Appendix N – Enterprise Systems Asset Management Plan

September 2011

westernpower

Strategic Program of Works

Enterprise Systems Asset Management Plan

(ESAMP)

Original Issue: March 2011

Prepared by: Mohsin Miyanji

This Revision: March 2011

Date for Next Review: March 2012

Contents

1 Background and Objectives

Western Power has a number of IT systems that are used in the management of key operational and support business processes across the organisation - many are legacy in nature and have evolved over time. Some of these systems are based on outdated technology which has introduced a number of challenges including:

- Increased business risk due to key resources leaving the workforce; the current market does not have relevant capabilities to fill the gap.

- Increased cost of maintaining the systems on old mainframe technology.

- Reduced flexibility to cope with changes to the business environment (disaggregation & regulation to name a few).

In response to these challenges and as part of its IT strategy, Western Power developed an IT Applications Landscape which provided the transition from its current state to a future target state, along with the key guiding principles (DM# 5554682). During the second Access Agreement (AA2), the organisation embarked on the Strategic Program of Work (SPOW) to start the transformation journey of the core applications identified in the landscape. Further information on the program can be found in the SPOW Statement of Program Intent (DM# 6172280). The organisation adopted a Commercial Off the Shelf (COTS) strategy as one if its key guiding principles. At the conclusion of this program, many of the core legacy applications will have been replaced, reducing the associated business risk amongst other benefits.

Upon the commencement of next Access Agreement (AA3), the transformation journey will continue in some areas while there will be a need to maintain established systems and IT infrastructure at a level that allows us to meet our current and future business requirements. Furthermore, as the organisation develops its submission for AA3, there is a greater need to document a plan covering the management of our Enterprise Systems to assist in the justification of planned capital expenditure. Individual business cases will need to be developed to justify the actual spend in the investment categories identified in the plan when required.

This plan outlines the actions that need to be taken in order to:

- Maintain core systems at vendor supported levels and infrastructure within industry accepted tolerances (age and capacity).

- Complete initiatives that replace other critical and small non critical legacy systems.

- Complete initiatives that respond to specific external pressures from Shareholder, Board, Regulators and Customer groups.

- Complete initiatives that enable us to meet our obligations as a regulated business. This includes building and maintaining systems that will enable us plan and complete the works program, manage assets, engage and bill customers etc.

- Complete initiatives that reduce the current level of business risk and/or improve the performance of the business.

2 Guiding Principles

The key guiding principles, which have been derived from Western Power's desire to simplify its IT Applications Landscape (DM# 5554682), has helped form the basis of the plan. These are:

- Commercial-Off-The-Shelf (COTS) approach – As part of its overall IT Strategy, the organisation adopted a COTS approach which is targeted at leveraging industry best practice by making use of contemporary applications. Any new implementation will consider a COTS solution where it is feasible.

- Maintain currency of systems – As vendors introduce new versions of their applications, support for older versions diminishes and may stop over time. This can introduce a significant business risk from unsupported technologies. Furthermore, if applications are not kept current, the organisation can incur a significantly higher cost of upgrading at a later time.

- Adopt industry standard business processes - Optimise business processes by adopting standard Transmission and Distribution industry processes which are often embedded within the COTS applications. Adopting industry standard processes means that the need to customise the systems is significantly reduced.

3 Coverage and Scope

This plan covers capital expenditure required for the Enterprise Systems supporting core business processes.

The business process areas and the corresponding systems include:

Process Area	Systems Impacted
Corporate Asset Management	Mincom Ellipse, ESRI
Streamlining Works Delivery	Primavera, Mincom Field Enablement
Network Management	TCS, Power Factory
Business Intelligence	Cognos, Data Warehouse
Supply Chain	Ariba
Enterprise Content Management	DM
Customer Service & Billing	Oracle CC & B
Metering	MBS, MVRS, MV90

3.1 In Scope

For each of the systems identified above, the key elements that will be considered in scope within the asset management plan include:

- Major upgrades which introduce new software functionality or big changes to existing functionality. They typically come in the form of a new version e.g. from version 5 to 6.

- Necessary minor upgrades to the systems which include bug fixes and small changes to existing functionality. They typically come in the form of version updates e.g. from Version 9.1 to 9.2. The maintenance plan only cover updates that are required to maintain the integrity of the system or those that have been identified as necessary to satisfy a known business need.

- IT Asset Replacement which involves retiring older systems and replacing with newer software. Older systems may need to be replaced for a number of reasons, key ones being they are or will no longer be supported by the vendor, vendor profile may pose a significant business risk to WP, or the systems are legacy applications posing a significant business risk with key staff leaving.

- IT Asset Enhancements which means extending the functionality of existing system, introducing new modules or building new marts in case of a data warehouse.

- Impact of some key known influences including:

  o Need for Compliance e.g. in the metering space, the need to replace approx 100k meters p.a. from 2014 onwards due to compliance.

  o Changes being driven by current SPOW and Operational Excellence (OE) initiatives.

