

# 3 Implementation of the Rosetta project

## At a glance

### Background

The initial electronic integrated directory services program was broken into three streams, each with different objectives. The Rosetta project focused solely on the implementation of Streams 1 and 2, which related to the development and implementation of directory infrastructure and the development of an identity management framework. Rosetta is strategically significant because the directory services it set out to establish are essential components of the government's ICT infrastructure strategies within and across all government agencies.

### Key findings

- Rosetta Stream 1 has delivered the planned functionality of a WoVG enterprise directory for the expected capital cost
- It was delivered later than planned, but with no significant adverse cost or operational implications
- The annual operating costs for Rosetta are higher than anticipated and this needs to be taken into account in any benefits realisation study
- Objective evidence is not available to substantiate that the expected tangible cost savings have been realised. Nor has there been any conclusive study undertaken to demonstrate that the chosen solution has achieved the planned intangible benefits including improved security, a standardised directory infrastructure and simplified sign on.
- Rosetta Stream 2 was delivered as planned.

### Key recommendations

- In setting timeframes for major ICT projects involving multiple agencies GSG should:
  - include a realistic allowance for contingency
  - take sufficient account of other competing IT activities planned in the participating agencies.
- In setting budgets for major ICT projects involving multiple agencies GSG should ensure full life cycle cost estimation is undertaken at the planning phase.
- GSG should complete a robust and conclusive benefits realisation study of the Rosetta system.

## 3.1 Rosetta Stream 1

### 3.1.1 Background

The objective of Stream 1 was to establish an authoritative, automated and integrated directory service in all 10 government departments by December 2005.

Stream 1 was organised in three stages, with project funding committed incrementally to match work completed at each stage. The three stages were:

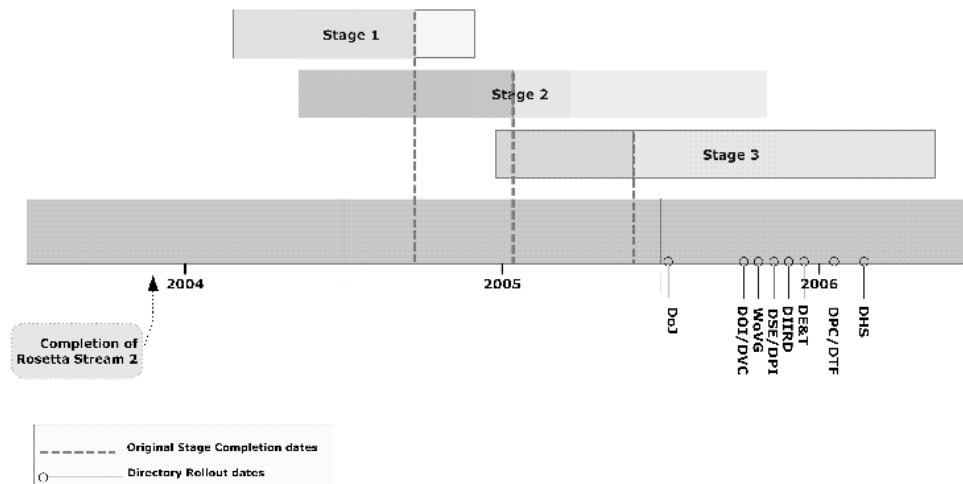
- **Stage 1** – requirements management, system analysis and design
- **Stage 2** – system development, integration and pilot deployment
- **Stage 3** – roll out to participating departments.

### 3.1.2 Achievement against planned timelines

Rosetta Stream 1 started in August 2004 and implementation concluded in July 2006, seven months later than originally planned. Key project dates are shown in Figure 3A below.

**Figure 3A**  
**Project Rosetta timeline**

#### Rosetta Stream 1 Rollout



Source: Victorian Auditor-General's Office.

The implementations in departments went 'live' in 2006, starting in April, with the last system going 'live' in July. Following the expiration of the warranty period, the project officially concluded in November 2006.

Throughout the project, issues causing delays were communicated to the Rosetta project board. The project team's exception reports and minutes of discussions with key departmental staff reveal that delays were primarily due to an underestimation of the complexity of the project, both by the vendor and the departments.

Specific delays were attributed to project scope changes, clashes with the implementation of other departmental IT projects, especially HR system upgrades; and the need for re-work and correction of defects in the solution provided by the vendor.

Stage 3 was the most severely affected by schedule overruns and required a deed of release to formally document delays and to provide an agreed framework for subsequent completion by the vendor.

It was also noted in a post-implementation report that the original schedule was regarded as 'uncompromising' and had minimal consideration for contingency planning.

