



ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT



FORUM ON TAX ADMINISTRATION: TAXPAYER SERVICES SUB-GROUP

Information note

Tax Reference Model—Application Software Solutions to Support Revenue Administration in Selected Countries

March 2010



CENTRE FOR TAX POLICY AND ADMINISTRATION

Table of Contents

	Page
About This Document	3
Summary	4
I Background	5
II Survey Approach, Responses, and Key Findings	7
 Annexes	
1 Software solutions by Capability as Reported by Revenue Bodies	9
2 Extract from FTA Taxpayer Services Group – Scoping document / terms of reference – 15 June 2009	34
3 Tabular View of Responses Provided	41
 Diagrams	
1 Australian Taxation Office Capability Model	7

ABOUT THIS DOCUMENT

Purpose

This note summarises information provided by revenue bodies in twenty OECD member countries regarding application software solutions, planned or implemented, to support revenue administration. This information is intended to provide members with a shared view of a reference model for revenue administration including the technologies used by different OECD Tax Administrations in the delivery of core taxpayer services.

This information supplements the information collected from the 2005/06 Survey which highlighted a diverse range of application software solutions in use or planned for future use.

Similar to the 2005/06 survey this survey provides an opportunity for member countries to seek and/or share information and experiences when considering change initiatives where new or redeveloped application solutions are required to deliver taxpayer services.

Background

Since its establishment in July 2002, the Forum on Tax Administration (FTA), a subsidiary body of the OECD's Committee on Fiscal Affairs (CFA), has operated with the broadly stated mandate *to develop effective responses to current administrative issues in a collaborative way, and engage in exploratory dialogue on the strategic issues that may emerge in the medium to long term.* To carry out this mandate, the Forum's work is directly supported by two specialist Sub-groups—Compliance and Taxpayer Services (previously e-services)—that each carry out a program of work agreed by member countries.

The Taxpayer Services Sub-group exists to provide a forum for members to share experiences and knowledge of approaches to taxpayer service delivery, in particular through the use of modern technology. In this context, it is expected to: 1) periodically monitor and report on trends in taxpayer service delivery, with a particular focus on the development of electronic/online services; 2) examine ways to promote the uptake and use of electronic services by revenue bodies; 3) examine options for cross-border administrative simplification and consistency; and 4) assist, as appropriate, other groups of the CFA. This document is a by-product of the Sub-group's work.

Caveat

National revenue bodies face a varied environment within which to administer their taxation system. Jurisdictions differ in respect of their policy and legislative environment and their administrative practices and culture. As such, a standard approach to tax administration may be neither practical nor desirable in a particular instance.

The documents forming the OECD tax guidance series need to be interpreted with this in mind. Care should always be taken when considering a country's practices to fully appreciate the complex factors that have shaped a particular approach.

Inquiries and further information

Inquiries concerning any matters raised in this information note should be directed to Richard Highfield (CTPA Tax Administration and Consumption Taxes Division) at e-mail (Richard.highfield@oecd.org)

Summary

This note summarises information provided by revenue bodies in twenty countries to a 2009 survey regarding application software solutions, both custom-built and commercial off-the-shelf (COTS), planned or being used to support revenue administration.

The aim of this work was to provide an inventory of solutions being adopted by national revenue bodies to support the technical architecture of revenue bodies' IT systems and to identify areas of commonality in approach, thus facilitating cross-country exchanges of experiences to assist future decision-making in this area.

Given the nature of the survey instrument and the varied responses, only limited analysis is possible from the information provided. However, the analysis does show that in some areas there are common technology solutions to tax administration functions, and these are highlighted in capability breakdown in Annex 2. The data tables in Annex 3 provide a tabular view of the responses provided.

The key findings are as follows:

- Overall, the survey responses indicate there is a diverse range of application software solutions in use or planned for future use, and provides an opportunity for member countries to seek and/or share information and experiences when considering change initiatives where new or redeveloped application solutions are required.
- Custom-developed solutions are universal for the Revenue Management capability. While not specifically provided in the survey responses, the incremental development of tax legislation has resulted in countries having individual technology solutions for different tax types. Through modernisation/redevelopment programs a number of countries are seeking to provide a common (integrated) solution for different tax types. COTS solutions are commonly used in Online and reporting capabilities.
- The most common vendors across all capabilities are Oracle and IBM. SAS is commonly used in Analytics and reporting.
- Mexico has the largest penetration of COTS solutions across all capabilities based largely on the Oracle suite.
- Java is the most common development platform used by administrations.

Members have agreed that in light of the potential benefits to be derived, a proposal to undertake further work aimed at exploring the development of a common reference model should be made to the Forum's Bureau.

Tax Reference Model—Application Software Solutions to Support Revenue Administration in Selected Countries

I. Background

1. At the October 2008 meeting of the FTA Taxpayer Services Sub-group in Vienna, delegates were presented with perspectives from a number of commercial technology vendors to assist the group to better understand:
 - how future technology development would enable new taxpayer service initiatives and approaches to be developed; and
 - what challenges revenue bodies may face in dealing with a new generation of taxpayers who have grown up using different ways of using technology to communicate and obtain information.
2. During subsequent discussions, the group expressed interest in keeping abreast of the technologies delegates' revenue bodies are deploying and, to this end, it was suggested that the development of a shared view of a reference model for revenue administration may be helpful to many members.

Previous work in this area—the 2005 survey

3. Some similar work was undertaken following the September 2004 meeting of the sub-group where Australia undertook a project to gather and share information about systems, software and processes being redeveloped, replaced or upgraded. A survey, using the Australian Tax Office's (ATO's) Capability Model as the foundation template, was initially conducted with a limited group of member countries - Australia, Canada, UK and USA. The information gathered and findings were shared with the sub-group at the September 2005 meeting.
4. The ATO's Capability Model encompassed, at the highest level, four core capabilities (channel delivery, client relationship management, revenue management and case & work management) with four supporting capabilities (outcome improvement, plan & manage enterprise, develop new products and services & enablers).
5. The original survey was later extended to other interested countries with The Netherlands, New Zealand and Norway providing input – this was incorporated into the final report 'Application Software Solutions Being Used to Support the Technical Architecture of Selected Revenue Bodies' published in March 2006 which noted "...there is a diverse range of application software solutions planned or in the process of being implemented while, in relation to some capabilities (such as reporting, data services and workforce management), there is some commonality in the solutions in use or being deployed."
6. Subsequent unpublished updates using the capability model template were completed in April/May 2008 by a small number of interested revenue bodies from Australia, Canada, New Zealand, Singapore, UK and USA.

The 2008/09 survey

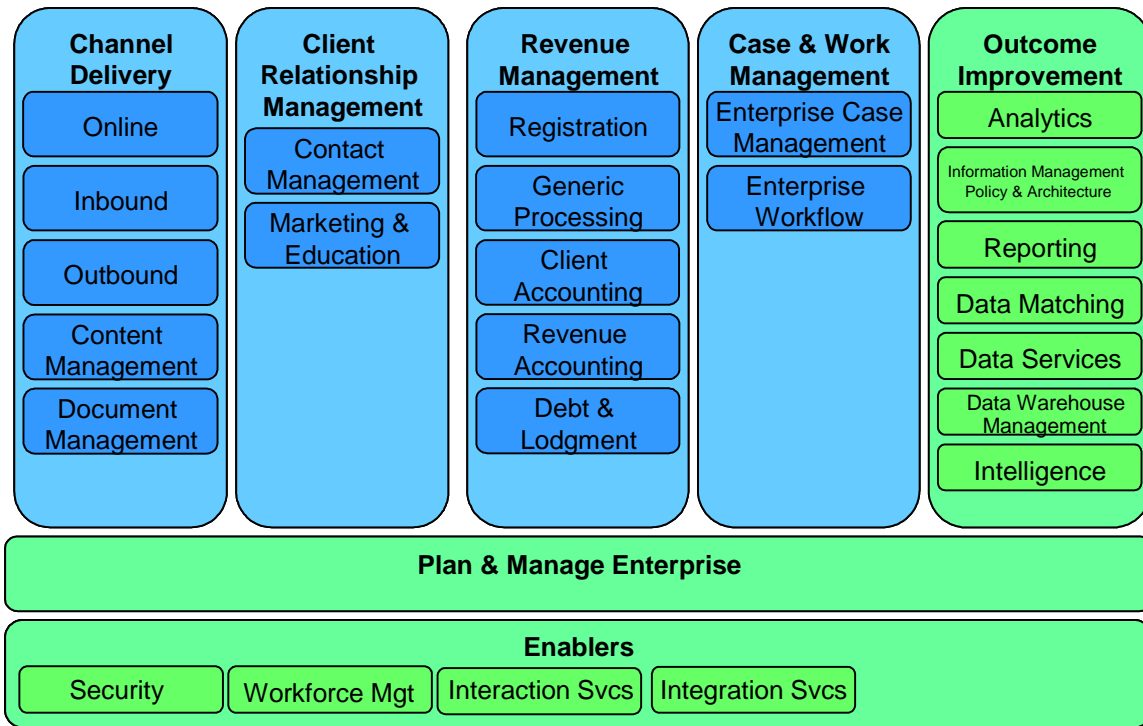
7. At the October 2008 Taxpayer Services OECD meeting, it was proposed to make use of this earlier work (and the previously-used capability model template) to extend the survey to a wider range of countries and to develop a more comprehensive view of the technical solutions/platforms (including commercial packages, transfer solutions and bespoke applications) being used/planned to support the various tax administration capabilities.

8. The purpose of the work was to provide members with a shared view of a reference model for revenue administration including the technologies used by different OECD revenue bodies in the delivery of core taxpayer services. It is also an opportunity for member countries to seek and/or share information and experiences when considering change initiatives where new or redeveloped application solutions are required to deliver taxpayer services. Several technology vendors who presented at the Sub-group meeting in Vienna (i.e. Microsoft and IBM) commented that should revenue bodies in OECD countries develop an agreed tax reference model, this would enable technology vendors to develop a strong business case to invest in tax vertical solutions. The benefits of this to revenue bodies could include:
 - Greater use of commercial solutions rather than custom developed solutions.
 - Reduced costs as the development/investment cost is shared.
 - Greater certainty of outcome and reduced risk as the solution is being used elsewhere.
 - Greater consistency across administrations enabling more sharing of solutions to common requirements.
9. The findings of the survey were to be captured in a draft report that would be circulated to all member countries for any additional input, leading to a final report for all members and the Forum's Bureau and the Committee on Fiscal Affairs (CFA).
10. The model was subsequently revised to make it more generic and one of the four supporting capabilities (Develop new products & services) was deleted, as this aspect was not seen as particularly relevant to the current survey task. The current version of the Capability Model and associated descriptions are included at Annex 1.