3.2 Not in Scope

During the lifecycle of each system, there are a number of changes that are initiated by individual business units that require configuration changes and enhancements to these systems. Vendors also provide some minor updates which introduce small changes to functionality of the product. These minor enhancements and updates will not be covered under this maintenance plan as they can be triggered ad-hoc and rely on the governance of Business Reference Group (BRG) to determine their value and priority in the organisation.

There are also a number of influences that could trigger a significant impact if they occur. These include but are not limited to:

- National Broadband Network
- Smartgrids Development
- Full Retail Contestability
- Change in business structure including dis or re-aggregation
- Material change in delivery strategy (50/50)
- Material adoption of new operational technologies

Given the probability, nature, scale, scope or timeframes of these influences is unclear; their impact has not been accounted for in the plan. Should these trigger events occur, the plan may have to be reviewed to accommodate the impact of the change.

4 Enterprise Systems Management Plans

This section describes the core Enterprise systems within the scope of this plan, their current state and ongoing activities, product roadmaps, and key activities anticipated during AA3. Associated costs for 11/12 have been obtained from the SPOW Statement of Program Intent (DM# 6172280) and Changes to SPOW Funding for 2011/2012 (DM# 8013344).

4.1 Mincom Ellipse

Ellipse is the organisations core Enterprise Resource Planning (ERP) system which is used in the management of asset and works, finance, human resources, and the supply chain. A number of other specialised systems integrate with Ellipse for the purposes of keeping both systems up-to-date and synchronised. Mincom Field Enablement Suite, although heavily integrated with Ellipse, is considered as a system in its own right in this plan.

4.1.1 Product Roadmap

Mincom announced the release of Ellipse version 8 in 2010. This version will introduce a number of capabilities including enhanced user experience, intelligent analytics and reporting, GIS integration, and an embedded mobile platform. Some of these capabilities are already available in the current v8 release whilst some will be introduced in later updates of v8. Mincom do not have a published roadmap for Ellipse that extends beyond 2013 but historically, new versions have been released about every 5 years so the next version is expected to be released in about 2015. However, experience with Mincom's product development trend, suggests that this new version will reach maturity in about 2016/2017. For each version, Mincom release updates regularly which introduce functionality enhancement and bug fixes.

4.1.2 Current Activities (AA2)

There are a number of initiatives within SPOW and OE programs that have either just completed or are changing Western Power's Ellipse implementation.

Western Power's Ellipse platform has recently undergone a major upgrade from version 5.2 to 6.3, introducing new functionality in the areas of Human Resource and Payroll Management to the business. The upgrade has enabled employee and manager self service for functions such as leave processing and time sheeting.

As part of the ongoing systems transformation work within SPOW and OE, key areas of Ellipse including its Asset and Works Management Modules, and Fixed Asset Register will undergo significant configuration changes. There is already a reserve budget in AA2 allowing for this work to proceed. Western Power is also working with Mincom to develop Ellipse integration with ESRI GIS and Mincom's Mobile offering.

4.1.3 Future Activities (AA3)

The SPOW Asset and Works Subprogram will deliver core asset and works management capability during AA2 and this capability will need to be further embedded across the business during the early part of AA3 to reap maximum benefits. This will require further capital investment in optimising the Ellipse Asset and Works modules.

Although Ellipse v8 is has already been released, some of the core features are still being developed (e.g. GIS and Mobile) and industry has not yet widely adopted this new version as yet. Western Power expects support for its current version to continue through to 2013/2014 and will only upgrade to v8 when this support starts diminishing. This will provide the organisation with a more stable product and also

reduce any risk to projects trying to implement core Asset and Works functionality during the early years of AA3.

Given it is expected that v8 of Ellipse will be installed in 2013/2014, it implies no other major upgrade occurring during the remainder of AA3. However, minor v8 updates will need to occur almost annually to keep the system current and eliminate any bugs that surface.

Western Power's Ellipse roadmap can be summarised in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
Refer Section 5	$3m	$2m	$1m	$1m	$1m
Reconfiguration of Asset & Works Processes and Modules, and Fixed Asset Register MER reporting, MEPS Implementation	Enhancements to Ellipse Asset & Works Processes and Modules	Upgrade to v8	Minor Update V 8..x	Minor Update V 8.x	Minor Update V 8.x

4.2 ESRI & Telvent GIS products

In mid 2010 Western Power purchased a suite of products which are intended to be implemented, configured and to some limited extent customised to provide the full gamut of Geographic Information System (GIS) support required by Western Power. Though there are several products from two principle vendors, the package is provided and supported by ESRI Australia.

The GIS functions required by Western Power (like other comparable utilities) are diverse, but primarily include equipment registration, network analysis of many forms, support for outage management, environmental management, real estate management, work planning, support for asset mission development and tracking, network route analysis, land stakeholder management, network planning and design.