### Conclusion on achievement against timeframes

The project experienced delays. However, given the complexity associated with a multi-agency implementation, these delays are not considered excessive. The tight timeframes planned and the lack of contingency in the schedule reflect an 'optimism bias', such that the delays in implementation are better viewed as underestimates in the time required, rather than running over time.

## Recommendation

3.1 GSG should develop realistic timeframes for major ICT projects involving multiple agencies that:

- include a realistic allowance for contingency
- take sufficient account of other competing IT activities planned in the participating agencies.

### 3.1.3 Achievement against planned functionality

Project Rosetta is the first WoVG ICT project to define and build a common solution integrated into 10 departments. Rosetta Stream 1 has established:

- a WoVG enterprise directory
- a uniform set of electronic meta-directories in each participating department, which are synchronised with the WoVG directory.

This has created a directory infrastructure with a two-level hierarchy as planned.

Rosetta Stream 1 has also:

- brought together information from the 10 departments, as well as information previously stored in VGDOL

- provided a 'white pages' directory for locating people (the solution has also provided 'yellow pages' capability for use in a subsequent project)
- provided a basic application for 6 of the 10 participating departments that automates creation and deletion of computer user accounts.

Only four departments followed a recommendation in the Rosetta business case to connect their HR databases to their Rosetta directories. This recommendation was aimed at establishing the HR system as the single authoritative source of identity data in accordance with recommended best practices based on research conducted by global IT analysts.

The other six departments did not connect Rosetta to their HR database due to timing conflicts between Project Rosetta and major upgrade projects for their HR databases. The departments decided that it would not be feasible or practical to develop the connection during a state of change. Consequently, they identified other databases, such as email or Lotus Notes databases, to be used to provide accurate identity information.

If the government decides to mandate HR as the single authoritative source of identity data across all agencies in the future, the Rosetta solution has the capability to implement this change.

### Conclusion on planned functionality

Rosetta Stream 1 has delivered its planned functionality.

## 3.1.4 Data integrity and system reliability

While the project has delivered the desired functionality, we found that certain controls that ensure data integrity and systems reliability are not operating effectively.

### Controls over data integrity

Rosetta aims to deliver an 'authoritative...directory service'. To fulfil this objective, there needs to be controls in place to ensure the accuracy and integrity of the information contained in the directory.

The audit analysed the data contained in the WoVG directory, as well as the data contained within three departmental meta-directories and found that:

- from the 71,869 records in the WoVG directory, 272, or 0.38 per cent have special characters or dummy data in name fields
- from the 8,345 records sampled in the departments' meta-directories, 985 or 11.8 per cent were not in the WoVG directory.

The results indicate that there are weaknesses in the controls over the data input into Rosetta directories.

The results also indicate that there is a lack of control over certain aspects of the synchronisation process. The processes built into Rosetta should ensure that a subset of information from each record entered into the departmental meta-directories is instantaneously copied to the WoVG Directory.

### Missing and incomplete data

Inspection of the data in the Rosetta WoVG directory revealed that 25 763 records (35.8 per cent) had dummy date of birth data ('01/01/1900') and 17 846 (24.8 per cent) had dummy gender data ('X').

A number of departments decided either not to include the date of birth and/or gender data in their respective departmental Rosetta meta-directories or not to forward this data to the WoVG directory.

Audit research indicates that departments are not prohibited from storing these items of personal data in Rosetta. Although date of birth and gender data is of a personal nature; it is not identified as 'sensitive' in the *Information Privacy Act 2000*.

Departments are, therefore, only required to give employees 'notice' of their intention to store this data.

The Rosetta project board, which included representatives of senior management from the participating departments, had also completed a privacy impact assessment and consulted with HR and legal representatives before completing its specification for the data to be stored in Rosetta. Certain departments also completed independent privacy impact assessments before deciding on whether or not to input the date of birth and/or gender data. These reviews supported the view that the inclusion of this data in Rosetta is not a privacy issue.

The WoVG directory is used to support automatic data matching programs. These programs are designed to match personal data in order to identify and correct duplicated staff records. The data matching process is designed to run automatically. When the Rosetta system has successfully identified a person for the first time it will create a unique personal identification number for that person. However, when a person is initially entered into the system, in the absence of a unique personal identification number, Rosetta must rely upon a combination of name, gender and date of birth to identify the person.

If date of birth or gender data is not available this process must be taken offline and completed manually, which takes time and is prone to error.

## Controls over system reliability

### *Rosetta WoVG directory reporting facility*

Reporting is a necessary control that helps keep administrators up-to-date on the accuracy and integrity of information contained within Rosetta. In particular, it is necessary in order to confirm that there is no data lost in the transfer process between the departmental meta-directories and the WoVG directory, and to check that the total number of records contained in the directory does not exceed software licensing provisions.

