe that a select group of people should be trained to become specialists in a number of discrete areas. The lower level Help Desk workers could then refer difficult questions to recognised Customs experts.

Appropriate staffing – One group of participants suggested that charging the people who created the system with the responsibility to fix it was not a good idea as they may tend towards denying that there was ever a flaw in their original work because of their vested interest in the project.

Appropriate governance – The same group suggested that there is a need for a new advisory board incorporating Customs and industry representatives that could create a shared vision of what government and Industry want for the future. Once this vision was agreed it would be necessary to determine the IT functionality required to achieve it. This determination should be used as a basis for future enhancements/ tweaks or rectifications of the ICS. This determination would dictate the focus and even the future of the IAG.

One gateway – Customs brokers who participated were comfortable with the possibility that Customs could be broken up in the future and its current responsibilities allocated either to other departments or a “super agency”, thus requiring them to deal directly with other departments, such as ATO, AQIS, AFP, Treasury. However, this comfort rested on the pre-condition that there was only one gateway into government and that this gateway was the ICS or its equivalent.

Global supply chain visibility – Some participants had thought beyond the next twelve months. Their thoughts involved ensuring that software development was done to support a shared government and industry vision. As an example, software is currently being developed independently in Melbourne with the aim of tracking shipping vessels as input to monitoring the end-to-end global supply chain. If implemented, this software would:

- ▶ Increase intelligence on cargo movements and enhance border security;
- ▶ Avoid duplicating data entry;
- ▶ Increase the timeliness and accuracy of reporting; and
- ▶ If the ICS had the functionality to fit into this broader framework, this visibility of the global supply chain could be extended to include landside movements and duty payments.

This would be a major change from the current situation where the ICS is perceived by many participants to be a black-hole where information

is sucked in and no useful information is returned to the importing community.

11.3.3 Key lessons learnt

Recognition that this is not just an IT change – The last big change in the Customs reporting system is said to have occurred 25 years ago and that was an obvious migration from paper to electronic customs entries. In contrast the implementation of the ICS changed:

- ▶ Format
- ▶ Code entry
- ▶ Business processes
- ▶ Matching criteria

Participants felt that the size of the changes must be recognised and the need for each change must be sold to industry if they are to work hard to achieve it.

The importance of project management skills – Participants felt that Customs should have gained basic project management skills, as required by a large IT implementation project such as the ICS. Participants felt that a well-managed project would have been characterised by:

- ▶ Depth and breadth to the industry consultation;
- ▶ Industry listened to and suggestions taken on board;
- ▶ A state-by-state staged launch or a period of dual ICS and Compile system running;
- ▶ Ownership of the project and system;
- ▶ Users and software developers trained;
- ▶ End-to-end system testing with real data from day-to-day operations; and
- ▶ A “play-pen” provided – more than screen dumps and a CD-Rom. Customs needed to reassure industry of what would happen not just what should happen. Stepping through a day in the life of a perfect situation without realistic match-up problems isn’t sufficient.

Realistic matching criteria – Introducing the extra level of matching was viewed by participants as the same mistake made in the early 90s when it was decided to roll back excess matching requirements. The matching problem is caused by an unrealistic cascade reporting process requiring:

- ▶ The Ocean Bills of Lading to match, and
- ▶ The use of alpha characters and spaces not just voyage numbers.

It is important to know what degree of matching is achievable, but equally important is the visibility of cargo status and diagnostic tools to determine the causes of mismatches if they occur.

The need for a feedback loop – Many complaints and suggestions have been given to the Industry Action Group (IAG). This has served as a positive step in assuring industry that corrective action will be taken. However, although industry is aware of the discussions that are held at the IAG, participants don't know what the IAG has decided to action, what the current status of action items is, or when the outcomes of the agreed actions will be delivered. In order for the IAG to be more effective and give industry the sense that they are really being listened to, more clarity in the feedback loop is required.

