



Enterprise Architecture Practitioners Conference

March 11-13, 2007

Arabella Sheraton Grand Hotel, Cape Town, South Africa



Enterprise Architecture

Enabling Application

Portfolio Management

Presented by

Philip Venter

THE *Open* GROUP
Making standards work[®]

in association with:

real[©]RM



Agenda

1. Anglo Platinum Technology Background
2. Application Architecture History
3. EA Endeavour
4. Application Architecture Approach
5. Application Portfolio Management (APM)
6. APM leveraging on EA
7. Way Forward
8. Questions and Answers
9. Discussion



Technology Background

- 500 Commercial Servers
- 7500 Desktop and Laptops
- 400 process control servers
- Single instance for SAP HR and FI/LOG
- 5 Networks (Commercial/security/Process/Blast/Audio communication)
- Microsoft and SAP technologies
- Specialised applications
- Diverse Value Chain
- Computer literacy is diverse
- Central ICT Function
- Technology Standards by Architecture and Standards Board

Platinum Deposits in South Africa



Agenda

1. Anglo Platinum
2. Application Architecture History
3. EA Endeavour
4. Application Architecture Approach
5. Application Portfolio Management (APM)
6. APM leveraging on EA
7. Way Forward
8. Questions and Answers
9. Discussion



Application Architecture History

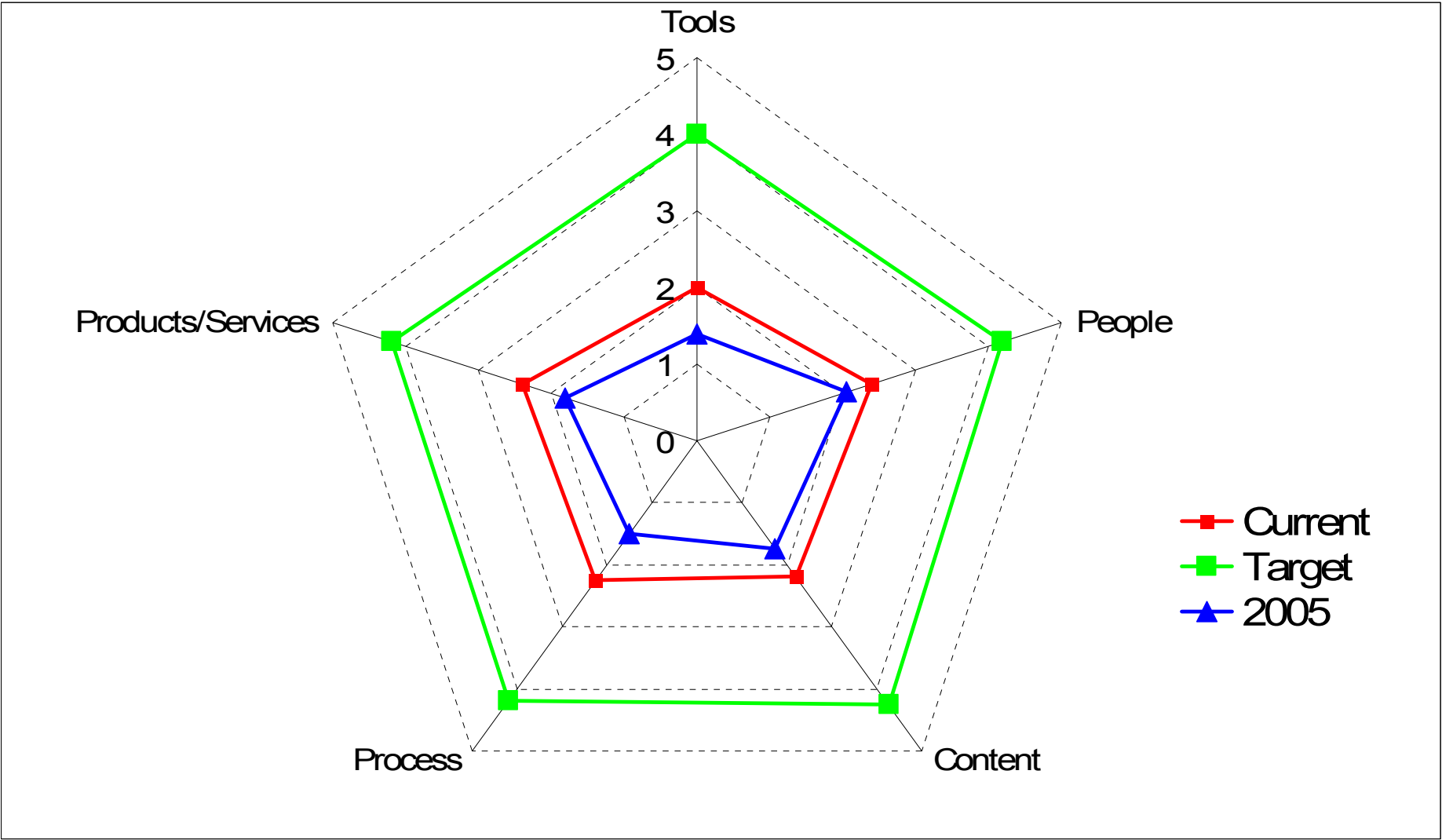
1. < 1996 Mainframe
2. > 1996 Client Server Application
3. 1997 First implementation of SAP – 7 Instances
4. 1998 Rewrite all mainframe Technical Systems
5. 1999 Engineering Design – Lotus
6. 1999 Server and Desktop management: In-house
7. 2005 SAP Consolidation
8. Introduced Server and Client Monitoring – COTS
9. 2005 Enterprise Architecture - ARIS
10. 2006 Interfacing of EA, ERP, CMDB and related technologies
11. 2007 Project Unity