II. Survey Approach, Responses, and Key Findings

11. In order to be able to sensibly bring together information on the change work currently underway for each country and the technical solutions being used to deliver change, it was necessary to start with a common framework.
12. Given the lack of an agreed Tax Reference Model, and that the ATO’s capability model had been used in previous application solution surveys, it was agreed to continue with this model (with some changes from the earlier version). This capability model was developed as an early step within the ATO’s Change Program and is listed in Figure 1 below and described in detail in Annex 1.
13. Each OECD country was asked to overlay their current (or to be implemented within 12 months) applications solutions against this capability model.

Diagram 1 – Australian Tax Office Capability Model



14. Details of individual survey responses (reflecting completed survey responses from 20 member revenue bodies (i.e., Australia, Austria, Belgium, Canada, Chile, Denmark, France, Hong Kong, Ireland, Italy, Mexico, New Zealand, Norway, Singapore, South Africa, Spain, Sweden, Turkey, UK, and USA)) are set out in Annex 1 under the eight capabilities as shown in the ATO Capability Model. For each capability sub-element, there is a short summary of observations concerning the information provided.

Summary of key findings from country responses and next steps

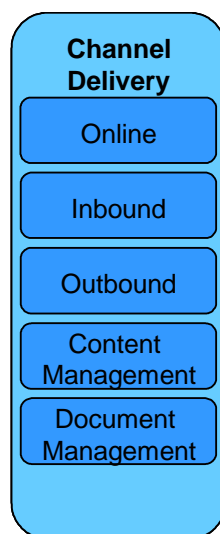
15. Given the nature of the survey instrument and the varied responses, only limited analysis is possible from the information provided. However, the analysis does show that in some areas there are common technology solutions to tax administration functions, and these are highlighted in capability breakdown below. The data tables in Annex 3 provide a tabular view of analyses undertaken on the responses provided.
16. The key findings were as follows:
 - Overall, the survey responses indicate there is a diverse range of application software solutions in use or planned for future use, and provides an opportunity for member countries to seek and/or share information and experiences when considering change initiatives where new or redeveloped application solutions are required.
 - Custom-developed solutions are universal for the Revenue Management capability. While not specifically provided in the survey responses, the incremental development of tax legislation has resulted in countries having individual technology solutions for different tax types. Through modernisation/redevelopment programs a number of countries are seeking to provide a common (integrated) solution for different tax types. COTS solutions are commonly used in Online and reporting capabilities.
 - The most common vendors across all capabilities are Oracle and IBM. SAS is commonly used in Analytics and reporting.
 - Mexico has the largest penetration of COTS solutions across all capabilities based largely on the Oracle suite.
 - Java is the most common development platform used by administrations.
17. These findings were discussed at the October 2009 meeting of the Sub-group. In light of the potential benefits arising from adoption of a more generic approach—as outlined in paragraph 8—it was agreed that there would be merit in undertaking further work to explore the development of a common reference model for revenue administration. A proposal with this objective in mind will accordingly be presented to the Forum's Bureau for approval.

Annex 1

Software Solutions by Capability as Reported by Revenue Bodies

This Annex sets out details of responses under the eight capabilities as shown in the ATO Capability Model, followed by a short summary of observations for the information provided.

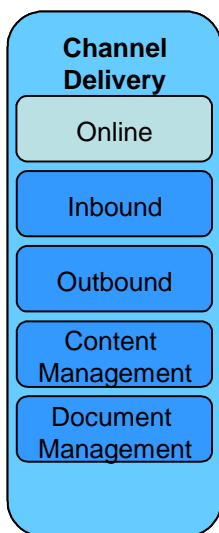
Channel Delivery



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Presentation Layer (Siebel to .Net integration from Singapore (Mar 05 – 2010) ▪ Mix of products – see further detail
Austria	<ul style="list-style-type: none"> ▪ WebSphere Application Server, Oracle EAI, Tomcat, Java Applications
Belgium	<ul style="list-style-type: none"> ▪ Java, BEA, Apache, J2EE, Custom applications
Canada	<ul style="list-style-type: none"> ▪ External Facing: web using Java, Java Swing, HTML, FTP, HTTPS ▪ Internal Facing: Attachmate, TSP, Java Swing, SAP, Attachmate) ▪ Custom Developed
Chile	<ul style="list-style-type: none"> ▪ Presentation Layer ▪ HTML, Java, JSP, CGI, GWT, Workshop-Weblogic
Denmark	<ul style="list-style-type: none"> ▪ BEA Application server ▪ Java
France	<ul style="list-style-type: none"> ▪ Custom html/JEE on JBoss
Hong Kong	<ul style="list-style-type: none"> ▪ Presentation Layer, Java, Jboss, WebSphere, DB2, SPRING
Ireland	<ul style="list-style-type: none"> ▪ Revenue i.e. website and Revenue On-Line Service (ROS)
Italy	<ul style="list-style-type: none"> ▪ Java, JSP WebSphere Application Server, PHP ▪ (migration to IBM WebSphere Portal Server)
Mexico	<ul style="list-style-type: none"> ▪ Presentation Layer (PeopleSoft Portal and .Net)
New Zealand	<ul style="list-style-type: none"> ▪ Presentation layer – Java, JBoss, JSP e-Services
Norway	<ul style="list-style-type: none"> ▪ Epi-server, ▪ .Net-platform
Singapore	<ul style="list-style-type: none"> ▪ Presentation Layer (Custom build using .Net)
South Africa	<ul style="list-style-type: none"> ▪ 11 inbound and outbound Channels identified – moving all channels to Websphere SOA based (XML) services in time
Spain	<ul style="list-style-type: none"> ▪ IBM https Server Websphere Ap. Server CICS transaction Server Lotus Domino. Our Own Applications.
Sweden	<ul style="list-style-type: none"> ▪ Internet technology, built with JEE/EJB
Turkey	<ul style="list-style-type: none"> ▪ Java, jsp, servlets, someone application server, xml, Aurora (inhouse) software development platform
UK	<ul style="list-style-type: none"> ▪ Presentation Layer ▪ J2EE (Weblogic) and Bespoke Shared Gov Services. ▪ Static WEB (IIS)
USA	<ul style="list-style-type: none"> ▪ Presentation Layer ▪ Java, JSP WebSphere Application Server ▪ .Net ▪ Peoplesoft PRM

Summary: Most agencies seem to have taken a custom build approach to this capability. However, in doing so they have been supported by tools predominantly from IBM (6 agencies using Websphere) and Oracle (also 6 agencies), but with a mix across Peoplesoft, BEA, and Weblogic). The Java (used in 12 agencies) is more prevalent than .Net (used in 5 agencies).

Channel Delivery - Online

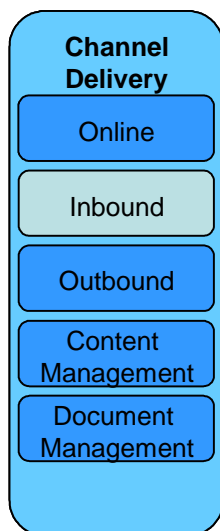


Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Custom applications such as Tax Agent and Business Portals, Australian Business Register, eTax ▪ Custom developed, largely .Net
Austria	<ul style="list-style-type: none"> ▪ Java, Gentic Portal.Node
Belgium	<ul style="list-style-type: none"> ▪ Custom build with Java and BEA
Canada	<ul style="list-style-type: none"> ▪ Custom Developed, CRA portal, calculators, PDF forms, SMART LINKS, SAP
Chile	<ul style="list-style-type: none"> ▪ New portal since Jan 2009 ▪ Java and C# Applications ▪ Multiple Custom Applications
Denmark	<ul style="list-style-type: none"> ▪ Existing developed Portal ▪ New BEA Portal as part of Change programme in 09
France	<ul style="list-style-type: none"> ▪ WS Axis (télé@ctes) ▪ CCN for UE (TVA 8th dir)
Hong Kong	<ul style="list-style-type: none"> ▪ Java, Jboss and internet mail
Ireland	<ul style="list-style-type: none"> ▪ Java Applications, Rich Internet Application (Flex), IVR and SMS, Secure Mail (Ironport)
Italy	<ul style="list-style-type: none"> ▪ Java, JSP WebSphere Application Server, PHP
Mexico	<ul style="list-style-type: none"> ▪ PeopleSoft Portal, PeopleSoft CRM, JackBe Ajax, .Net, Documentum WDK, WebSphere Application Server
New Zealand	<ul style="list-style-type: none"> ▪ Vignette, Custom Apps (ir-File, etc). Moving to IBM Websphere Portal ▪ Efile customised
Norway	<ul style="list-style-type: none"> ▪ MinSide, Altinn (.Net, Adobe), ▪ Internet portal based on Epi-server
Singapore	<ul style="list-style-type: none"> ▪ myTax Portal (Custom built using .Net)
South Africa	<ul style="list-style-type: none"> ▪ Single eFiling Channel – with functionality being expanded across tax types on an ongoing basis
Spain	<ul style="list-style-type: none"> ▪ Vignett Content Manager IBM Portal
Sweden	<ul style="list-style-type: none"> ▪ Portal built on top of Internet technology, Senselogic SiteVision
Turkey	<ul style="list-style-type: none"> ▪ GIB web site, ▪ Ebyn (e-declaration) ▪ Internet tax office, various web services, ▪ e-invoce(planned)
UK	<ul style="list-style-type: none"> ▪ BEA WebLogic, Spring and Struts; EMC eRooms; Adobe; Livecycle
USA	<ul style="list-style-type: none"> ▪ Vignette ▪ PeopleSoft CRM ▪ Modernized e-Services - Custom

Summary: The most commonly used COTS are namely PeopleSoft (2) and Vignette (3). Most countries have custom built applications using a range of technologies. Most common applications platforms are:

- Java (6)
- .net (4) and
- IBM Websphere

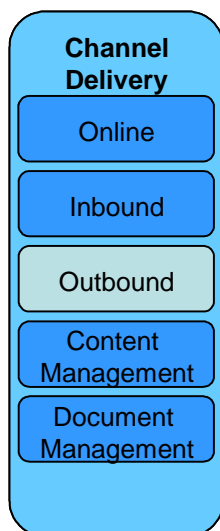
Channel Delivery - Inbound



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Multiple inbound applications ELS, ECI, EAS, MIPS, I2I, Sterling Commerce ▪ .Net, Java, Universe, Cobol, VB, C++, Adobe, Secure FTP
Austria	<ul style="list-style-type: none"> ▪ Java, PL/I, XML
Belgium	<ul style="list-style-type: none"> ▪ Java, struts, XML
Canada	<ul style="list-style-type: none"> ▪ XCOM, FTP, EDI, XML HTTPS, SOAP, GIS, eBMS, MQ Series, 2D Bar Code Scanning, Telephony, Custom Developed
Chile	<ul style="list-style-type: none"> ▪ IVR (Intervoice)- CTI-ACD (Mitel) ▪ ASR (RealSpeak)-TTS-OSR (Nuance), Callrex
Denmark	<ul style="list-style-type: none"> ▪ Java applications ▪ Modernized e-services
France	<ul style="list-style-type: none"> ▪ Digitech products (tax bundles) ▪ XFB Gateway
Hong Kong	<ul style="list-style-type: none"> ▪ Internet, Linux HylaFax, WebSphere, Java (STRUTS), Oracle
Ireland	<ul style="list-style-type: none"> ▪ Web Services, IVR and SMS, OCR/ICR, Secure FTP
Italy	<ul style="list-style-type: none"> ▪ Java Applications
Mexico	<ul style="list-style-type: none"> ▪ Java Applications, C Applications and Web Services
New Zealand	<ul style="list-style-type: none"> ▪ Rightfax, Exigen, S.E.E mail, Periphonics
Norway	<ul style="list-style-type: none"> ▪ Oracle Enterprise servicebus ▪ AltInn (.Net, Adobe)
Singapore	<ul style="list-style-type: none"> ▪ OCR / ICR ▪ TIS eFlow software ▪ .NET customisation
South Africa	<ul style="list-style-type: none"> ▪ Mail Room ▪ over the counter - scanning into Enterprise Document Management and managed by case manager ▪ electronic submission
Spain	<ul style="list-style-type: none"> ▪ CCN/CSI EDITRAN
Sweden	<ul style="list-style-type: none"> ▪ IDA Systems SHS ▪ External central scanning ▪ Telephony, SMS
Turkey	<ul style="list-style-type: none"> ▪ Btrans (xml based offline data transfer system on internet), ftp
UK	<ul style="list-style-type: none"> ▪ Aspect; Kana Response & IQ; Captiva (being replaced by TIS eflow), Neurascript, A2iA, Witness
USA	<ul style="list-style-type: none"> ▪ Java Applications ▪ C# Applications ▪ Modernized e-File - Custom

Summary: A large number of custom built solutions with COTS support. Java (7) is commonly used as the application platform.

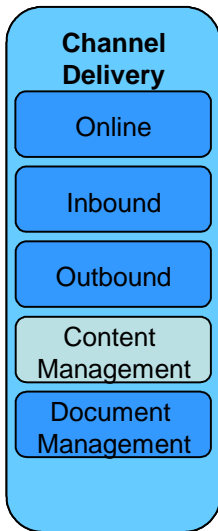
Channel Delivery - Outbound



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Existing output systems to be replaced. ▪ “Dialogue” system (progressively from April 05).
Austria	<ul style="list-style-type: none"> ▪ Java, PL/I, XML
Belgium	<ul style="list-style-type: none"> ▪ Adobe, Xerox, Middle office from Sefas, VOIP, Pitney
Canada	<ul style="list-style-type: none"> ▪ XCOM, FTP, Custom File Delivery, Elixer, Jasper, DocuMerge, Opti-Q
Chile	<ul style="list-style-type: none"> ▪ Predictive Dialler (Intervoice)
Denmark	<ul style="list-style-type: none"> ▪ Java applications ▪ Modernized e-services
France	<ul style="list-style-type: none"> ▪ XFB Gateway ▪ Etebac5
Hong Kong	<ul style="list-style-type: none"> ▪ Email, Fax ▪ e-Campaign
Ireland	<ul style="list-style-type: none"> ▪ Web Services, PDFs, SMS, Secure mail
Italy	<ul style="list-style-type: none"> ▪ Java Applications
Mexico	<ul style="list-style-type: none"> ▪ Java Applications, C Applications and Web Services
New Zealand	<ul style="list-style-type: none"> ▪ Expression, S.E.E Mail, Rightfax, Autograph Suite, E-xchange. Moving to Xpression for all print output.
Norway	<ul style="list-style-type: none"> ▪ Internet portal based on Epi-server
Singapore	<ul style="list-style-type: none"> ▪ Adobe application
South Africa	<ul style="list-style-type: none"> ▪ Voice – single VOIP based solution in place (commissioned and working across multiple call centres) and being rolled out and enhanced over the next 2 years. ▪ Single printing channel – Adobe, SMS, Email
Spain	<ul style="list-style-type: none"> ▪ CCN/CIS ▪ EDITRAN
Sweden	<ul style="list-style-type: none"> ▪ IDA Systems SHS ▪ External central printing ▪ Mail
Turkey	<ul style="list-style-type: none"> ▪ Static files on Ebyn and GIB web site (declaration, petition templates, help docs, etc.)
UK	<ul style="list-style-type: none"> ▪ Avaya; OCE, Kodak, Toshiba; Kern, Pitney Bowes, Bell & Howell, Gandlake
USA	<ul style="list-style-type: none"> ▪ Java Applications ▪ C# Applications

Summary: A large number of custom built solutions with COTS support. Java (5) is commonly used as the application platform.

Channel Delivery – Content Management

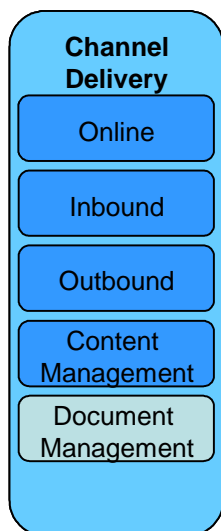


Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ IBM Content Manager/ Document Manager/ Records Manager, TRIM, NUIX, Sharepoint
Austria	<ul style="list-style-type: none"> ▪ Livelink, RedDot CMS
Belgium	<ul style="list-style-type: none"> ▪ Filenet
Canada	<ul style="list-style-type: none"> ▪ Saperion, GOC RDIMS, GOC Interwoven, IBM Filenet, PCMS
Chile	<ul style="list-style-type: none"> ▪ Custom application ▪ Unicenter Service Plus Knowledge Tools, CA
Denmark	<ul style="list-style-type: none"> ▪ CMS/DAP
France	<ul style="list-style-type: none"> ▪ SPIP / WordPress
Hong Kong	<ul style="list-style-type: none"> ▪ Documentum
Ireland	<ul style="list-style-type: none"> ▪ Alfresco, Autonomy, ▪ RevNet Intranet/portal
Italy	<ul style="list-style-type: none"> ▪ IBM WCM ▪ Possible migration to WCM Documentum
Mexico	<ul style="list-style-type: none"> ▪ Documentum Content Management
New Zealand	
Norway	<ul style="list-style-type: none"> ▪ Epi-server, Escenic
Singapore	<ul style="list-style-type: none"> ▪ Filenet for document management system
South Africa	<ul style="list-style-type: none"> ▪ Adobe Forms – XML to template forms / AIR for external Channels
Spain	<ul style="list-style-type: none"> ▪ Vignette Content Manager
Sweden	<ul style="list-style-type: none"> ▪ Sencelogic SiteVision
Turkey	<ul style="list-style-type: none"> ▪ DYIAS (Document management & workflow system) (planned in 12 months)
UK	<ul style="list-style-type: none"> ▪ EMC Documentum Autonomy IDOL ▪ MS Sharepoint
USA	<ul style="list-style-type: none"> ▪ Vignette

Summary: Most countries use COTS products including:

- Filenet (IBM) (3)
- Documentum (3)
- Sharepoint (2)
- Vignette (2)

Channel Delivery – Document Management



Country	Products used/ approach adopted
Australia	▪ IBM Content Manager
Austria	▪ Livelink
Belgium	▪ Filenet – Sharepoint
Canada	
Chile	▪ Documentum, Sharepoint, TAMINO
Denmark	
France	▪ Vignette+Selisa+CFT (Atlas) ▪ OSS (GAIA)
Hong Kong	▪ FileNet ▪ Xenos ▪ Oracle
Ireland	▪ Alfresco, Autonomy
Italy	▪ Documentum ▪ Sharepoint
Mexico	▪ Documentum Content Management ▪ EMC - eRoom ▪ MS - Sharepoint
New Zealand	▪ Lotus Content Manager, IBM Content Manager and IBM Content Manger ON Demand ▪ IBM Web Content Management
Norway	▪ ePhorte case-handling and archiving, ▪ IBM Content Manager OnDemand
Singapore	▪ Filenet ▪ .NET customisation
South Africa	▪ EMC -Enterprise Documentum and Captiva Solution – currently 4 large distributed – moving to more as needed
Spain	
Sweden	▪ eArkiv- custom built on top of EMC Documentum ▪ RIS - custom built
Turkey	▪ DYIAS (Document management & workflow system) (planned in 12 months)
UK	▪ EMC Documentum
USA	▪ Documentum ▪ Sharepoint

Summary: COTS products are used in most countries. The most common products are:

- IBM Content Manager (3)
- Filenet (2)
- Documentum (7), and
- Sharepoint (5)

Client Relationship Management

Client Relationship Management

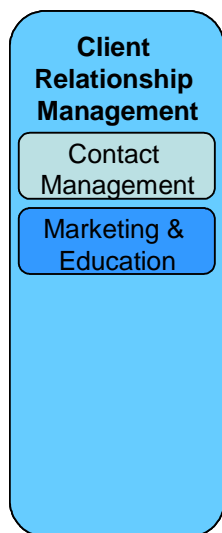
Contact Management

Marketing & Education

Country	Products used/ approach adopted
Australia	▪ Siebel CRM
Austria	▪ Java-, PL/I-Applications
Belgium	▪ Microsoft CRM Dynamics
Canada	▪ Custom Developed
Chile	▪ Mercury-Intervoice Call Centre Support (current)
Denmark	▪ Remedy and ▪ Planed new system ▪ “A&D)
France	▪ Concurive (HelpDesk) ▪ Mail
Hong Kong	▪ IVRS, PABX ▪ Nicelog Recording System ▪ Softphone
Ireland	▪ Custom applications – Integrated Taxation Processing (ITP) and Common Registration System (CRS)
Italy	
Mexico	▪ PeopleSoft CRM
New Zealand	▪ Genesys and customer developed. Will be moving to Siebel
Norway	▪ Teleopti CCC, Remedy ARS, ePhorte case-handling and archiving
Singapore	▪ Siebel CRM System for Call Centres
South Africa	
Spain	▪ Our Own Applications
Sweden	▪ Tax Agency ▪ Custom built
Turkey	▪ Ebyn crm,(call center & help desk for e-declaration system) ▪ Vimer crm (call center for taxpayers for any question)
UK	▪ PegaWorks being replaced by Pega Rules
USA	▪ Peoplesoft PRM System for e-Services

Summary: Most countries have a mix of COTS and custom built applications. The most common COTS product is Siebel (3).