In addition, the web-based survey revealed the following lessons:

- ▶ Consult and listen to industry;
- ▶ Employ end-to-end system testing;
- ▶ Stage the implementation by state or port;
- ▶ Place more emphasis on retaining experienced Customs officers;
- ▶ Choose a more appropriate period to implement future IT changes;
- ▶ Apply correct project management techniques;
- ▶ Communicate better with Quarantine;
- ▶ Have contingency plans in case of IT system failures; and
- ▶ Provide a training manual or user guide.

Australia Post report against UPU (Universal Postal Union) documentation not airway bills or vessel IDs. The survey participants were disappointed that the ICS was not designed to accommodate for this despite some Customs consultation with Australia Post prior to the ICS implementation.

11.4 Improved communication

The majority of survey participants would like Customs to communicate with them:

- ▶ Through industry bodies, such as Shipping Australia and the CBFCA, or
- ▶ By direct communication i.e., fax and e-mail.

Participants would like Customs communication to:

- ▶ Be more in advance of events;
- ▶ Place more importance on attendance of seminars; and
- ▶ Involve more education and training employing operationally-based workshops canvassing real-life scenarios.

Participants also commented that industry and Customs would benefit from:

- ▶ An ICS course or user guide specific to different industry areas;

- ▶ Detailed draft plans of IT changes put out by Customs for comment by industry before implementation;
- ▶ Customs listening to the communication coming from industry;
- ▶ Better e-mail lists so that all industry members receive the same information and have an opportunity to attend all seminars;
- ▶ The provision of local Customs contact numbers rather than just a “1300” number in Canberra;
- ▶ Expert ICS trainers/teachers visiting industry premises; and
- ▶ Australia Post being represented in industry groups.

11.5 *Future process improvements*

Survey participants commented that the ICS:

- ▶ Requires more diagnostic tools to determine the reason for mismatches and why cargo goes on hold (Booz Allen: comments received prior to the new diagnostics facility being introduced);
- ▶ Needs to be more user-friendly with fewer screens to navigate, more shortcuts and “cut and paste” options;
- ▶ Should provide reports e.g., payment reports, with information that meets industry needs;
- ▶ Should facilitate the quick printing of declarations that brokers have to provide to clients automatically once duty is paid; and
- ▶ Should strip out alpha and other non-numerical characters from voyage numbers and ocean bills of lading to make matching easier.

11.6 *Business and market changes to be supported by the ICS*

The majority of participants provided no response to this question. However, those that did respond noted that:

- ▶ They would like no more system “enhancements” and felt that they needed to assimilate changes from the current ICS implementation;
- ▶ Industry will continue to experience pressure to speed up Customs clearance procedures;
- ▶ The ICS should support a paperless environment;
- ▶ They would like a system that supported the deferral of duty payments; and
- ▶ In future, the World Customs Organisation may adopt a system of unique consignment references and if so, the ICS should be used as a tool to make it easier for industry to assimilate and comply with this system.

