

# GOVERNMENT OF WESTERN AUSTRALIA – DEPARTMENT OF TREASURY AND FINANCE

Government of Western Australia  
– Department of Treasury and  
Finance

<http://www.dtf.wa.gov.au/cms/index.aspx>

**Industry:** Australian State  
Government

**Oracle Products & Services:**

- Oracle JDeveloper / Oracle ADF 11g R1
  - ADF Faces Rich Client
  - ADF Task Flows
  - ADF Business Components
- Oracle SQL Developer 2.1
- Oracle WebLogic Server 11g R1
- Oracle RDBMS Enterprise Edition 11g

**Related Software**

- Subversion
- Serena Mashups
- Microsoft Windows Server 2008

*“With our core systems historically based upon an Oracle Database and Oracle Forms & Reports, we are confident that Oracle JDeveloper & the Application Development Framework (ADF) is the appropriate choice for new development and systems modernisation. The platform will enable us to progressively move core functionality from Forms & Reports to a contemporary JEE ADF application aligned with current Business requirements.” - David Moreton, Project Manager - Application Development, Revenue Systems Modernisation, Department of Treasury and Finance, Western Australia*

## Executive Summary

Many Government agencies like other enterprises are caught in a bind. The general public through its daily use of the internet has come to expect more from the organizations they deal and communicate with. Gone are the days when a shop-front, or the telephone alone, was the only acceptable medium for contacting the public service. The internet is now de jure in providing public services.

Yet for Governments around the world, many have been left behind or scrambling to deliver internet based solutions to the general public that provide real-time services. With a large array of legacy systems written in different technologies, some providing desktop services for outmoded over the counter services, others outdated *web 1.0* interfaces, technical skill-sets spread thin and wide, requirements-analysis-&-design processes based around older technologies, and change control procedures heavily embedded in how the enterprises undertakes the business of IT from day to day. Knowing even where to start in modernizing systems is a huge challenge in itself.

The Western Australian **Department of Treasury and Finance** (DTF) in partnership with Oracle Technology Network's Oracle ACE Director Christopher Muir, from SAGE Computing Services, identified and pursued Oracle's JDeveloper Application Development Framework (ADF) in providing the first subsystems in a modernization effort of both its internal and external facing IT systems to deliver its next generation of IT web-based systems. ADF has provided DTF the ability to provide a modern *web 2.0* set of web-enabled services, satisfying both the general public's and internal staff members' needs for richer web applications. ADF with its concept of the *task flow* has allowed the organisation to start considering the design of web applications based around business processes rather than a disparate set of web pages, where task flows can be deployed and reused to build larger applications similar to the concepts on SOA based system. In turn ADF running on the latest Oracle WebLogic Server platform has integrated with existing legacy systems ensuring that older development efforts can be reused rather than a large investment and potential failed effort in rewriting older systems from scratch.

## Organization

The Western Australian **Department of Treasury and Finance** consists of six broad functional areas - providing quality economic and financial management for the State Government, collecting State revenue and administering the associated revenue laws, undertaking a central contracting and tendering function, developing and

administering the Government's shared corporate services centre and corporate services.

As part of DTF, **The Office of State Revenue** collects monies from several State taxes and duties on behalf of the Government, and administers a range of subsidies and grants schemes, such as the First Home Owner Grant.

### The Business Issue

The first production system of several planned ADF systems at the Department of Treasury and Finance is designed as a web solution providing up-to-date information on the status of First Home Owners' Grant (FHOG) applications and their unique identification number (UIN) to FHOG applicants or their agents. The First Home Owner Grant is a long standing government initiative to assist first home owners in buying their first residential property through a subsidy scheme. The grant is administered by State governments and within Western Australia falls under the jurisdiction of DTF.

DTF WA identified a significant workload on its call centre by property settlement agents and FHOG applicants, calling to determine the status of their FHOG applications. The call centre on average received 70 to 80 calls per day taking significant resources away from other services provided. It was identified that a public facing web service that provided a self service facility to look up the FHOG application status would reduce the call centre load.

### Key Challenges

In addressing the business's concerns the key challenge in developing the web system, was to reduce the number of FHOG application enquiries to the call centre. This spawned several indirect business challenges in educating property settlement agents and the FHOG applicants that the upcoming web self-service facility was available and should be their first port of call in pursuing details about the FHOG application's status. In turn this spawned a later requirement to be able to put metrics around the take-up of the new service and the reduction of load on the call centre.

In turn the implementation of the system raised challenges around the availability of the information online versus privacy concerns, which required regulation change to allow the information to be extracted online.

In adopting ADF and JDeveloper to develop the FHOG UIN system DTF faced the following technical challenges:

- A common perception of Oracle's contemporary technologies that they are for large "enterprise" scale systems. It was unclear if JDeveloper and ADF would be suitable for a small subsystem.
- DTF had little in-house Java skills, no JEE skills or experience, and no JDeveloper or ADF skills – delivering a learning challenge in picking up the new technology set.
- Without ADF skills there was no pre-established ADF and JEE architecture for developers to deliver guidance.
- The organisation had established Oracle Application Server and OC4J skills in-house through a legacy Forms system, but no in-house skills or experience in installing and running Oracle WebLogic Servers required for ADF 11g.
- The end solution had to leverage existing Oracle database infrastructure, including data models and PLSQL modules.
- Any developed and deployed solution needed to be compatible with the existing well established change control and deployment procedures. This included supporting the application being deployed through the enterprise's standard development, test and production environments supporting developers, testers and users working in separate environments without affecting each other.