Client Relationship Management – Contact Management



Country	Products used/ approach adopted
Australia	▪ GENESYS Call Centre Support (current)
Austria	
Belgium	▪ Genesys
Canada	▪ IVR, TTY, GENESYS, Rockwell Call Centre Support
Chile	▪ Multimedia Contact Centre - MITEL ▪ Unicenter Service Plus Service Desk, CA
Denmark	▪ CISCO IPCC (telephone)
France	▪ Custom html/JEE on JBoss
Hong Kong	▪ IVRS, PABX ▪ Softphone
Ireland	▪ iC system, including document scanning
Italy	▪ Genesys Call Center ▪ HP Contact Management
Mexico	▪ Remedy ARS
New Zealand	▪ Custom Apps, IVR – Peripherals, IBM Call Path, IBM Call Mgmt System. Moving to ORACLE
Norway	
Singapore	▪ Avaya Call centre applications
South Africa	▪ Single cross Tax Client contact management services for the phone channel. Includes: Interactive Voice Recognition (IVR) and Computer Telephony Integration (CTI) for staff-operated phone services integrated view of client, and tracking, recording, escalation and monitoring of client contact
Spain	▪ INVEZVOZ
Sweden	
Turkey	▪ ITD interactive intelligence Customer Interaction Center CIC ▪ Avaya call center
UK	
USA	

Summary: Many countries have a combination of COTS and custom built applications. Most common COTS are Genesys (4) with Avaya (2).

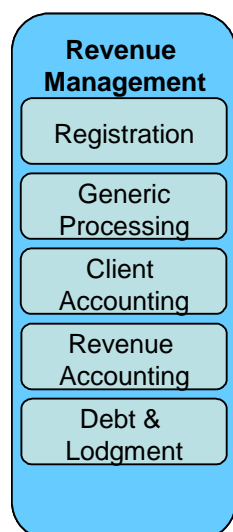
Client Relationship Management – Marketing & Education



Country	Products used/ approach adopted
Chile	<ul style="list-style-type: none"> ▪ Custom application, Educational Tax Portal
Italy	<ul style="list-style-type: none"> ▪ Docent and centre for e-learning services
Mexico	<ul style="list-style-type: none"> ▪ PeopleSoft ELM
Spain	<ul style="list-style-type: none"> ▪ AVANZO ▪ Sametime
UK	<ul style="list-style-type: none"> ▪ KANA IQ

Summary: Only 5 countries provided a response to this capability with a combination of COTS and custom built applications.

Revenue Management



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Core Registration, Accounting & processing comes from Accenture TAS System currently in use in Washington DC with Batch processing architecture from Singapore (from April 08) ▪ Revenue Accounting: Currently & will continue to be provided by SAP ▪ Debt & Lodgement: Siebel Case Management to support Debt and Lodgement Cases
Austria	<ul style="list-style-type: none"> ▪ Java-, PL/I-Applications
Belgium	<ul style="list-style-type: none"> ▪ Custom applications and SAP for Budget ▪ Revenue Accounting: Custom applications ▪ Debt & Lodgement: Custom applications
Canada	<ul style="list-style-type: none"> ▪ Custom Developed ▪ Revenue Accounting: SAP ERP6 ▪ Debt & Lodgement: Custom Developed & undergoing redesign
Chile	<ul style="list-style-type: none"> ▪ Custom applications to manage taxpayer accounts, online application with Batch processing
Denmark	<ul style="list-style-type: none"> ▪ Custom application to manage taxpayer accounts ▪ SAP for accounting ▪ Revenue Accounting: Will be a new application based on SAP
France	<ul style="list-style-type: none"> ▪ Custom (certificate/Subscription) ▪ Custom (multiple technologies)
Hong Kong	<ul style="list-style-type: none"> ▪ In-house applications ▪ (Natural and Java) ▪ Revenue Accounting: In-house applications (Natural and Java) ▪ Debt & Lodgement: In-house application, (Natural and Java)
Ireland	<ul style="list-style-type: none"> ▪ Custom applications – Integrated Taxation Processing (ITP) and Common Registration System (CRS) ▪ Revenue Accounting: Custom Application - Subsystem within ITP

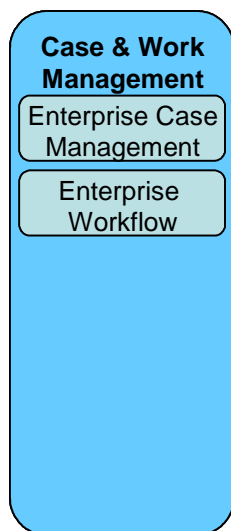
	<ul style="list-style-type: none"> ▪ Debt & Lodgement: Custom Application - Subsystem within ITP
Italy	<ul style="list-style-type: none"> ▪ Custom applications to manage taxpayer accounts
Mexico	<ul style="list-style-type: none"> ▪ Custom Tax Apps. based on Oracle DBMS, DB2, Online, Batch ▪ Generic Processing: PeopleSoft GL, Oracle ETM and SAS ▪ Client Accounting: PeopleSoft ERM, Oracle ETM (Jan – 10) ▪ Revenue Accounting: PeopleSoft GL ▪ Debt & Lodgement: SAS , Oracle – ETM (Jun – 10)
New Zealand	<ul style="list-style-type: none"> ▪ Custom Apps on Unisys Libra ▪ Will be implementing Oracle Rules Engine (Policy Automation) ▪ Client Accounting: Custom Apps ▪ Revenue Accounting: Custom Apps ▪ Debt & Lodgement: Custom Apps, Siebel Case Module
Norway	<ul style="list-style-type: none"> ▪ Revenue Accounting: Custom applications based on Oracle EBS, Agresso ▪ Debt & Lodgement: Custom applications based on Oracle EBS
Singapore	<ul style="list-style-type: none"> ▪ Core Processing, Registration, Accounting, Payments & refunds custom build using .Net. ▪ Rule engine (Blaze Advisor) for tax computation ▪ Revenue Accounting: Custom Build using .Net ▪ Debt & Lodgement: Siebel Case Management to support Debt and Lodgement Cases
South Africa	<ul style="list-style-type: none"> ▪ Moving to Single Registration across Tax types, Accounting SAP (moving over time all revenue management to SAP), Generic Processing at core custom solution, Core system replacements scheduled for Customs, PAYE, others. ▪ Client Accounting: SAP with more work to consolidate accounts across channel planned and in progress. Single Taxpayer account in the works. ▪ Debt & Lodgement: Currently system specific moving to SAP 2010
Spain	<ul style="list-style-type: none"> ▪ Our Own Applications
Sweden	<ul style="list-style-type: none"> ▪ Tax Agency custom built
Turkey	<ul style="list-style-type: none"> ▪ All custom applications ▪ MIS for reporting
UK	<ul style="list-style-type: none"> ▪ Range of bespoke solutions for each tax class. SAP proposed for Trust and Resource accounting
USA	<ul style="list-style-type: none"> ▪ Custom applications to manage taxpayer accounts ▪ SAP for Accounting

Summary: The above table represents all capabilities within Revenue Management. Information was not provided for a number of capabilities within Revenue Management and therefore all information has been presented collectively.

All countries identified custom built applications including SAP is used for GL accounting. DB2 and Oracle are the most common data base management systems. Most countries have a mix of ERP and custom built applications. Most common ERP is SAP (for accounting).

Debt & Lodgement: Majority of countries have a mix of COTS and custom built applications, the most common being Siebel (3).

Case and Work Management



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Siebel Case Management and Work Management, Ringtail (Litigation Support)
Austria	<ul style="list-style-type: none"> ▪ Fabasoft eGov-Suite
Belgium	<ul style="list-style-type: none"> ▪ Custom applications – Enterprise case management from Aris ▪ Enterprise Workflow: JBPM & Task manager (Custom applications)
Canada	<ul style="list-style-type: none"> ▪ Multiple Customized Case Mgmt, BPM & BRE tools under review, AION pilot, open source BPM pilot
Chile	<ul style="list-style-type: none"> ▪ Multiple custom applications to manage cases ▪ Enterprise Workflow: Interstage-Weblogic
Denmark	<ul style="list-style-type: none"> ▪ Clarity
France	<ul style="list-style-type: none"> ▪ Custom (multiple technologies)
Hong Kong	<ul style="list-style-type: none"> ▪ WebSphere ▪ Java (STRUTS) ▪ DB2
Ireland	<ul style="list-style-type: none"> ▪ Custom Applications – Case Select, Integrated Case Management (ICM), ▪ Transaction Review
Italy	Multiple custom applications to manage cases: 1) Customer Service; 2) Compliance; and 3) Others
Mexico	<ul style="list-style-type: none"> ▪ Custom Tax Apps. based on Oracle DBMS, DB2, Online, Batch ▪ Enterprise Management: PeopleSoft CRM ▪ Enterprise Workflow: Documentum BPM
New Zealand	<ul style="list-style-type: none"> ▪ Siebel Public Sector Case module
Norway	
Singapore	<ul style="list-style-type: none"> ▪ Siebel Case Management to support all Enforcement & Audit functionalities
South Africa	<ul style="list-style-type: none"> ▪ Custom (bespoke) single Case Manager built with internal workflow provided by a custom built solution across tax types inclusive of interface (Service Manager) for Call centre and Over the Counter, Scanning, etc.
Spain	<ul style="list-style-type: none"> ▪ Our Own Applications
Sweden	<ul style="list-style-type: none"> ▪ Tipco Inconcert migrating to Oracle BPEL
Turkey	<ul style="list-style-type: none"> ▪ Custom work management applications for auditing purposes, ▪ DYIAS (Document management & workflow system) (planned in 12 months)
UK	<ul style="list-style-type: none"> ▪ PegaRules, Documentum ▪ Enterprise Workflow: BEA Aqualogic BPM; PegaRules
USA	<ul style="list-style-type: none"> ▪ Multiple custom applications to manage to manage cases <ul style="list-style-type: none"> - Customer Service, Compliance, Underreprrter, Criminal Investigation, Others ▪ Enterprise management: EAI Brokers are being evaluated, BizTalk

Summary: The above table represents all capabilities within Case and Work Management. Information was not provided for a number of capabilities within Case and Work Management and therefore all information has been presented collectively.

Most countries have a mix of COTS & custom built applications, the most common being Siebel (3).

Outcome Improvement - Analytics

Outcome Improvement
Analytics
Information Management Policy & Architecture
Reporting
Data Matching
Data Services
Data Warehouse Management
Intelligence

Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> SAS Enterprise Miner, Teraminer, R, Operational Analytics, RAPT (custom application)
Austria	<ul style="list-style-type: none"> Custom Applications
Belgium	<ul style="list-style-type: none"> Microsoft SQL Server 2005 analysis services SPSS Clementine SPSS base
Canada	<ul style="list-style-type: none"> Clementine data mining workbench from SPSS, CART from Salford Systems, Predict from Neural Ware , SAS
Chile	<ul style="list-style-type: none"> ACL, Custom application
Denmark	<ul style="list-style-type: none"> Custom application
France	<ul style="list-style-type: none"> Custom / SAS / Cognos
Hong Kong	<ul style="list-style-type: none"> SAS
Ireland	<ul style="list-style-type: none"> Eskor t Risk Analysis, SAS Enterprise Guide & Enterprise Miner, Jaspersoft OLAP
Italy	<ul style="list-style-type: none"> COGNOS; Business Objects; Microstrategy; SAS; Oracle Developer Suite; Microsoft Analysis Services.
Mexico	<ul style="list-style-type: none"> SAS and Clementine SPSS
New Zealand	<ul style="list-style-type: none"> Hyperion (Oracle), OBIEEE SAS
Norway	<ul style="list-style-type: none"> Oracle DWH, SPSS, Statistica
Singapore	<ul style="list-style-type: none"> SAS Client. Spotfire
South Africa	<ul style="list-style-type: none"> SAS Enterprise Miner and Others inclusive of in-house build (SQL Server) based services
Spain	<ul style="list-style-type: none"> SAS
Sweden	<ul style="list-style-type: none"> Cognos ReportNet Custom built
Turkey	<ul style="list-style-type: none"> A custom application (taxpayer scoring) is being implemented & planned to roll out in 6 months
UK	<ul style="list-style-type: none"> SAS
USA	<ul style="list-style-type: none"> Fair Isaac

Summary: A number of countries identified a mix of COTS and custom built applications, the most common being SAS which is used in two thirds of the countries participating in the survey.