Staff at both the WoVG and departmental level are not using the Rosetta reporting capabilities to monitor the transfer process or to check the number of records.

### *Rosetta WoVG directory business activity monitoring*

The Rosetta design requires directories to 'talk to each other' i.e. exchange information. Rosetta directories are able to exchange information as and when required, in most cases without any human interaction, using a type of software known as middleware. Thereby, the directories are programmed to produce emails that advise the WoVG Rosetta administrator and the relevant departmental administrators that certain events have occurred, such as the transfer of information from one directory to another or the failure of a message to reach its destination.

Rosetta Operations is currently unable to analyse and monitor these system messages and is therefore unable to ensure that all messages are accounted for.

## Conclusion on data integrity and system reliability

The Rosetta directories have a high level of data accuracy overall in relation to names; however, there are weaknesses in the data input controls and GSG has not established procedures to check for accuracy and validity of data.

Our results indicate that certain controls governing the synchronisation process are not working properly. Moreover, there are no reporting procedures in place to check that data has been synchronised correctly and is complete and valid. In addition, GSG is unable to account for, or reconcile the numbers of email messages sent and received across its infrastructure.

Finally, the lack of date of birth and/or gender details in Rosetta impairs the effectiveness of the data matching process and makes it more time consuming and error-prone.

## Recommendations

3.2 That departments establish controls to:

- detect or prevent erroneous data input into directories
- correct and resubmit data that has been input erroneously.

- 3.3 That GSG review run-to-run control totals and ensure completeness of WoVG directory file updates.
- 3.4 That GSG establishes control procedures to monitor system activities.
- 3.5 That GSG confirms that the methods for exchanging Rosetta information within and between departments and Rosetta Operations are compliant with departmental privacy requirements and consistent with information classification schemes.

### 3.1.5 Achievement against planned cost

#### Project costs

The original approved funding for the project was \$16 million, sourced from the amounts appropriated by the Department of Infrastructure for the TPAMS.

From this amount \$13.2 million was to be used for the capital costs controlled by the MMV project team and \$ 2.8 million for operating costs for years 2003–04 through to 2006-07.

MMV allocated \$115 000 from its annual appropriation for 2002–03 for recurrent costs. Subsequently, the project was granted ongoing operational funding of \$700 000 per annum, which covered the costs of Rosetta Operations, which currently maintains the system at the WoVG level.

The actual combined capital and recurrent costs for Project Rosetta through to 2007–08 totalled \$19.8 million, compared with the original approved funding amount of \$16.0 million and the first year of ongoing funding of \$700 000.

Actual acquisition and development costs were \$13.1 million, which included \$320 000 for Stream 2. This was consistent with the approved capital budget.

Estimated recurrent costs for WoVG Rosetta Operations for the years 2003–04 through to 2006–07 were \$2.8 million; however, the corresponding actual costs were \$5.8 million.

Audit analysis of the 'excess' expenditure of \$3.0 million (107% overrun) indicates that in the preparation of the original budget there was a failure to fully understand and accurately estimate the costs of staff and materials required to operate and maintain the Rosetta directory. Accordingly, cost outcomes could be better characterised as 'underestimates', rather than 'overruns'.

#### Participating departmental costs

The approved Rosetta project budget of \$16 million did not include any amounts for costs incurred by departments in the implementation of Rosetta, or for ongoing operational costs in those departments.

MMV's project team monitored direct costs that it incurred for externally provided material and services, but did not monitor departmental costs. Furthermore, neither MMV nor the departments recorded or tracked internal labour or overhead expenditure incurred on the project.

During the audit, participating departments were asked to supply estimates of project expenditure, which are shown in Figure 3B below.

These estimated costs amount to more than \$7.9 million, which includes capital costs of \$1.6 million and recurrent costs of \$6.3 million. By comparison, in the 'end of program' report prepared by the project team in May 2007, the costs incurred by departments were estimated to be \$3.9 million.

**Figure 3B**  
**Estimated departmental costs for Project Rosetta**

Agency	Capital \$ millions	Recurrent \$ millions	Total \$ millions
DHS	0.24	2.64	2.88
DIIRD	0.17	0.04	0.21
DOI/DVC (now DPCD)	0.10	1.10	1.20
DPC/DTF	1.10	0.20	1.30
DOJ	0.06	1.60	1.66
DSE	0.00	0.10	0.10
DPI	0.00	0.39	0.39
DET (now DEECD)	0.00	0.20	0.20
<b>Total estimated expenditure</b>	<b>1.67</b>	<b>6.27</b>	<b>7.94</b>

Source: Victorian Auditor-General's Office.