12 Appendix 2 – List of Customs and Industry Interviewees

Stakeholder group		Title / position
Customs Brokers/Agents	Peak Body	Customs Brokers and Forwarders Council of Australia (CBFCA) – David Katte, Bob Wallace, Steve Morris, Paul Zalai
	Individual Companies	Frank Cridland/David Katte Brokerage (Sydney) Begley Hobba and Manton (Melbourne) – John Begley, Shawn Begley, Fred Gibson Milne Dunkly (Melbourne, Sydney) Peter Hodder (Melbourne)
Freight Forwarders/Logistics Providers	Peak Body	Australian Federation of International Forwarders (AFIF) – Brian Lovell
	Individual Companies	UTI – Tony Wenham UAC – Peter Levett Mainfreight Owens International AMI Wholesale Freight – Peter McNamara, Chris Channell Hudson Global – Phil Hudson, Alan O’Leary Halford Youngs Schenker
Air Carriers	Peak Body	Conference of Asia Pacific Express Couriers (CAPEC)
	Large	Qantas – Trevor Long, Richard Emery, John Mcloughlin Fedex – Mustafa Kadayifci UPS DHL – Stephen Ly TNT
Ocean Carriers	Peak Body	Shipping Australia – Llew Russell, Michael Phillips, Alan McDermid Hetherington Kingsbury Shipping Agency INCHCAPE Shipping Services – John McGoogan, Richard Overton
Stevedoring/Terminal Operators		Patrick Terminals – Adrian Sandrin P&O Ports ANZ – Matthew Carley
Software/Systems Providers to the International Trading Private Sector	External (commercial)	1-Stop Connections (Bureau for Stevedores) – Michael Bouari, Ruth Thompson Gavin Millman & Associates – Gavin Millman Eagle Datamation International – Richard White, Cate Shanahan Hi-Tech Freight Solutions – Douglas Meuross Computer Associates en- Lisa Parsons, Michael Blyton
Other Associations and Agencies		Australian Chamber of Commerce AQIS – Robert Murphy (National Manager) ABS – Bronwyn Driscoll Law Council of Australia
Importer	Large	Coles Myer – Tom Curtis
Internal Stakeholders	NSW	David Collins (Regional Director) Jane Bailey (Cargo and Trade) Jim Fleming (Compliance Assurance)

Stakeholder group		Title / position
Internal Stakeholders (continued)		Gayle Brown (Border Intelligence and Passengers) Myron Bosak (Cargo and Trade) Peter Callaway (Sea Cargo Compliance)
	Victoria	Jaclyne Fisher (Regional Director) Geoff Johannes (Regional Manager) Graham Krisohos (Compliance Assurance)
	Head Office	Michael Carmody (CEO) John Drury (DCEO) John Jeffery (DCEO) John Brocklehurst, CFO Steve Kirk (Acting CFO) Matthew Corkhill (Cargo Systems) Steve Moore (Cargo Systems) Tim Chapman (Cargo) Philomena Carnell (Trade) Gail Batman (Border Intelligence and Passengers) Peter Thomson (Intelligence) Marion Grant (Compliance and Enforcement) Jeff Buckpitt (Compliance) Sue Pitman (Cargo and Trade) Murray Harrison (IT) Michelle Kinnane (IT) Peter Naylor (IT) Craig Langford (IT) Rob van Rensburg (IT) Peter Brennan (IT) Dane Cupit (Cargo Systems)

13 Appendix 3 – Program Management Framework

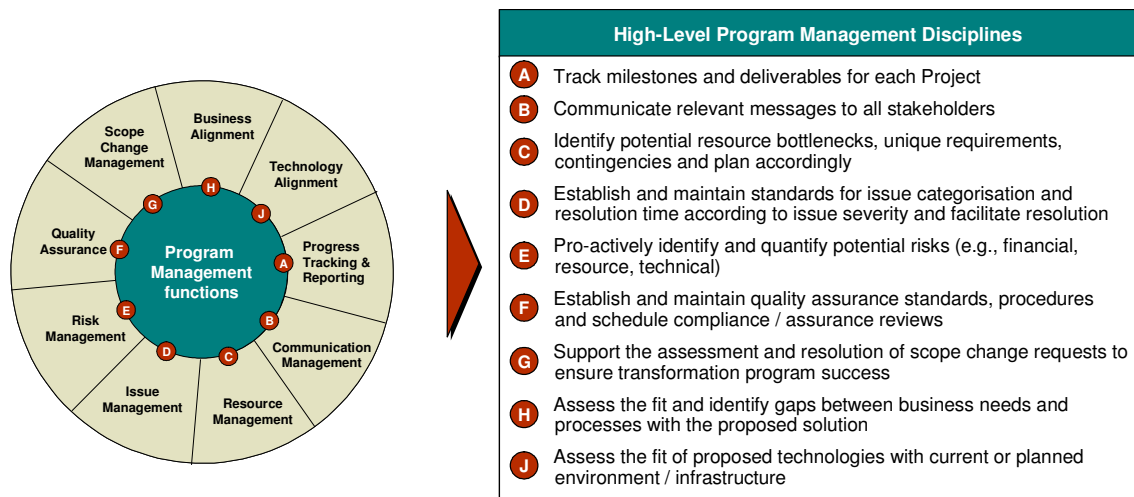
Program Management is the management of a group of projects that are directed towards a common purpose. In the case of the ICS, projects would include (for example):