This suite of products will be introduced in the coming years in a number of stages resulting in the replacement of at least 6 major legacy systems, and the ability to remove all reliance on mainframe computing.

4.2.1 Product Roadmap

Both ESRI and Telvent are large and established vendors of GIS products to the Electricity Sector internationally. ESRI provide the base mapping and analysis product, while Telvent are a partner who produce the network management tool which is used (only) with ESRI. Both have significant R&D capabilities and have a track record of producing upgrades in lockstep every few years.

Importantly, the GIS capabilities in the electricity industry are moving quickly, both because of "pull" from the industry as computer power becomes greater, but also "push" from environmentals like smart grids, carbon pricing and regulatory demands.

We expect the rate of significant upgrade to continue unabated.

4.2.2 Current Activities

Current work under way in the GIS space is essentially to implement, configure, customise and integrate ESRI into the Western Power environment, both in a functional sense and in a process sense.

These products are replacing a significant number of bespoke systems which are up to 22 years old and are tailor made for Western Power (and SECWA before it) Consequently, the major task at hand to actually design an implement an entirely new set of systems and processes.

The key activities is to design a configuration which suits Western Power and then to migrate all existing data and required function to the new system; and secondly to integrate with other systems, most notably Ellipse.

These activities are done under the auspices of SPoW Equipment and Works sub-programme, consistent with the overall improvement in systems and processes.

4.2.3 Future Activities

While major outcomes will be achieved by the end of AA2 (eg replacement of mainframe systems, improvement in asset management capabilities) The activities described above under "current activities" will continue into the AA3 years. This is due in part to the sheer volume of change intended, and also in part to the practical constraints placed on speed of delivery because there is so much interdependence between SPoW asset and works sub programme activities.

The SPOW Asset and Works Subprogram will continue to deliver core asset and works management capability during AA2 and this capability will need to be further

embedded across the business during the early part of AA3. This will require further capital investment in optimising the work flow around, especially, the Primavera planning, GIS modelling and Ellipse asset and work management.

Towards the end of AA3, our implementation of GIS will be more than 5 years old, and without prior upgrade, perhaps 2 versions behind. A major upgrade would then be called for.

The profile of significant capital expenditure on GIS implementation is laid out in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
Refer Section 5	$2m	$1m			$2m

4.3 Mincom Field Enablement Suite

It is intended that the Mincom Field Enablement suite of products will be implemented as the Enterprise solution supporting field processes, and is comprised of three core components Mincom Mobile Inspector (MMI), Mincom Mobile Worker (MMW) and Mincom Commander (MC). The MC product is designed for the back office and supports the scheduling and dispatch of work while the MMI and MMW products will replace the paper based processes currently in use by field workers. This system will integrate with enterprise systems such as ESRI and Enmac, drawing on and updating asset and work data supporting the core work execution processes.

4.3.1 Product Roadmap

Mincom and Western Power have entered into a partnership with the outcome being suite of mobility products suited to utilities. The intent is that the roadmap for product release will be heavily influenced by Western Power's requirements.

4.3.2 Current Activities

Mincom Mobile Inspector product will be used to capture data for asset inspections by replacing paper based processes and all field based legacy systems such as DRE and MIST. The first implementation of Mincom Mobile Inspector, due April 2011 will replace the DRE application for Bundled Pole Inspections.

Work is underway targeting for replacement those work types that are currently being supported by either DRE or MIST. This strategy aligns with the ongoing system transformation work within SPoW, and addresses the dependency the ISAM project have on the Mobile Workforce project to ensure that as legacy asset management systems are replace with Ellipse the ability to continue to capture data in the field is not lost.

In addition the work associated with partnering with Mincom in the development of the Mincom Mobile Worker and Mincom Commander will continue with the first implementation of basic functionality for the MMW planned for the last six months of the AA2 period.

4.3.3 Future Activities

As Western Power is partnering with Mincom in the development of Mincom's mobility suite of products it is anticipated this will continue through to the middle years of the AA3 period.

By the end of the AA2 period it is anticipated that the Mobile Workforce Solution Project will deliver the core functionality for Mincom Mobile Inspector and base functionality for Mincom Mobile Worker. As product development progresses it is anticipated that 80% of relevant Mincom Ellipse functionality will be available to Western Power Mobile users by the middle of the AA3 period. Included in the 80% of relevant Mincom Ellipse functionality is field user access to the HR, Payroll and GIS functionality.

Although delivery of the Mincom Schedule and Dispatch product is not expected to occur until the early part of AA3, Western Power will continue to work with Mincom on its development through the later stages of AA2.

In light of the significant changes being made in the core Ellipse products with the introduction of v8, it is unclear what the impact will be on the Mobile Products, and as such decisions on future activities will need to be reviewed and adjusted.