Outcome Improvement – Information Management Policy & Architecture

Outcome Improvement

Analytics

Information Management Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse Management

Intelligence

Country	Products used/ approach adopted
Australia	▪ Erwin, MetaServices (Teradata)
Austria	
Belgium	
Canada	▪ Enterprise Data Model, ERwin
Chile	▪ Rational Suite
Denmark	▪ System Architect
France	▪ CaseWise Tools ▪ Rational Rose ▪ Custom
Hong Kong	▪ SAS
Ireland	▪ SAS, Taxmodeller (custom SAS application)
Italy	
Mexico	▪ ARIS ▪ Edwin
New Zealand	
Norway	
Singapore	▪ Microsoft Sharepoint ▪ Erwin
South Africa	▪ Microsoft SharePoint, EA tool (Enterprise Architect), Others
Spain	
Sweden	▪ GEAF and Togaf
Turkey	
UK	
USA	▪ ProSight ▪ Metis ▪ Rational Suite

Summary: Majority of countries identified COTS products including:

- Rational (3)
- SAS (2)
- Erwin (3)

Outcome Improvement - Reporting

Outcome Improvement

Analytics

Information Management
Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse
Management

Intelligence

Australia	▪ COGNOS Enterprise Suite, Actuate
Austria	▪ Cognos
Belgium	▪ Microsoft SQL Server 2005 reporting services
Canada	▪ Cognos Series 8, Cognos ReportNet
Chile	
Denmark	▪ BusinessObjects ▪ Crystal Report
France	▪ Text / Cognos / ... ▪ Jasper Reports
Hong Kong	▪ SAS, Crystal Reports, OLAP, In-house application
Ireland	▪ Hummingbird BI-Query, Jaspersoft, Vista Plus
Italy	▪ COGNOS; Business Objects; Microstrategy; SAS; ▪ Oracle Developer Suite
Mexico	▪ Cognos, SAS and Crystal Reports
New Zealand	▪ Hyperion (Oracle), SAS enterprise miner ▪ SAS enterprise guide ▪ SAS text miner ▪ FIRST Legacy
Norway	▪ Discoverer
Singapore	▪ COGNOS enterprise Reporting
South Africa	▪ Reports - Teradata, SAP BW, COGNOS, Crystal and bespoke as required
Spain	▪ Tivoli Decisión Support
Sweden	▪ Cognos ReportNet
Turkey	▪ Business Objects, ▪ Inhouse reporting tools
UK	▪ Business Objects
USA	▪ Business Objects ▪ Crystal Reports ▪ SAS

Summary: Majority of countries identified specialist reporting development tools including:

- Cognos (9)
- SAS (5)
- Business Objects / Crystal Reports (7)

Outcome Improvement – Data Matching

Outcome Improvement

Analytics

Information Management
Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse Management

Intelligence

Australia	<ul style="list-style-type: none"> ▪ SSA Name, custom applications
Austria	<ul style="list-style-type: none"> ▪ Custom Applications
Belgium	<ul style="list-style-type: none"> ▪ Manage data warehouse IBM WebSphere information server
Canada	<ul style="list-style-type: none"> ▪ SSA-Name3
Chile	<ul style="list-style-type: none"> ▪ Custom Applications
Denmark	<ul style="list-style-type: none"> ▪ Informatica
France	<ul style="list-style-type: none"> ▪ Cognos
Hong Kong	<ul style="list-style-type: none"> ▪ SAS ▪ Enterprise Data Propagation
Ireland	<ul style="list-style-type: none"> ▪ I-Lytics and other products from Innovative Systems Inc.
Italy	<ul style="list-style-type: none"> ▪ PowerCenter; SAS
Mexico	<ul style="list-style-type: none"> ▪ SAS, Trillium and JackBe Presto
New Zealand	<ul style="list-style-type: none"> ▪ SAS BI ▪ SAS enterprise miner ▪ SAS enterprise guide ▪ SAS text miner
Norway	
Singapore	<ul style="list-style-type: none"> ▪ Custom build using .Net & See Beyond for EVN.
South Africa	<ul style="list-style-type: none"> ▪ In House built on Microsoft SQL Server / SAS
Spain	
Sweden	<ul style="list-style-type: none"> ▪ Tax Agency ▪ SAS Marketing Automation
Turkey	<ul style="list-style-type: none"> ▪ Custom applications, ▪ Sybase IQ
UK	<ul style="list-style-type: none"> ▪ Informatica & Bespoke
USA	<ul style="list-style-type: none"> ▪ Custom Applications ▪ SAS

Summary: The most commonly use product is SAS.

Outcome Improvement – Data Services

Outcome Improvement

Analytics

Information Management
Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse
Management

Intelligence

Australia	▪ DB2/SQL
Austria	▪ DB2, ORACLE, MySQL
Belgium	▪ DB2
Canada	▪ Ascential Data Stage
Chile	▪ Oracle, Sybase IQ ▪ SQL Server
Denmark	▪ Sybase, Sybase IQ, SQL Server
France	▪ Oracle ▪ PostgreSQL ▪ MySQL
Hong Kong	▪ Oracle ▪ DB2
Ireland	▪ Mule, Talend, Edifecs
Italy	▪ Oracle, DB2, SQL Server
Mexico	▪ DataStage, SAS and Trillium
New Zealand	▪ DMS2, Oracle, and Progress
Norway	▪ Oracle DBMS, IBM DB2
Singapore	▪ IBM DB2 ▪ Microsoft SQL Server
South Africa	▪ IBM Websphere Services built for reuse across systems
Spain	▪ DB2, ADABAS, ORACLE, SQL SERVER
Sweden	
Turkey	▪ Sybase ASE ▪ Sybase IQ
UK	▪ QAS, Trillium, Identity SSA Names ▪ Bank Wizard
USA	▪ Oracle ▪ DB2 ▪ SQL Server

Summary: The most common platforms identified were:

- DB2 (9)
- Oracle (9)
- SQL Server (8)

Outcome Improvement – Data Warehouse Management

Outcome Improvement

Analytics

Information Management
Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse Management

Intelligence

Australia	<ul style="list-style-type: none"> ▪ Teradata (EDW), SAP Business Warehouse (Fin/HR), Sun/Plumtree (Central Audit Logging)
Austria	<ul style="list-style-type: none"> ▪ ORACLE Suite
Belgium	
Canada	<ul style="list-style-type: none"> ▪ UDB on Sun Solaris
Chile	<ul style="list-style-type: none"> ▪ Data Stage
Denmark	<ul style="list-style-type: none"> ▪ Informatica, EQM
France	<ul style="list-style-type: none"> ▪ Cognos
Hong Kong	<ul style="list-style-type: none"> ▪ SAS
Ireland	
Italy	<ul style="list-style-type: none"> ▪ COGNOS; Business Objects; Microstrategy; SAS; ▪ Oracle Developer Suite
Mexico	<ul style="list-style-type: none"> ▪ Oracle, Informix XPS, Informix IDS, DB2 and SAS
New Zealand	<ul style="list-style-type: none"> ▪ Oracle DW builder ▪ Siebel
Norway	<ul style="list-style-type: none"> ▪ Oracle DWH
Singapore	<ul style="list-style-type: none"> ▪ SQL database. ETL using Datastage from IBM
South Africa	<ul style="list-style-type: none"> ▪ Teradata, SAP BW
Spain	<ul style="list-style-type: none"> ▪ Microstrategy
Sweden	<ul style="list-style-type: none"> ▪ Custom built on top of Informatica PowerCenter
Turkey	<ul style="list-style-type: none"> ▪ Sybase IQ, ▪ Custom applications to gather all data sources and reporting
UK	<ul style="list-style-type: none"> ▪ Informatica, Business Objects, Oracle
USA	<ul style="list-style-type: none"> ▪ Custom Applications

Summary: The most common platforms are:

- Oracle (6)
- Teradata (2)
- SAS (3),
- Informatica (3)

Outcome Improvement – Intelligence

Outcome Improvement

Analytics

Information Management
Policy & Architecture

Reporting

Data Matching

Data Services

Data Warehouse
Management

Intelligence

Australia	<ul style="list-style-type: none"> Analyst Workbench (I-base/ Analyst Notebook/IXA), Netmap
Austria	<ul style="list-style-type: none"> ACL
Belgium	<ul style="list-style-type: none"> SPSS Clementine
Canada	<ul style="list-style-type: none"> I 2 Entity Analytics IBM
Chile	<ul style="list-style-type: none"> Clementine-SPSS Statistics- SPSS
Denmark	<ul style="list-style-type: none"> Xcelsius
France	<ul style="list-style-type: none"> Custom (OASIS) Cognos / SAS
Hong Kong	<ul style="list-style-type: none"> SAS
Ireland	<ul style="list-style-type: none"> Custom application (IBI), Eskort (rules engine), various third party products
Italy	<ul style="list-style-type: none"> COGNOS; Business Objects; Microstrategy; Oracle Developer Suite; Analysis Services.
Mexico	<ul style="list-style-type: none"> SAS and Cognos
New Zealand	
Norway	<ul style="list-style-type: none"> Oracle DWH
Singapore	<ul style="list-style-type: none"> Spotfire for visualisation SAS client
South Africa	<ul style="list-style-type: none"> Largely Manual Currently – moving to enterprise risk and Incident / case management planned
Spain	
Sweden	<ul style="list-style-type: none"> Rule based tools Custom built
Turkey	<ul style="list-style-type: none"> Custom applications
UK	
USA	<ul style="list-style-type: none"> SAS

Summary: A large mix of COTS and custom built platforms. SAS (4) and Cognos (3) are the most common.