### Conclusions on costs

The capital cost of the Rosetta development amounted to \$13.1 million, which is within the estimated figure of \$13.2 million recorded in the original business case.

However, the project experienced relatively large cost 'overruns' against plan for recurrent expenditure. Due to the nature of the project, it required more rigorous budgeting at the planning stage to determine with greater clarity the likely cost of the project, and to identify the costs to be incurred by participating agencies. This would have ensured government made better informed decisions on this ICT investment.

The exclusion of departmental costs from the business case and from funding approvals means that the full life cycle cost of the project is not transparent. It also means that no one tracked the total cost of the project.

## Recommendation

- 3.6 GSG ensures that for future multi-agency, multi-year ICT infrastructure investments:
- full life cycle cost estimation is undertaken at the planning phase
  - common project charts of account and accounting rules are established at each participating agency so development and recurrent costs are recorded consistently
  - forecast full cost to completion is updated regularly and monitored to reconcile with the cost assumptions in the original business case.

### 3.1.6 Realisation of benefits against plan

The business case included estimates of offsetting savings or benefits that would accrue from the project. The benefits from Stream 1, as listed in the business case, are outlined in Figure 3C below.

**Figure 3C**  
**Project Rosetta benefits per business case**

Qualitative	Quantitative
Improved security and compliance with legislated outcomes, including privacy and OH&S	Cost avoidance through increased productivity over five years, in net present value terms of more than <b>\$9 million</b>
Strategic option to enable high-value directory functions, including SSO and provisioning	Productivity increases and cost savings over five years of <b>\$15 million</b> in present value terms through:
Enablement of the increasing number of e-Government services that are predicated on a robust directory infrastructure framework	<ul style="list-style-type: none"> <li>• security, access management and workflow (specifically SSO, provisioning and other key directory functions unlocked through directory infrastructure</li> </ul>
Improved usability of, access to and reach, for government services.	<ul style="list-style-type: none"> <li>• enabling non-duplicated access by citizens, businesses and local government to Victorian Government services, and enablement of key elements of the TPAMS.</li> </ul>

Source: Victorian Auditor-Generals' Office.

The business case did not provide for any formal benefits realisation (BR) processes, as it was recognised that BR has a large associated cost. However, the contract with the vendor specified the development of a BR framework and plans for participating departments as a key deliverable for the project.

The framework and its plans addressed the realisation of both quantitative and qualitative benefits for the departments, and were distributed to all departments during 2006.

At the time of this report the three participating departments included in our audit sample had not completed any benefits realisation work based on the framework and plans.

MMV did commission a benefits realisation report on completion of the project; however, this review did not attempt to directly measure the benefits received from Rosetta. Rather, the report findings are based on outcomes from similar projects in other organisations and the report concludes that it is 'reasonable to expect' that the same findings can be applied to Rosetta.

### Conclusion on benefits realisation

Project Rosetta has created a standardised directory infrastructure and several departments are planning to take advantage of this infrastructure to develop ICT identity and access management applications.

To this end, the project has eliminated the need for each agency to develop their own directory solution and so, to this extent, has avoided costs. However, the audit could not determine whether the avoided costs would have been greater than the incurred costs.

Accordingly, in the absence of a rigorous and comprehensive benefits realisation study, the audit process was unable to reliably assess whether or not Project Rosetta had realised the benefits predicted in the business case.

### Recommendation

3.7 It is recommended that GSG completes a robust and conclusive benefits realisation study.

#### 3.1.7 Overall conclusion on Rosetta Stream 1

Rosetta Stream 1 has delivered the planned functionality of a WoVG enterprise directory for the expected capital cost. It was delivered later than planned, but this has had no significant adverse cost or operational implications.

The annual operating costs for Rosetta are higher than anticipated and this needs to be taken into account in any benefits realisation study.

There is no objective evidence available to substantiate whether the expected tangible cost savings have been realised. There has also been no conclusive study undertaken to demonstrate that the chosen solution has achieved intangible benefits, such as improved security.

## 3.2 Rosetta Stream 2

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A WoVG identity management framework document was finalised and approved by the Rosetta project board in September 2004.

This document contains the conceptual framework designed to address the identity and access management aspects of future WoVG ICT developments. Its scope covers access for government employees, contractors and where appropriate, members of the public.

The document discusses how the government should address problems faced in providing access to government information systems within and between agencies and in providing access to the general public. It also contains strategic recommendations concerning:

- development of consistent rules for authentication, access control and authorisation across the whole of the Victorian Government
- identification of potential requirements for future infrastructure projects within agencies, which relate to identity management, and
- privacy, liability and legislative issues associated with identity management.

### Conclusion on Stream 2

Rosetta Stream 2 has delivered the planned framework document as intended.

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