Western Power's Mincom Mobile roadmap can be summarised in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
Refer Section 5	$2m	$2m			$1m
Deliver majority of Mincom Mobile Inspector Applications Minor enhancements to Mincom Mobile Inpsector First release of Minom Mobile Worker	Enhancements to Mincom Mobile Inspector Second release Mincom Mobile Worker First release Mincom Schedule and Dispatch	Minor Update V 8.x	Minor Updates +	Minor Update V 8.x	Major Upgrade Mincom Mobile Inspector and Worker

4.4 Primavera Project Portfolio Management Systems

Primavera Project Portfolio Management solutions (P6 and ProSight) assist and supports Western Power in making better portfolio management decisions, evaluate the risks and rewards associated with projects and works, and determine whether there are sufficient resources with the right skills to accomplish the work. These systems provide the program and project execution and control capabilities needed to successfully deliver programs and projects on time, within budget and with the intended quality and design. A program/project Risk Analysis solution is offered as part of the Primavera suite.

A number of other specialised systems integrate with Primavera for the purposes of keeping systems up-to-date and synchronised. Mincom Ellipse is heavily integrated with Primavera. Other integrations will be with GIS, Ellipse Work Planner and appropriate estimating toolsets (Success Estimator and Ellipse Estimating).

4.4.1 Product Roadmap

Primavera released P6 version 8 in late 2010. This version will introduce a number of capabilities including enhanced user experience, intelligent analytics and reporting. Historically, new versions of P6 and ProSight have been released about every 12 months.

4.4.2 Current Activities

There are a number of initiatives within SPOW and OE that will impact on Western Power's Primavera implementation. These are all being managed in the Enhance Planning and Works Management (EPWM) Program.

Primavera will undergo a major upgrade in P6 from version 6 to 7 and ProSight from version 7 to 8, introducing new functionality in the areas of Project Portfolio Management to the business. As Western Power increases utilisation of Primavera to propose, prioritise, select, plan, manage, execute, and control the works programs, the upgrade to P6 v7 and ProSight v8 provides the basis for increased scalability and takes advantage of the enhanced user experience.

As part of the ongoing process and systems transformation work within SPOW and OE, key areas of Primavera including its Portfolio and Project Management Modules will undergo design and configuration changes. There is already a reserve budget in AA2 allowing for this work to proceed. Western Power is also working with Primavera to develop Primavera integration with Mincom Ellipse, ESRI GIS, Workflows Manager, Estimating (Success Estimator and Ellipse) and further developing Mincom's Work Planner offering.

4.4.3 Future Activities

The SPOW Asset and Works Subprogram will deliver core asset and works management capability during AA2 and this capability will need to be further embedded across the business during the early part of AA3. This will require further capital investment in optimising the Primavera Project Portfolio Management solutions (P6 and ProSight). Furthermore, as other systems which are heavily integrated with Primavera undergo changes, there will be a need to enhance the Primavera suite to keep in sync with the surrounding systems.

Given we expect a new version of Primavera to be released every 12 months, there will be a need to keep the system current. We envisage that P6 v8 will be the next major upgrade due to a shift from client-based to web-based technologies. Reviews will be conducted on each of the future releases for justification for replacement and

upgrade, based on benefits analysis. Appropriate Process mapping, Change Management, Training and Testing will be required as a result.

11/12	12/13	13/14	14/15	15/16	16/17
Refer Section 5	$2m	$1m		$1m	
Introduction of efficient and effective of Asset & Works Processes to enhance planning and works management via project portfolio management governance. Upgrade to P6 v7 and ProSight v8	Enhancements to Asset & Works Processes and Modules Upgrade to P6 v8 and introduction of Project Risk Analysis and Analytical Reporting	Minor Update To P6 and ProSight		Minor Update To P6 and ProSight	

4.5 Document Management System

The Document Management (DM) system is one repository used to manage, create, store, and retrieve Western Powers records. It also has a records management component to it which manages the final disposition of all records, a function that is a requirement under the *State Records Act 2000.*

Western Power's Document Management system was purchased and implemented across the business and has been in use for over 10 years. In 2009, a major upgrade was undertaken to move from DMS (Hummingbird Docs Open 3.9.6) to DM (OpenText eDOCS DM 6.0.4).

4.5.1 Product Roadmap

Open Text have announced that the current version of eDOCs DM will be superseded by their new Enterprise Content Management (ECM) Server. The release of ECM Content Server is expected to happen towards the tail end of financial year 2010 / 2011. End of support for eDOCs DM is expected to start reducing after 18 months of the release of ECM Content Server. This is reflected in the table below:

Product	Q2/2011	Q3/2011	Q4/2011	Q1/2012	Q2/2012	Q3/2012	Q4/2012
eDOCS DM 6.0.5	Superseded						Support reduces
ECM Suite (Content Server)	10.1 release						

4.5.2 Current Activities

In the 2010/11 financial year Western Power will be upgrading to the next point release of Open Text's DM system ie DM 6.0.4 to 6.0.5. There will be no version or point release upgrades after this release and support for the DM system will be limited. To address this issue, there is currently an Enterprise Content Management strategy being written which will look at not only Document Management but all components of an ECM.