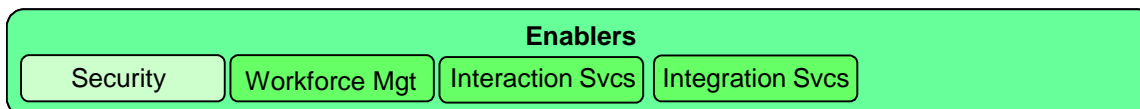
Plan and Manage Enterprise

Plan & Manage Enterprise

Australia	<ul style="list-style-type: none"> ▪ Executive Dashboard – Cognos
Austria	<ul style="list-style-type: none"> ▪ Cognos, SAP ESS
Belgium	<ul style="list-style-type: none"> ▪ Cognos – project master (custom applications) ▪ BEA (custom applications)
Canada	<ul style="list-style-type: none"> ▪ SAP data used to populate custom DW & analytics, Exploring SAP BW, Oracle
Chile	<ul style="list-style-type: none"> ▪ IBM-Rational Portfolio Manager ▪ Custom application
Denmark	<ul style="list-style-type: none"> ▪ SharePoint and CMS/DAP
France	<ul style="list-style-type: none"> ▪ Custom dashboards ▪ BI tools
Hong Kong	<ul style="list-style-type: none"> ▪ SAS ▪ In-house application
Ireland	<ul style="list-style-type: none"> ▪ Custom application Management Information Framework (MIF), Revenue Collection Profile (F&T), HP Project Portfolio Management
Italy	<ul style="list-style-type: none"> ▪ Multiply custom applications: <ul style="list-style-type: none"> - Oracle Business - Hyperion suite
Mexico	<ul style="list-style-type: none"> ▪ HP –PPMC, BICC
New Zealand	<ul style="list-style-type: none"> ▪ Oracle, SAP, EvolveIT, Nagios, IBM Tivoli and ▪ Custom Applications
Norway	
Singapore	<ul style="list-style-type: none"> ▪ Corporate Portal – (using Sharepoint)
South Africa	<ul style="list-style-type: none"> ▪ Executive Dashboards and Reports – custom build – email and on demand
Spain	
Sweden	<ul style="list-style-type: none"> ▪ HP PPM ▪ Qualiware QLM
Turkey	<ul style="list-style-type: none"> ▪ (All for software activities) ▪ Executive dashboard-JIRA ▪ Change management-JIRA ▪ Lighthouse (custom build project management tool)
UK	<ul style="list-style-type: none"> ▪ SAP ERP, SRM, COCOMO based FP analysis
USA	<ul style="list-style-type: none"> ▪ Executive Dashboard - custom build ▪ CM tools (Clearcase, Endeavor) ▪ Software Estimation (COCOMO based)

Summary: Mostly custom built solutions with some mix of COTS support. SAP (4) and Cognos (3) are the most common COTS.

Enablers – Security

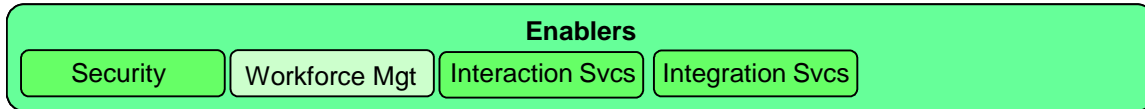


Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Internal - Sun Identity Manager ▪ External businesses – Custom using ATO-supplied PKI. Reviewing current external authentication solution as part of SBR
Austria	<ul style="list-style-type: none"> ▪ Siteminder ▪ RACF, External - PKI
Belgium	<ul style="list-style-type: none"> ▪ Sun Identity Management
Canada	<ul style="list-style-type: none"> ▪ Custom Developed, IdAM under review, GOC Secure Chanel, Siteminder, Entrust, & PKI
Chile	<ul style="list-style-type: none"> ▪ e-Trust, firewall, Symantec ▪ Custom authentication User-Password ▪ PKI-based and Token-based
Denmark	<ul style="list-style-type: none"> ▪ New functionality on Oracle/CoreID
France	<ul style="list-style-type: none"> ▪ SSO : open ldap / lemon-ldap ▪ Cisco firewalls ▪ Proxy ▪ Outils d’audit ▪ Supervision
Hong Kong	<ul style="list-style-type: none"> ▪ IBM Intrusion Protection System ▪ Nokia Firewall ▪ Symantec Anti-virus ▪ PK2 technology ▪ In-house logging and BINGO
Ireland	<ul style="list-style-type: none"> ▪ Custom built internal system incl token ▪ Active Directory, ▪ Copperfasten, Trend, Symantec ▪ PKI for ROS ▪ RCA keyfobs/OTP
Italy	<ul style="list-style-type: none"> ▪ BMC Control-SA, RSA ClearTrust, Critical Path Directory Server; ▪ F-Secure, IBM Datapower; Checkpoint; ISS Proventia.
Mexico	<ul style="list-style-type: none"> ▪ Novell Identity Manager ▪ Novell iChain ▪ Omniguard ▪ PKI
New Zealand	<ul style="list-style-type: none"> ▪ IAMS (RSA, Clear Trust) ▪ Custom Apps, Novell e-dir
Norway	<ul style="list-style-type: none"> ▪ IBM Tivoli Identity Manager (TIM), ▪ IBM Tivoli Access Manager (TAM), ▪ IBM Tivoli Federated Identity Manager (FIM), ▪ IBM RACF for z/OS, Oracle OID, ▪ Microsoft Active Directory
Singapore	<ul style="list-style-type: none"> ▪ AD, SSO, Audit Trail Sentinel Log
South Africa	<ul style="list-style-type: none"> ▪ Moving to IBM TIM TAM with integration to SAP HR for roles / rights

	/ assets / qualifications / presence – MS Active directory on the client side as well as secured tokenised encrypted security where required on external channels
Spain	<ul style="list-style-type: none"> ▪ RACF ▪ Secur Pass
Sweden	<ul style="list-style-type: none"> ▪ External ▪ PKI, Oracle SSO, BICS ▪ Internal ▪ Custom built for Unix applications and Active Directory for Windows
Turkey	<ul style="list-style-type: none"> ▪ EYEKS- an in-house developed authorization and authentication system; consists of both a role based access control (RBAC) and a dynamic authorization method based on resource access decision (RAD) simultaneously. ▪ Digital certificates, ▪ Firewalls, Reverse proxies, ▪ Custom logs, firewall logs, Log4J, ArcSight logger
UK	<ul style="list-style-type: none"> ▪ <i>Various</i>
USA	<ul style="list-style-type: none"> ▪ NeTegrity ▪ SiteMinder ▪ e-Trust ▪ Multiple applications for Personal Identity Validation ▪ Single Sign On

Summary: A very diverse mix of COTS tools is used to assemble a solution.

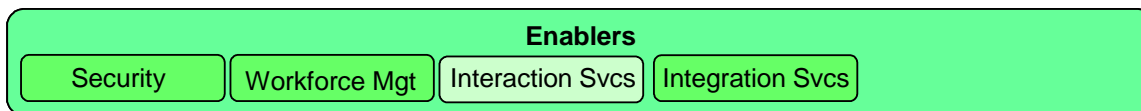
Enablers – Workforce Management



Country	Products used/ approach adopted
Australia	▪ SAP HR
Austria	▪ SAP HR
Belgium	▪ PeopleSoft HR
Canada	▪ SAP, Custom Developed
Chile	▪ Custom application ▪ Contact Centre Manager. MITEL- CCS EE: Schedule – Schedule adherence
Denmark	▪ TeleOpti
France	▪ HR Access ▪ Custom
Hong Kong	▪ WebSphere ▪ DB2 ▪ MySQL ▪ In-house applications
Ireland	▪ Irish Civil Service wide HRMS package (Oracle PeopleSoft)
Italy	
Mexico	▪ PeopleSoft HR
New Zealand	▪ SAP in time,, ▪ IBM Aspect
Norway	▪ SAP, Teleopti CCC
Singapore	▪ SAP HR
South Africa	▪ SAP HR
Spain	
Sweden	▪ Custom built ▪ ReachMe
Turkey	
UK	▪ Aspect WFM
USA	▪ PeopleSoft HR

Summary: Most countries identified COTS products with SAP (7) and Peoplesoft (3) as being the most common.

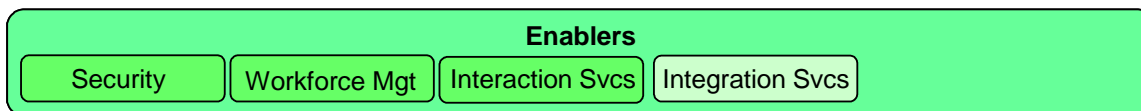
Enablers – Interaction Services



Australia	▪ ACA.Net, MS UIP Block, ENTLIB
Austria	▪ Gentic Portal.Node
Belgium	
Canada	▪ GOC common look & feel standards
Chile	▪ Chilean WEB 2.0 Guide, W3C Consortium
Denmark	▪ BEA suite
France	▪ CaseWise tools ▪ Rational tools ▪ JEE on JBoss
Hong Kong	▪ Fast Link Checker
Ireland	▪ ROS Web Services, ▪ EU CCN/CSI gateway ▪ Connect:Direct
Italy	▪ Java; .NET; PHP; ▪ Cobol-CICS; Web server; WAS; ▪ Custom application
Mexico	▪ EMC – DocScience (Nov – 10)
New Zealand	▪ E-Vision (Custom Apps)
Norway	▪ Oracle CDM Rule Frame
Singapore	▪ ACA.Net
South Africa	▪ Internal Single Service Manager consolidated cross system interface – external WEB based on single Internet Channel - based Largely on MS Frames (Outlook) look and feel
Spain	▪ RACF
Sweden	
Turkey	▪ For Aurora based applications user interface rules are in the platform itself; for other applications there are only some predefined user interface rules but no active control
UK	▪ Freedom Scientific JAWS
USA	▪ Blaze Advisor

Summary: Not much commonality can be identified here, possibly suggesting different interpretation of this capability.