- ▶ IT development
- ▶ Industry listening and engagement
- ▶ Process redesign
- ▶ Strategy and objectives
- ▶ Measures and metrics
- ▶ Demand management of tactical measures
- ▶ System architecture
- ▶ Deployment strategies and planning
- ▶ Training and communications

These projects have many interdependencies and impact the same groups of internal and external stakeholders. The purpose of the Program Management function is to manage these interrelationships and steer the individual projects to successful outcomes *for the Program overall*.

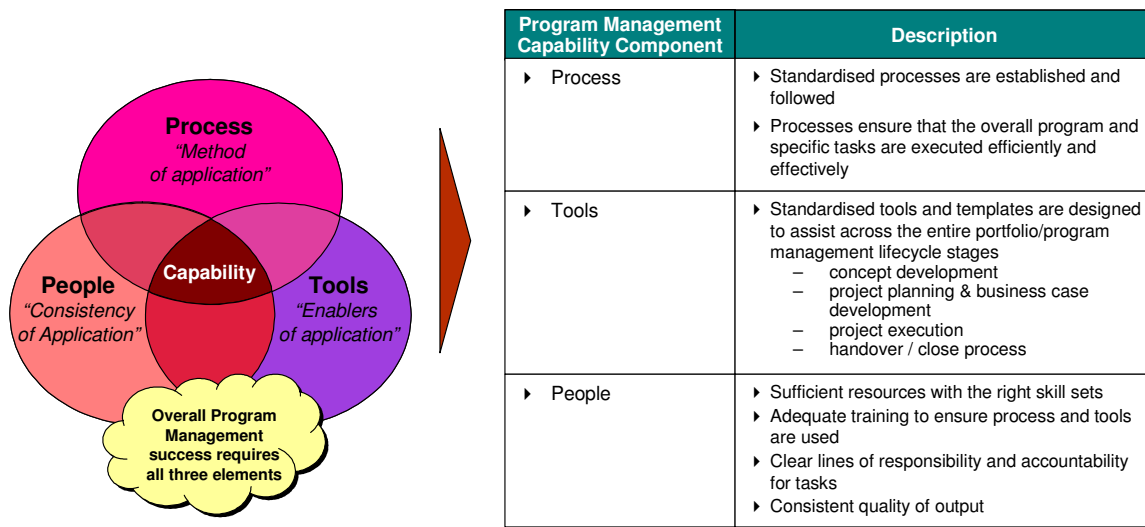
Booz Allen uses a program management framework based on a structured approach to nine disciplines, as shown in Figure 17.

Figure 17 – Booz Allen's Program Management Framework



Each of these disciplines works through a combination of Process, People and Tools, each of which must be operating at a high level for the discipline to work well. This is illustrated in Figure 18.

Figure 18 – People, Process and Tools in Program Management



Each of the nine disciplines can be further broken down to their constituent parts, each of which has procedures, required outcomes and objectives. An example is shown in Figure 19. Together, the elements of a framework such as this, or any similar comprehensive example, can provide Customs with a solid basis on which to manage and control the ICS program of work for the future.