4.5.3 Future Activities

The future of DM is dependent on the recommendations of the ECM strategy that is yet to be presented to the Business Reference Group (BRG) for endorsement. Any additional components of the ECM will be funded through the IT enhancements budget. Whether or not Western Power embarks in Open Text's ECM Content Server as the natural progression to eDOCS DM is unknown at this stage.

In any case, Western Power will need to take some form of action to mitigate the risk of a platform with limited support. This action is anticipated to happen between 2012 and 2014 as support is expected to start reducing in 2013.

A staged implementation of the different components of an ECM will most probably be the direction Western Power takes.

11/12	12/13	13/14	14/15	15/16	16/17
-	-	-	$1m	-	-
			Mitigating Action for DM		

4.6 Business Intelligence

Business Intelligence is a set of methodologies, processes, architectures and technologies employed by the business in order to analyse and understand data in support of strategic, tactical and operational decision making.

There are two main components to Business Intelligence. These are 1) an enterprise data warehouse, which consists of an Oracle database along with the routines to populate the database from source application systems, and 2) the application that allows end users to create and view reports and analyses, currently Cognos.

Because these two components are tightly integrated for Business Intelligence, they are treated as one for the purposes of this submission.

4.6.1 Product Roadmap

Western Power is currently using version 8.2 of the Cognos suite of reporting tools. This will be upgraded to version 8.4 in Q2 2011. However, version 10 has recently been released and, based on previous experience, vendor support for version 8.4 is expected to cease in about 2-3 years. As a result, an upgrade from version 8.4 to version 10.x is planned for FY 12/13. A second major upgrade is planned for FY 15/16 as there is typically a three year major release cycle for these types of products.

4.6.2 Current Activities

There are a number of initiatives within SPOW that have either just completed or are changing Western Power's Business Intelligence implementation.

The Equipment and Works Data Warehouse project has recently implemented a number of subject areas related to various aspects of the Transmission and Distribution network assets. Prior to this, subject areas relating to the delivery of Transmission and Distribution projects, with detailed information on budgets, forecasts and actuals, was implemented.

In addition, significant work has recently been undertaken on the metering subject area to improve and enhance the reporting capability. The Picasso suite of reports was enhanced to include additional information in order to provide budgetary analysis across the entire organisation, and the Treasury Cashflow application has been updated.

Also, the last of the Cognos version 7 users were migrated to Cognos version 8.2.

4.6.3 Future Activities

Western Power's need for quality information on which to base decisions will only increase over time. As a result, Business Intelligence will need to undergo continuous improvement in order to keep the information relevant and responsive to business needs.

The current implementation of the Equipment and Works Data Warehouse project will deliver a foundation for reporting in the asset management and work management areas. As the need for richer information grows, further capability will be delivered to allow analysis across subject areas. These include network analysis and full asset life costs. In addition as other projects implement new asset management modules and systems, Business Intelligence will be extended to deliver new subject areas based on these new modules and systems. Key areas will be Supply Chain and Smart Grids.

Towards the end of the AA3 period, it is anticipated that work for the next Access Arrangement will commence. By then, Business Intelligence will be central to providing the information required to substantiate future initiatives. However, further cross-subject area analysis may need to be developed in order to satisfy all the requirements of the submission.

Western Power's Business Intelligence roadmap can be summarised in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
$2.5m	$2m	$2m		$1m	
Completion of initial set of subject areas for Equipment and Works Data Warehouse Project	Development of additional analytical functionality to correlate across subject areas - Network Analysis - Asset life costs Major upgrade to Cognos v10.x	Development of new subject areas and enhancement of existing subject areas. May include: - Supply Chain - Customers - Smart grids - Compliance Minor Update to Cognos		Enhancements to support next AA submission - additional analytical functionality Major upgrade to Cognos	

4.7 Metering Systems

Three key metering systems are considered in this section – Hansen MBS, MVRS and MV90.

MBS or "Metering Business System" is the core metering system introduced primarily to support Western Power Networks accountabilities under the Wholesale Electricity Market (WEM) which commenced in 2004. Key functionality is the independent provision of "metering data" and "services" to the electricity market. Metering data can be loosely described as the meter readings themselves along with configuration/site data or "Standing Data". Services captures management of the Meter asset itself and the mechanism used to achieve this is Service Order driven (both Internal and External).

A number of other specialised systems integrate with MBS for the purposes of keeping both systems up-to-date and synchronised. Some key Western Power systems integrated with MBS are Mv90, Mvrs, UIQ (SmartGrid) and NetCIS (NetCIS relies on MBS as its only source of metering data).

MVRS and MV90 are the key metering systems used in the collection, processing and management of meter readings.

4.7.1 Product Roadmap

As MBS is highly customized there is no formal roadmap as such from the Vendor (Hansen). Internally any short term change is driven purely towards defect management with electricity market compliance as a key focus for any future enhancement approvals.