Enablers – Integration Services



Country	Products used/ approach adopted
Australia	<ul style="list-style-type: none"> ▪ Websphere Business Integrator, IBM-Ascential (ETL)
Austria	<ul style="list-style-type: none"> ▪ WebSphere Application Server, ORACLE EAI, Tomcat
Belgium	<ul style="list-style-type: none"> ▪ BEA (custom applications)
Canada	<ul style="list-style-type: none"> ▪ BEA Weblogic, MQ Series, Sterling
Chile	<ul style="list-style-type: none"> ▪ Weblogic applications server ▪ MQ Series ▪ Eculink Server ▪ Control M
Denmark	<ul style="list-style-type: none"> ▪ BEA suiteen
France	<ul style="list-style-type: none"> ▪ SLI: Axis, then JaxWS ▪ DLI : Oracle tools (little use)
Hong Kong	<ul style="list-style-type: none"> ▪ Entire-X ▪ WebSphere Application Server ▪ Enterprise Data Propagation
Ireland	<ul style="list-style-type: none"> ▪ Oracle Weblogic, Intalio BPM/BPEL, Tomcat, Mule, custom services
Italy	<ul style="list-style-type: none"> ▪ Enterprise Application Integration (EAI), ▪ IBM MQ ▪ WAS ▪ cobol-CICS
Mexico	<ul style="list-style-type: none"> ▪ WebSphere Process Server ▪ WebSphere Application Server ▪ WebSphere MQ ▪ WebSphere Message Broker ▪ JackBe Presto
New Zealand	<ul style="list-style-type: none"> ▪ Sun Java Caps
Norway	<ul style="list-style-type: none"> ▪ Oracle Enterprise Servicebus
Singapore	<ul style="list-style-type: none"> ▪ See Beyond for EAI
South Africa	<ul style="list-style-type: none"> ▪ Websphere Business Integrator, Broker, ESB (Enterprise Service Bus) moving to more and more SOA
Spain	
Sweden	<ul style="list-style-type: none"> ▪ Oracle Service bus ▪ Oracle Tuxedo ▪ Oracle WLS ▪ IDA Systems SHS ▪ XML
Turkey	<ul style="list-style-type: none"> ▪ SuneOne Application Server, ▪ Sybase Mirror Activator, ▪ DAL- a in-house developed data abstraction layer for accessing to dbs from applications
UK	<ul style="list-style-type: none"> ▪ Tuxedo, Sarvega, JMS, JCA, Fujitsu HostTalk, BEA Weblogic integrator, AQ, SAP NetWeaver .Net, Weblogic and Webmethods

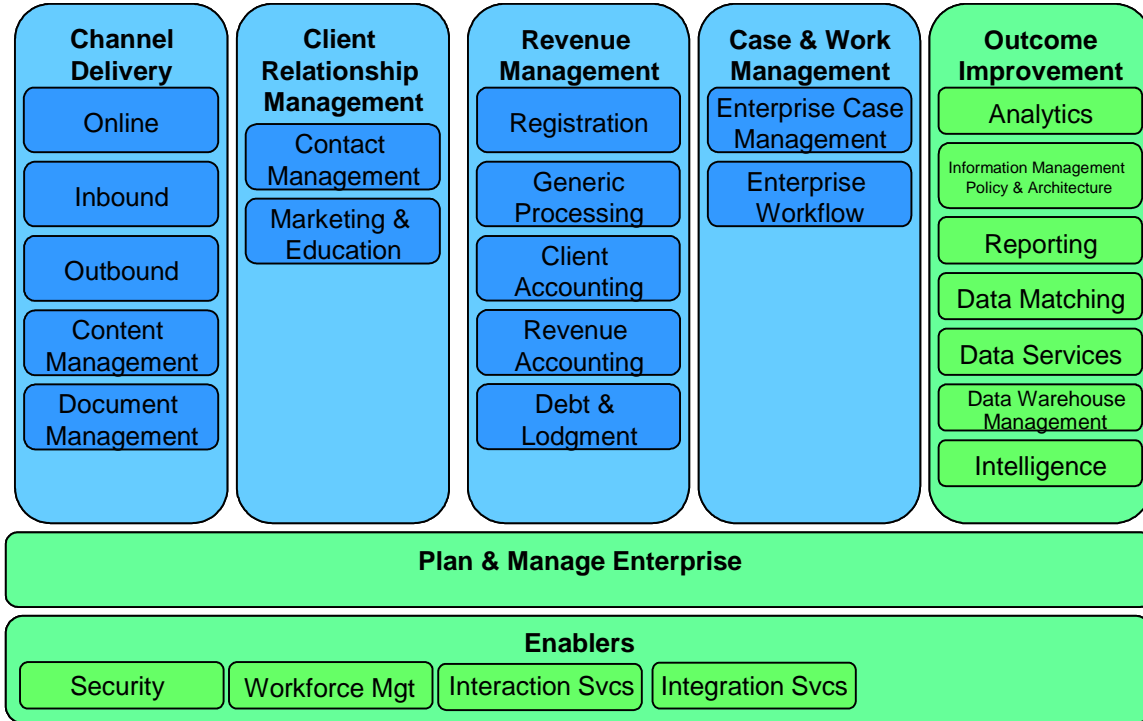
	(ESB)
USA	<ul style="list-style-type: none">▪ WebSphere Application Server▪ WebSphere MQ▪ EAI Broker

Summary: Webphere (6) is the most commonly identified platform. Other common platforms are BEA (4) and weblogic (4) and the remaining countries were a mix of other platforms.

Annex 2

Extract from FTA Taxpayer Services Group – Scoping document/terms of reference – 15 June 2009

Capability Model (Reference Model)



In this model, capabilities are combinations of people, processes and technology that collectively enable the delivery of business outcomes.

This model consists of four core capabilities that deliver outcomes to clients:

- Channel Delivery
- Client Relationship Management
- Revenue Management, and
- Case & Work Management.

In addition, there are three supporting capabilities:

- Outcome Improvement
- Plan & Manage Enterprise, and
- Services and Enablers.

Within a number of the capabilities, there are functions that contribute to the overall delivery of the business outcomes. For example, the Channel Delivery capability encompasses delivery of online, inbound, outbound, content management and document management functions.

The following table describes each of the capabilities and their associated functions. Please note that these descriptions are based on information originally extracted from the Australian Taxation Office’s Change Program capability model, so may include some information not relevant to your tax administration.

Capability - Channel Delivery	
<p>Delivers products and services through channels in a manner that meets client needs while achieving revenue administration and government objectives.</p> <p>Includes capabilities to support content, document and records management of inbound and outbound material.</p>	
Function	Description
Online	<p>Supports interactive channels for the community, providing both static content and transaction services. Interactive channels include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> portals <input type="checkbox"/> web sites <input type="checkbox"/> web services for integration into external applications <input type="checkbox"/> secure messaging (email) services <input type="checkbox"/> search services across web sites, and <input type="checkbox"/> calculators.
Inbound	<p>Supports predominantly non-interactive inbound channels for the community and other government agencies. Includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> inbound paper processing for forms and whitemail, including image capture, Optical Character Recognition and key capture <input type="checkbox"/> inbound fax processing <input type="checkbox"/> inbound bulk file and message handling <input type="checkbox"/> secure messages from portals <input type="checkbox"/> indexing, classification and routing of client requests <input type="checkbox"/> inbound email (general email addresses only) <input type="checkbox"/> automated inbound phone services for simple transactions, and <input type="checkbox"/> key data capture for bulk forms that are not imaged.
Outbound	<p>Supports non-interactive outbound channels for the community. Includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> outbound material, including forms, letters and marketing/education material <input type="checkbox"/> outbound delivery to paper, secure messaging, email and SMS channels <input type="checkbox"/> the naming, addressing, cc copying, merging, sorting, formatting, storing and printing of personalised mail items, and <input type="checkbox"/> outbound bulk file and message handling.
Content Management	<p>The enterprise functionality for initiating, approving, storing, maintaining and publishing approved content for informational, transactional, interpretative and correspondence products, including marketing and education material.</p>
Document Management	<p>The Document Management capability provides the ability to store and retrieve electronic versions of documents and manage the retention and destruction of electronic records in accordance with legislative requirements.</p> <p>Can apply to both client-related documents and administrative material (e.g. internal documents).</p>

Capability - Client Relationship Management	
Delivers the right experience at the right time through the right channel.	
Function	Description
Contact Management	<p>Provides client contact management services, in particular for the phone channel. Includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Interactive Voice Recognition (IVR) and Computer Telephony Integration (CTI) for staff-operated phone services <input type="checkbox"/> integrated view of client, and <input type="checkbox"/> tracking, recording, escalation and monitoring of client contact.
Marketing and Education	<p>Provides marketing, communication and education services, including campaign management.</p>

Capability - Revenue Management	
Enables clients (including tax intermediaries) to efficiently and effectively register, lodge/file and pay, and the revenue administration to recover the correct amount of tax and entitlement, whilst minimising the cost to the client.	
Function	Description
Registration	<p>Provides client registration services. Includes:</p> <ul style="list-style-type: none"> individual and non-individual registration registration and maintenance of tax professionals and all other intermediaries endorsement of charities and deductible gift recipients <input type="checkbox"/> tax type/role registration and lodgement/filing cycle determination <input type="checkbox"/> client data quality management <input type="checkbox"/> client relationships and linkages <input type="checkbox"/> client preferences <input type="checkbox"/> client search <input type="checkbox"/> identity strength, and <input type="checkbox"/> data extracts for external agencies.
Generic Processing	<p>Provides lodgement/filing and payment processing for all tax products, using a generic approach that can support new products. Includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> tax product business rule processing <input type="checkbox"/> form generation <input type="checkbox"/> instalment arrangements <input type="checkbox"/> tax product risk processing <input type="checkbox"/> generation of account postings <input type="checkbox"/> generation of outbound communications (e.g. notice of assessment), and <input type="checkbox"/> payment processing.
Client Accounting	<p>Provides account management services for all clients and all tax products. Includes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> client account maintenance <input type="checkbox"/> interest and penalty imposition and remission, and <input type="checkbox"/> refunds and disbursements.

Capability - Revenue Management	
Enables clients (including tax intermediaries) to efficiently and effectively register, lodge/file and pay, and the revenue administration to recover the correct amount of tax and entitlement, whilst minimising the cost to the client.	
Function	Description
Revenue Accounting	Provides summarisation, reconciliation and reporting for revenue accounts. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> maintenance of revenue accounting information on an internal General Ledger <input type="checkbox"/> providing users with direct access to revenue accounting information <input type="checkbox"/> reconciliation of revenue accounts to bank statements, and <input type="checkbox"/> reporting of revenue.
Debt & Lodgement	Identifies, creates and auto-actions cases where a client has either failed to lodge/file or failed to pay. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> initiate auto-recovery actions <input type="checkbox"/> identify and create debt and non-lodgement case <input type="checkbox"/> action debt and non-lodgement case <input type="checkbox"/> process update transactions from data matching processes <input type="checkbox"/> due date deferrals <input type="checkbox"/> payment arrangements, and <input type="checkbox"/> legal and prosecution details.

Capability - Case and Work Management	
Delivers enterprise wide case and work management capability to support active compliance, provision of written advice, debt collection, actioning of inbound correspondence and exception processing.	
Function	Description
Enterprise Case Management	Supports enterprise-wide case management Includes: <ul style="list-style-type: none"> <input type="checkbox"/> case management, assignment, tracking, administration and reporting <input type="checkbox"/> case actioning including default assessments, amendments, penalty & interest, form letters etc, and <input type="checkbox"/> update of case plans.
Enterprise Workflow	Supports enterprise-wide work management of exceptions from operational systems and actioning correspondence. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> work item creation <input type="checkbox"/> work allocation <input type="checkbox"/> work actioning <input type="checkbox"/> work reporting <input type="checkbox"/> escalation, and <input type="checkbox"/> workflow administration.