Figure 19 – Program Management Outputs

PMO Function	PMO Output	Description
A Progress Tracking & Reporting	▶ Program Plan Management	▶ The document used to guide program execution and control
	▶ Program Milestones & Deliverables Management	▶ Tracking of significant events in the program that lead to the completion of deliverables
	▶ Program Critical Path Management	▶ The series of activities that determine the length of the program
	▶ Program Financial status	▶ Status of the program budget Vs actual expenditure and plan
	▶ Interdependency management	▶ Identification on the program plan of module interdependencies and the associated management to ensure any slippage does not affect the program's critical path
	▶ Status reporting	▶ Providing information to the program steering committee and sponsor as to actual program progress versus planned
B Communications Management	▶ Communications Plan	▶ The document outlining the actionable steps to implement the program communications strategy
C Resource Management	▶ Program Resource gaps	▶ Resource requirements to perform the work detailed in the program plan versus actual resource available
D Issue Management	▶ Program Issues Register	▶ Document detailing program-level issues requiring resolution
	▶ Program Risk Register	▶ Document detailing program-level risks requiring resolution
E Risk Management	▶ Program Risk Register	▶ Document detailing program-level risks requiring resolution
	▶ Program Risk Mitigation Plan	▶ Document detailing mitigation actions to address program risks
F Quality Assurance	▶ Program Deliverable management	▶ Review process to assess program deliverables against documented deliverable
G Scope Change Management	▶ Scope Change Request Management	▶ Report to formalise changes to Module Scope and associated supporting documentation
H Business Alignment	▶ Program Gap analysis	▶ Process to analyse potential program gaps identified at the Steering Committee and recommendations for action
J Technology Alignment	▶ Technology Gap analysis	▶ Process to analyse potential program gaps and assess alignment of proposals with technical infrastructure/capacity

14 Appendix 4 – Glossary of Terms

Customs uses many specific terms that can be confusing. For ease of understanding of this report, we have included a glossary with brief explanations of each term.

Term or Acronym	Explanation
ABS	Australian Bureau of Statistics
AEP	Automatic Entry Processing
Alert	Set of entity-based criteria, such as an importer's name or address, used to identify consignments for further scrutiny
AQIS	Australian Quarantine and Inspection Service
ATO	Australian Tax Office
CAN	Customs Authority Number. Under the ICS, this is a collective term for Export Declaration Number and Customs Reference Number
Cargo Report	Information submitted by the owner or agent of the cargo relating to goods arriving in or departing from Australia.
CCF	Customs Connect Facility – the means of connecting to Customs and the ICS via the Internet or dedicated communications lines
CDMS	Client Data Management Strategy
CI	Customs Interactive: a web-based system that allows online interaction with the ICS
CMR	Cargo Management Re-engineering project
CobiT	Control Objectives for Information and related Technology – an audit framework for IT
CRA	Customs Risk Assessment
CRE	Customs Research Environment
CTO	Cargo Terminal Operator
DITR	Department of Industry, Tourism and Resources
DOTARS	Department of Transport and Regional Services
Drawbacks	The refunding of import or excise duties paid on imported goods which are exported in the same state as they were imported, or incorporated into other goods which are exported
EDI	Electronic Data Interchange – an automated paperless system that permits transmission of invoices, purchase orders, and other business records, in a standard electronic format, between corporations, over a computer network
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport. EDIFACT is the International EDI standard introduced by the United Nations Economic Commission
FTE	Full Time Equivalent – one person for one standard work day
GST	Good and Services Tax
ICS	Integrated Cargo System – the integrated IT system that replaces legacy cargo management systems
Matching	Matching the data content of the Ocean Bill of Lading with the lower order bills of lading
NIS	National Intelligence System
OBL	Ocean Bill of Lading
Out-turn Report	A record of the physical deconsolidation or unpack of cargo

Part Shipment	A shipment that arrives as a planned part shipment, or where there is an error in sending the goods. The latter scenarios occur where there is short shipment, over-carriage, short landing, short-packed, etc.
Profile	Set of non-entity based search criteria used to identify a general class or type of cargo for further action
QSP	Quality Software Products – financial management information system used by Customs
TAPIN	Tariff And Precedents Information Network application
TARCON	Tariff Concession application
TEU	Containers are measured in twenty-foot equivalent unit (TEU) terms. Internationally approved containers come in two types: 20ft long and 40ft long
Underbond Movement	The movement of cargo which is subject to Customs control
YTD	Year To Date