4.7.2 Current Activities

MBS has just recently had a major enhancement implanted in the form of an IDE (Interval data Engine) upgrade. This upgrade was implemented as part of the SmartGrid project and is required for the projected large growth of Interval data meters loading into MBS. As a result of issues experienced with the IDE upgrade, current activities are largely restricted to issue workarounds with the next scheduled patch releases 6.3 and 6.3.1 almost solely dedicated to 6.2.2 defect fixes and IDE remediation. In effect for the period up to April 2011 there will be an enhancement freeze to enable defect fix implementation and to clear the Service Call backlog.

An ongoing issue with MBS has been performance with a substantial impact being felt by normal business users (eg. Metering BAU data entry). This issue has been present in varying degrees for at least 2 years. Latest analysis indicates that the current storage architecture is inadequate and that a change to "Oracle ExaData" is a requirement. However initial feedback from the vendor (Hansen) indicates that this would be a major/substantial piece of work.

The supporting MBS architecture/infrastructure has also been demonstrated as inadequate for purpose. Over at least the last twelve months an increasing rate of failure has occurred within supporting systems such as "Web Methods" and the External Parties FTPS Server. These failures have been of major concern as they have often resulted in Western Power being non-compliant in its legislated provision of Services to the WEM.

4.7.3 Future Activities

There will be a number of changes that will have a significant impact on the Metering Systems during the AA3 period. These include:

- Asset and Work Management of over 100,000 meter changes per year for compliance

- An increased field workforce of meter installers, inspectors and special reads

- Increased communications with the market about metering data

- Increased complexity in metering requirements due to take up of bi-directional meters

MBS has been suffering from ongoing performance issues and major problems resulting from poor quality patch releases/upgrades and inadequate architectural design. MBS in its current form is not in a position to support the business in the long term. There is also a major business risk inherent in using a critical application from a small and relatively under resourced vendor (Hansen).

The current thinking and efforts have to be devoted towards a determination of whether MBS in its current form is fit for purpose. Depending on the outcome of the review, at a minimum it is expected that MBS will have to be revamped to cope with the changes. The alternate outcome would be a complete replacement of the system with a new one, which would eliminate the key risk posed by the vendor profile.

MVRS and MV90, are considered relatively stable and are each expected to undergo a major upgrade during the middle years of AA3.

The profile of significant capital expenditure on Metering Systems is laid out in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
0m	$2m	$10m	$12m	-	-
	Review of MBS	MBS Revamp / Replacement	MBS Revamp / Replacement Major Upgrades to MVRS and MV90		

4.8 Ariba

Ariba has recently been introduced as the organisations software solution for the Sourcing to Pay function. Ariba consists of two main segments; Source to Contract, and Procure to Pay. There are two approaches to implementing an Ariba solution: One approach is to implement the CD solution which is installed by the enterprise behind their firewall; the other approach is to access the On Demand Solution where an organisation accesses Ariba's hosted solution. To date the Source to Contract components have been implemented by Western Power utilising the CD solution. Ariba has only one integration point with other Western Power Systems. Ariba receives a daily upload of invoice data from Ellipse via the Data Warehouse.

4.8.1 Product Roadmap

Ariba is currently starting its strategic planning for their approach to the next 18 months. As Ariba have not started planning a next CD release prior to this strategic planning session, it is highly unlikely that there will be an upgrade of the product in the next 2-3 years. Until Ariba have completed their strategic planning it is uncertain as to the approach that will be taken to integrate new features into the CD product. Enhancements and new features may be introduced by way of service packs. Ariba will be looking for customer feedback during the planning process to determine the strategy to move forward.

4.8.2 Current Activities

Currently the business case to authorise the commencement of Ariba phase 2, the implementation of the Procure to Pay modules of the Ariba application is awaiting sign off. Once sign off is achieved it is envisaged that the project will commence February/ March 2011 and have a go live date of November 2011. A reserve budget allocation for the project has already been included in the AA2 period.

The Procure to Pay implementation will require an interface with the Ellipse application, which is likely to remain the invoice payment application.

4.8.3 Future Activities

Once Procure to Pay has been implemented, Western Power will have deployed the full suite of Ariba products available for CD implementation and no major enhancement activities are expected during AA3.

As Ariba have indicated that it is unlikely that there will be a major upgrade in the next 2-3 years, future activities would be limited to the application of service packs to ensure that the product complies with vendor support criteria. The approach to be taken for major upgrades will be adherence to the underlying assumption that for an application of this size, major upgrades occur on a five year cycle. Therefore budget should be allocated during the 2014 – 2015 period.

The profile of significant capital expenditure for Ariba is laid out in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
$1m	-	-	$1m	-	-
Completion of Procure to Pay functionality			Major upgrade to Ariba		

4.9 Oracle CC&B

The Oracle Utilities Customer Care and Billing (CC&B) application is capable of handling every aspect of utility customer information-service connection, meter reads, rating, billing, and more-while also undertaking associated functions like payment processing, collections, field service, and meter management.