Capability - Outcome Improvement	
Provides feedback on the client experience, effectiveness of risk treatments and other enterprise information to continuously improve the operations of the revenue administration and provides input to Case Management and Revenue Management capabilities to ensure appropriate and relevant treatment according to risk.	
Function	Description
Analytics	Provides analytical models to support case selection and the risk and market segment treatment of clients. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> creation and maintenance of analytical models <input type="checkbox"/> regular update of risk and segment information for operational systems, and provision of case selection candidates for processing.
Information Management Policy and architecture	Information Management Policy and architecture covers the development of information models and the overall management of information within the revenue administration.
Reporting	Provides a corporate reporting capability including transactional, management and ad hoc reporting to support operational management and continuous improvement. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> report generation, and <input type="checkbox"/> report distribution.
Data Matching	Provides services for matching and interpretation of data from multiple sources.
Data Services	Provides data quality and data conversion capability.
Data Warehouse Management	An integrated and centralized data storage and access capability organized specifically for end-user reporting and analysis.
Intelligence	Supports gathering, storing and interpretation of data from the community to assist in case identification and selection.

Capability – Plan & Manage Enterprise	
Provides the management processes and structure for running the day-to-day business of the revenue administration.	
Note – the individual functions described below are not specifically illustrated on the capability model due to the generic nature of this capability.	
Function	Description
Governance & assurance	Development and implementation of policies, strategies and assurance processes relating to governance, integrity, audit & fraud control and security.
Finance	Budget and asset planning and management.

Capability – Plan & Manage Enterprise	
Provides the management processes and structure for running the day-to-day business of the revenue administration.	
Note – the individual functions described below are not specifically illustrated on the capability model due to the generic nature of this capability.	
Function	Description
Workforce planning and development	<input type="checkbox"/> Development and implementation of workforce policy & plans to address resource supply & demand. <input type="checkbox"/> Learning needs analysis and development/procurement & delivery of appropriate learning products and solutions.
Employee policy and services	Incorporates a wide range of services, including: <ul style="list-style-type: none"> <input type="checkbox"/> Employment policy & advice <input type="checkbox"/> Recruitment, personnel, appointments <input type="checkbox"/> Performance management <input type="checkbox"/> Industrial relations <input type="checkbox"/> Organisational health/workplace safety & health, and <input type="checkbox"/> Workplace diversity.
Accommodation Management	Accommodation procurement & management.

Capability - Enablers	
Additional capabilities that can be used by any of the other major functionality areas.	
Function	Description
Security	This capability ensures that corporate systems and data are secure from unauthorised access. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> security for internal systems to prevent unauthorised staff access <input type="checkbox"/> security for external facing systems to prevent unauthorised access by clients, and <input type="checkbox"/> logging of any unsuccessful attempts to access the systems by staff or clients. It also includes ensuring the security of the systems themselves from malicious or criminal attack, particularly from the public internet.
Workforce Management	Provides management of the revenue administration’s workforce, in particular focusing on the information required for workflow management. Includes: <ul style="list-style-type: none"> <input type="checkbox"/> engagement and termination processing <input type="checkbox"/> skills management, and <input type="checkbox"/> holiday management.
Interaction Services	A system capability that provides the services, patterns and templates required to develop User Interfaces that comply with the revenue administration’s User Interface standards, branding rules, legal requirements (e.g. adherence to the Web Accessibility Guidelines for the disabled). Also includes fraud prevention and control logging.

Capability - Enablers	
Additional capabilities that can be used by any of the other major functionality areas.	
Function	Description
Integration Services	<p>A system capability providing all services involved in supporting integration between the revenue administration’s applications. Broadly this covers three types of integration:</p> <ul style="list-style-type: none"> <input type="checkbox"/> interaction layer integration – seamless in-context navigation between user interfaces in the applications <input type="checkbox"/> service layer integration – standard Enterprise Application Integration, and <input type="checkbox"/> data layer integration – replication of data between master and slave databases. <p>This capability is also responsible for transaction audit logging.</p>

Tabular View of Responses Provided¹

Table 1. Top 10 vendors by capability

This table shows which vendors have the greatest penetration in relation to the various capabilities.

Count of Capability	Vendor										Grand Total
Capability	Oracle	IBM	SAS	SAP	MS	EMC	CA	Adobe	Informatica	SPSS	Grand Total
CD - Overview	6	6									12
CD - Content Management		4			2	5	1	1			13
CD - Document Management	1	4			4	7					16
CD - Inbound	2	1						1			4
CD - Online	4			1		1		1			7
CD - Outbound								4			4
CRM - Overview	5				1						6
CRM - Contact Mgmt	1	1									2
CRM - M&E	1										1
CWM - All	4					1	1				6
CWM - Case Mgmt	1				1						2
CWM - Work Mgmt	1					1					2
EN - Integration	10	9		1	1						21
EN - Interaction	3	1			1	1					6
EN - Sec	4	6		1	4		3				18
EN - WFM	6	3		5							14
OI - All		1	1								2
OI - Anal	3	2	12	1	2					4	24
OI - Data Matching	1	2	7		1				3		14
OI - Data Services	9	10	1		4						24
OI - DWH	7	6	3	4					3		23
OI - info pol & arch		3	2		1		2				8
OI - Intel	2	4	5	1						2	14
OI - Rept	4	9	5	7	1						26
Plan & Manage	3	6	1	4	2		1				17
Rev Mgmt - All	2			5							7
RM - CA	1			1							2
RM - D&L	5		1	1							7
RM - GP	1		1								2
RM - RA	2			4							6
Grand Total	89	78	39	36	25	16	8	7	6	6	310

/1. Some vendors would have large penetration due to knowledge in specific capability of revenue management domain (e.g. SAP), some would have penetration as an infrastructure provider (e.g. CA), and of course some have penetration due to both (e.g. Oracle & IBM). /2. Because this question was not explicitly asked in the survey many responses did not list any vendors and it is probably safe to assume few entries listed all their vendors and the relative importance of that vendor.

Table 1. Top 10 vendors by country

This table shows for each country how many of their capabilities use one of the top 10 vendors.

Country	Oracle	IBM	SAS	SAP	MS	EMC	CA	Adobe	SPSS	Informatica	Grand Total
Australia	6	5	1	3	2		1	1			19
Austria	4	6		2							12
Canada	2	5	1	4			3		1		16
Chile	2	4			1	1	2		1		11
Denmark	5			3	2					2	12
Hong Kong	3	6	8	1		1					19
Ireland	2		2		1						5
Mexico	12	5	8	1	1	4			1		32
New Zealand	12	4	3	1							20
Norway	10	3		1	1				1		16
Singapore	6	3	1		2			2			14
South Africa		5	2	8	3	1		2			21
Spain	1	4	1		1						7
UK	4	3	1	5	2	4		1		2	22
USA	5	4	3	2	3	2	2				21
Italy	6	9	5	4	3	2				1	30
France	2	5	2								9
Belgium	6	5		1	3			1	2		18
Sweden	1	2	1			1				1	6
Grand Total	89	78	39	36	25	16	8	7	6	6	310

/1. Because this question was not explicitly asked in the survey many responses did not list any vendors and it is probably safe to assume few entries listed all their vendors and the relative importance of that vendor.

¹ Raw data relating to the tables in Annex 3 are available from the OECD FTA TSG Secretariat if required.

Table 3. COTS usage by capability

This table shows which capabilities have been implemented using a COTS solution and which capabilities have been implemented using custom build. It was not possible to classify roughly 1/2 of the responses.

Count of Country	Cots? ▼			
Capability ▼	?	N	Y	Grand Total
CD - Overview	1	17	2	20
CD - Content Management	8	2	10	20
CD - Document Management	8	1	11	20
CD - Inbound	9	10	1	20
CD - Online	4	14	2	20
CD - Outbound	12	7	1	20
CRM - Overview	7	6	7	20
CRM - Contact Mgmt	16	2	2	20
CRM - M&E	18	1	1	20
CWM - All	2	12	6	20
CWM - Case Mgmt	15	4	1	20
CWM - Work Mgmt	16	3	1	20
EN - Integration	3	5	12	20
EN - Interaction	9	8	3	20
EN - Sec	9	10	1	20
EN - WFM	6	5	9	20
OI - All	15	5		20
OI - Anal	8	11	1	20
OI - Data Matching	8	11		19
OI - Data Services	1	1		2
OI - DWH	1	1		2
OI - info pol & arch	10	3	6	19
OI - Intel	12	7		19
OI - Rept	1	19		20
Plan & Manage	6	10	3	19
Rev Mgmt - All	2	18		20
RM - CA	15	3	2	20
RM - D&L	8	9	3	20
RM - GP	16	3	1	20
RM - RA	7	8	5	20
RM - Rego	18	2		20
Grand Total	271	218	91	580

Table 4. COTS usage by country

This table illustrates which countries have opted for a COTS solution approach vs a custom build approach. It can be seen that, based on the input provided, it was not possible to classify roughly 1/2 of the responses.

Count of Capability	Cots?				
Country	Y	N	No Soln	?	Grand Total
Mexico	15	6		8	29
Australia	8	12		9	29
UK	7	4		18	29
Singapore	6	7		16	29
Denmark	6	8		15	29
South Africa	6	13	1	9	29
Canada	5	14		10	29
Italy	4	13		12	29
Norway	4	3	3	19	29
Hong Kong	3	12		14	29
New Zealand	3	12		14	29
Chile	3	12		14	29
Spain	2	7		20	29
Austria	1	10		18	29
Ireland	1	13		15	29
Turkey		22		9	31
France	2	18		9	29
Belgium	5	11		15	31
Sweden	3	10		16	29
Grand Total	84	207	4	260	555

Table 5. Capabilities delivered using a single solution

This table attempts to identify which capabilities are wholly satisfied by a single solution. It can be seen that on the input provided it was not possible to classify roughly ¾ of the responses.

Count of Capability	Single				
Capability	?	N	Y	No Soln	Grand Total
CD - Overview	13	6	1		20
CD - Content Management	17	1	2		20
CD - Document Management	15	4	1		20
CD - Inbound	16	3	1		20
CD - Online	12	4	4		20
CD - Outbound	15	3	2		20
CRM - Overview	14	2	4		20
CRM - Contact Mgmt	18		2		20
CRM - M&E	20				20
CWM - All	3	11	6		20
CWM - Case Mgmt	15	3	2		20
CWM - Work Mgmt	17	1	2		20
EN - Integration	10	9	1		20
EN - Interaction	12	5	3		20
EN - Sec	11	8	1		20
EN - WFM	12	2	6		20
OI - All	19	1			20
OI - Anal	13	5	2		20
OI - Data Matching	10	7	2	1	20
OI - Data Services	8	12			20
OI - DWH	7	8	5		20
OI - info pol & arch	13	4	2	1	20
OI - Intel	14	4	1	1	20
OI - Rept	16	4			20
Plan & Manage	12	7		1	20
Rev Mgmt - All	3	14	3		20
RM - CA	16	3	1		20
RM - D&L	9	5	6		20
RM - GP	17	2	1		20
RM - RA	9	5	6		20
RM - Rego	17	2	1		20
Grand Total	403	145	68	4	620