From the user's point of view, both the general public and internal DTF users, challenges included:

- Providing a simple but intuitive query facility to return FHOG application status.

- Internally provide a reporting solution to collate the user statistics on uptake, the number of queries each day, the number of successful and failed queries and more. In particular the ability to judge the number of failed queries, the query criteria used, such that the system could be "enhanced" to reduce the failure rate.

### Solution

In addressing the business need around FHOG applications, DTF developed two ADF subsystems, one external facing and another internal facing. The external facing application from the users' perspective would seem incredibly rudimentary providing only one simple screen to allow FHOG UIN enquiries. Yet behind the scenes the application does a lot more. This includes logging of all the query criteria for audit and statistical purposes as well as implementing a considerable number of business rules on when the application can and can't show results to the user.

The second internal facing application was designed to report on the audit logs recorded by the external application, including:

- Each user session and the specific query they undertook
- Whether the query successfully returned a result
- Breakdown of users by category (settlement agents, applicants, mortgage brokers etc)
- External vs. internal DTF queries
- Number of blocked users

The combination of both systems allowed DTF to significantly reduce the number of queries to the call centre, and in turn quantify the success with metrics clearly logged by the application.

In addressing the issues of adopting ADF:

- Before adopting JDeveloper and ADF several proof of concepts were undertaken to prove Oracle's ADF could meet specific challenges of the DTF Oracle environment, including integration with legacy solutions, including the substantial Oracle database objects.
- To assist staff in getting up to speed quickly, Oracle ACE Director Chris Muir through SAGE Computing Services was recruited to provide JDeveloper 11g training and ongoing technical consulting for ADF development.
- An in-house ADF architecture was developed with an eye to the future, where multiple ADF production systems would come online. The architecture based around the ADF concepts of entity objects, task flows and ADF Libraries among others placed a large emphasis on reuse as a primary initial development goal.
- Introduction of standard development-test-production Oracle WebLogic Server platforms to serve the ADF applications, to both internal and external users, including load balanced fail over production servers.
- Detailed analysis of existing change control procedure, identifying overlaps and changes required to accommodate the ADF and JEE application lifecycle. This included implementation of Subversion for file control version management, and reuse of Serena Mashups as the change control tool.

### Business Value

Between the period from late 2009 to early 2010, the online facility had serviced over 4700 queries. On average, approximately 35 queries per day. Compressed to business days at an average of approximately 45 queries per *business* day, these are essentially 45 phone calls the call centre doesn't receive upon inception of the system.

**Credits:**

Department of Treasury and  
Finance Western Australia  
Oracle Technology Network's  
Oracle ACE Director program  
Oracle ACE Director Christopher  
Muir  
SAGE Computing Service Pty Ltd  
ADF Enterprise Methodology  
Group

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Published 23 June 2010

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Application View

FHOG UIN Query:



Government of **Western Australia**  
Department of **Treasury and Finance**

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## First Home Owner Grant UIN and Status Enquiry

**✔ Your Details**

Please identify yourself.

You're a:  Settlement Agent  
 FHOG Applicant  
 Other Agent

Financial Organisation

**ℹ Search Criteria**

Please complete the search criteria specified below.

\* Application lodged with:  Office of State Revenue WA  
 Financial Organisation

PERAKRITHANSTER

\* Applicant First Name:

Middle Name(s):   No Middle Name(s)

\* Surname:

\* Date of Birth:

\* Suburb of Purchased Property:

\* denotes required fields

**✘ Search Enquiry Results**

No current First Home Owner Grant applications were found for this applicant, please check the search criteria and try again.

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# Customer Case Study

## Reporting:



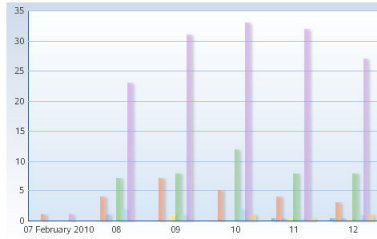
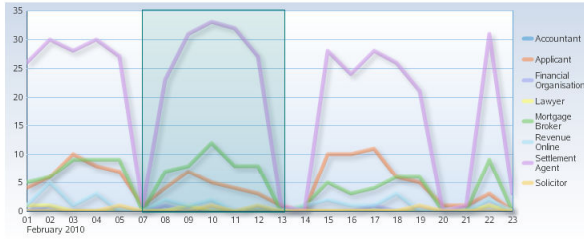
Government of Western Australia  
Department of Treasury and Finance

### FHOG UIN Enquiry Reporting

Menu Refresh Print

Current as of: 23/02/2010 09:04:00

#### Usage Statistics



#### Selected Sub-Range

Usage Date	Accountant	Applicant	Financial Organisation	Lawyer	Mortgage Broker	Revenue Online	Settlement Agent	Solicitor
7/02/2010	0	1	0	0	0	0	1	0
8/02/2010	0	4	1	0	7	2	23	0
9/02/2010	0	7	0	1	8	1	31	0
10/02/2010	0	5	0	0	12	2	33	1
11/02/2010	0	4	0	0	8	0	32	0
12/02/2010	0	3	0	0	8	1	27	1

#### Options

##### Data

- Location
- External
- Internal
- All

##### Time

- Time Scale
- Days
- Weeks
- Months

From

1/02/2010

To

23/02/2010

Apply

##### Visual

Graph Type

- Line
- Bar (vertical)
- Bar (horizontal)

Graph Dimension

- 2D
- 3D

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