Oracle Utilities integrates industry-specific customer care and billing, network management, work and asset management, mobile workforce management and meter data management applications with the capabilities of Oracle's industry-leading enterprise applications, business intelligence tools, middleware and database technologies.

NetCIS is the SPOW project that was established to implement the CC&B solution at Western Power. NetCIS 1 went live in July 2009 and established the Network Access Billing function of the product.

4.9.1 Product Roadmap

Currently Installed Version 2.2.0. Oracle released Version 2.3.0 in January 2010. There are no known requirements for Western Power to upgrade to Version 2.3.0 within the next 12 months.

Oracle has plans to develop the following CC&B capabilities:

- Smart Grids
- Oracle Utilities Business Intelligence
- Sustainability and Risk Management
- Mobile Workforce
- Identity Management

The CC&B release cycle has been, and looks like continuing to be a little inconsistent. Oracle is reluctant to provide specific product information at this stage. Given the lack of clear product direction, the underlying assumption that an upgrade will be required after 5 years will be used.

4.9.2 Current Activities

NetCIS is currently in the final stages of its phase 2 implementation. The core processes being delivered include Planned Outage Management & Customer Relationshsip Management. Final configuration adjustments, staff training and implementation will be completed by first quarter 2011. NetCIS 2 will build upon the customer data base platform from NetCIS I - establishing the **customer care** components; creating contact histories and tracking customer contacts, enquiries and complaints.

Planning and scoping for NetCIS 3 is now under way.

4.9.3 Future Activities

NetCIS 3 has been set up mainly in response to the Minister's call for greater focus on improving service to customers. The primary focus of NetCIS 3 is to enable more information to be collected directly from customers and interfacing systems which also reflects the relationships between people, properties and assets. This will be achieved through enhancing and optimising the use of Oracle CC&B with integration built between other core Enterprise systems. More specifically, CC&B will play a key part in the replacement of DQM alongside ESRI, Ellipse, Primavera and MBS.

NetCIS 3 is expected to start towards the end of AA2 and continue in the early years of AA3. Once the system is embedded across the business, the only anticipated capital expenditure during the remainder of AA3 will be a major upgrade to ensure the system is kept current and supported at an adequate level.

The profile of significant capital expenditure for Oracle CC&B is laid out in the table below:

11/12	12/13	13/14	14/15	15/16	16/17
$ 2m	$2m	$1m	-	$1m	-
Customer Initiated Work Process Automation (DQM Replacement) Interfacing with other systems to provide single point of customer/stakeholder information	Continue Customer Initiated Work Process Automation (DQM Replacement)	Configuration Changes and enhancements made to CC&B		Major upgrade to CC&B	

4.10 DigSilent PowerFactory

Western Power purchased Digsilent's PowerFactory product to be used for the modelling and analysis of the Electrical Network. It is currently being used to aid in planning capacity for the transmission and distribution networks. This includes performing load flow analysis, undertaking dynamic studies, and performing system simulation studies. Not all users in the planning areas have transitioned to PowerFactory.

PowerFactory is being implemented by the SPOW Reliability project which was initiated to provide a tool and information set to help in technical aspects of planning and network reliability analysis.

4.10.1 Product Roadmap

The roadmap for PowerFactory is not clear and was not available from the vendor. However, judging from the past, there seem to be major releases about every 2 years, with minor updates occurring almost quarterly. Major updates typically involve database changes.

4.10.2 Current Activities (AA2)

The current phase of the PowerFactory implementation includes:

- Embedding use of the package across all users in Network Planning. This will include the creation of a central data repository to enhance the value PowerFactory can provide to the users so they have the appropriate data sets to fully transition over.

- Rolling out additional functionality in Power Quality analysis (Voltage, Flicker, Harmonics Distortion analysis) to the Network Performance Branch. These functions will partially replace some capability in existing legacy applications such as LV Design and Flicker.

- Upgrading the underlying architecture to optimise performance due the increasing volumes and complexity of data and structures.

There may also be a major upgrade of PowerFactory in 2011/2012.

4.10.3 Future Activities (AA3)

During AA3, the core functionality of the system is expected to be fairly embedded and to ensure the system remains current; the organisation will have to allow for major upgrades.

The business has indicated some of their wishes during AA3 where they expect PowerFactory to play a part. These include:

- Minor Digsilent loading script update to account for new PV data source and to ensure that PV data is accessible, loaded into the e-CIM and exported to PowerFactory.

- Minor Digsilent loading script update to account for PPG-private parallel generators.

- Full scripting integration of Stationware to PowerFactory for Distribution Protection Schemes 9 (May be included in Transmission Planning Branch budgets- as there is a PowerFactory component; it is mentioned here.

- Minor DigSilent loading script update to account for customer disturbing load characteristic (once new source is established)

- Geometric modelling of conductors.

However, these enhancements will have to utilise funding available through the BRG once the need has been validated and the role of PowerFactory in meeting the needs has been better defined.

This table below considers the known PowerFactory profile for the next 6 years.

11/12	12/13	13/14	14/15	15/16	16/17
$1m	$0m	$0.5m	$0m	$0.5m	$0m
Major Upgrade + Enhancement Work which includes: - Additional PQ Analysis functionality - Upgrade Architecture - Create data repository		Major Upgrade		Major Upgrade	

4.11 Trouble Call System (TCS) – Upgrade Impacts

TCS is Western Power's core outage management system. The TCS solution includes the EnMac TCS module, which is part of General Electrics EnMAC application. TCS integrates customer fault calls with the real-time status of the distribution network, enabling staff to provide accurate information to customers on loss of supply. It has also enabled the deployment of maintenance crews and the tracking of incidents through to completion of repairs and reports. Western Power went live with TCS in Sept 2008, replacing TCMS and its reliance on mainframe for outage management.

Any associated upgrades or changes to the EnMac system will have significant impact to integration points with other Western Power systems and the extended TCS solution in the field.

4.11.1 Product Roadmap

At the time this plan was developed, the roadmap for EnMAC TCS has not been obtained. The system, like any other software, will evolve over time and it will be assumed that a major upgrade will occur 5 years after its initial installation.

4.11.2 Current Activities (AA2)

EnMAC TCS is fully installed and operational and there is no major CAPEX activity ongoing.

4.11.3 Future Activities (AA3)

No significant activities apart from a major upgrade are anticipated during AA3. This upgrade potentially means that the upstream field component of TCS will also have to undergo changes. Additionally, all integration points with the EnMAC TCS module will need to undergo changes, such as the Data Warehouse.

This table below considers the cost profile for the next 6 years.

11/12	12/13	13/14	14/15	15/16	16/17
-	-	-	$1m	-	-
			- Integration impact resulting from upgrade - changes to field application resulting from upgrade		

5 Summary of Costs Associated with Asset Management Activities

The table below provides the aggregated costs associated with the management activities outlined in the previous section into their respective process areas (as defined in Section 3 – Coverage and Scope).

	AA2	AA3					
Process Area	**11/12**	**12/13**	**13/14**	**14/15**	**15/16**	**16/17**	**Total AA3**
Corporate Asset Management	11.5	5	3	1	1	3	**13**
Streamlining Works Delivery	8	4	3	0	1	1	**9**
Enterprise Content Management	0	0	0	1	0	0	**1**
Business Intelligence	2.5	2	2	0	1	0	**5**
Metering Business Systems	0	2	10	12	0	0	**24**
Supply Chain	1	0	0	1	0	0	**1**
Customer Service & Billing	2	2	1	0	1	0	**4**
Network Management	1	0	0.5	1	0.5	0	**2**
Totals	**26**	**15**	**19.5**	**16**	**4.5**	**4**	**59**

NB: All costs in A$ millions.

6 Risk Analysis

Provided below is a high level view of the risks to Western Power if the expenditure in each category is not undertaken. The Corporate Risk Management Framework has been referenced to determine the risk rating.

Process Area	Possible Consequences	Inherent Risk	Residual Risk
Metering	Failure for effective meter management which could lead to government inquiries, significant damage to stakeholder confidence and adverse media attention.	Major, likely = **Extreme**	**Medium**
Streamlining Works Delivery	Failure to efficiently deliver on the works program leading to non-compliance of our regulatory contract and damage to key stakeholder confidence. Not undertaking this investment could lead to non efficient delivery of work, exposing the business to a moderate level of financial impact (considering the overall size of the works program).	Moderate, Possible = **High**	**Medium**
Corporate Asset Management	Failure to effectively execute our asset missions leading to non-compliance of our regulatory contract and damage to key stakeholder confidence. There is a significant cost benefit of not proceeding to the tune of $1.5m to 6m pa (refer ISAM BC #6242018) if this expenditure is not made.	Moderate, Possible = **High**	**Medium**
Network Management	System Failure leading to delays in responding to incidents/faults in time resulting in extended customer outages, minor fines, and one off public media attention.	Minor, Unlikely = **Medium**	**Low**
Business Intelligence	Failure to effectively report on delivery of the works program and state of our network assets resulting in damage to key stakeholder confidence, and adverse external audit with significant rework required.	Moderate, Unlikely = **Medium**	**Low**
Supply Chain	Delays in delivery of goods and services leading to non-compliance of our regulatory contract and damage to key stakeholder confidence. There is a minor financial impact from lost savings due to improved procure to pay processes across the business.	Moderate, Unlikely = **Medium**	**Low**
Enterprise Content Management	Not meeting our compliance obligations in relation to the state records act leading to moderate fines or notice of improvement.	Moderate, Unlikely = **Medium**	**Low**
Customer Service & Billing	There is a risk we will not be able to manage some customer related work processes efficiently (e.g. network access billing), leading to eroded confidence from some significant customers.	Moderate, Unlikely = **Medium**	**Low**