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7. Way Forward
8. Questions and Answers
9. Discussions



EA Maturity Assessment – February 2007

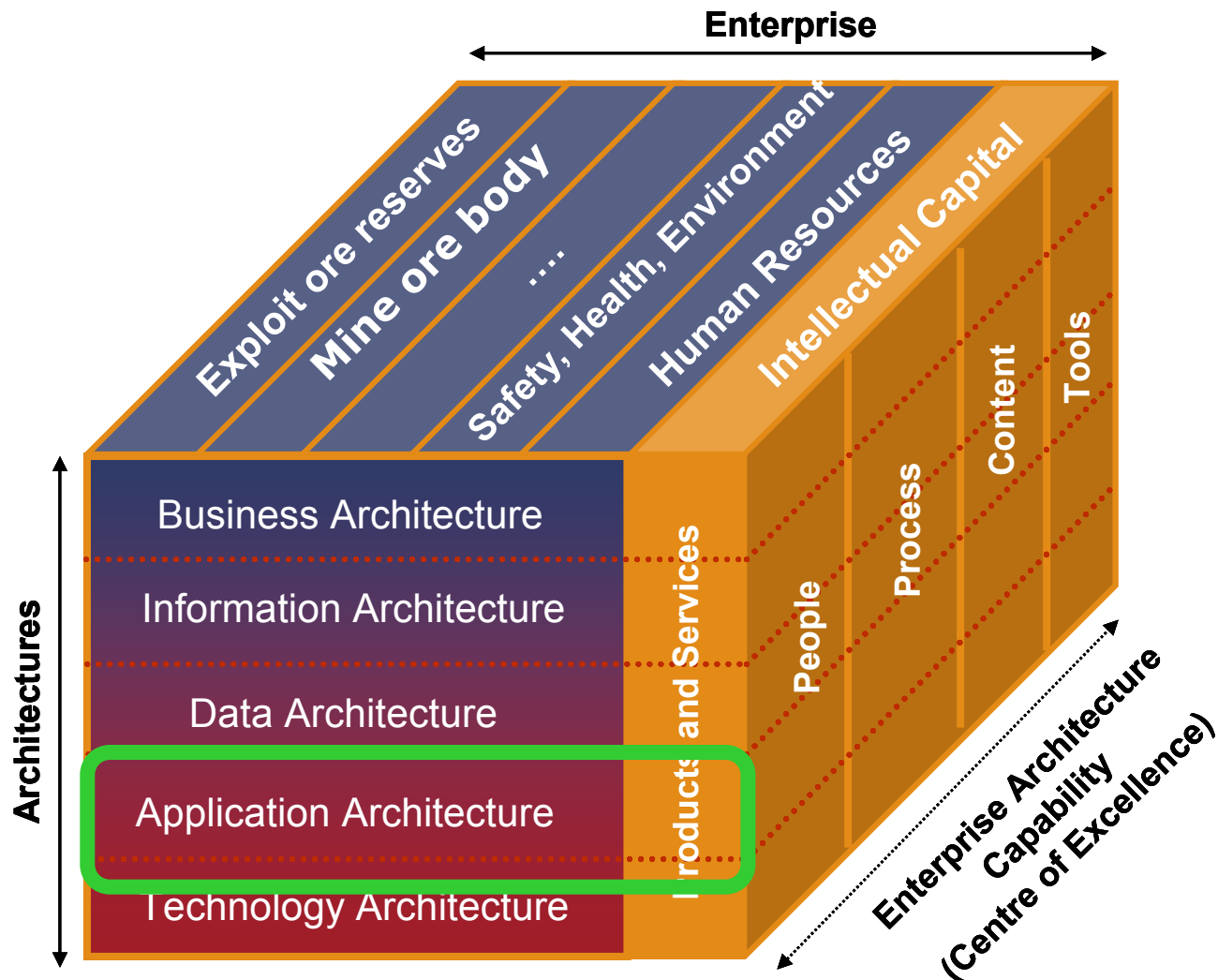


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Application Architecture Growth



March 2006 to March 2007

- Application Portfolio Management
- Application Portfolio

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Application Portfolio

1. Application Structure

2. Application attributes and classification

- ▶ Functional View
- ▶ Application Type view
 - Business Intelligence, Commercial off the shelf, Developed, Infrastructure
- ▶ Technical view

3. Application Business Process attributes

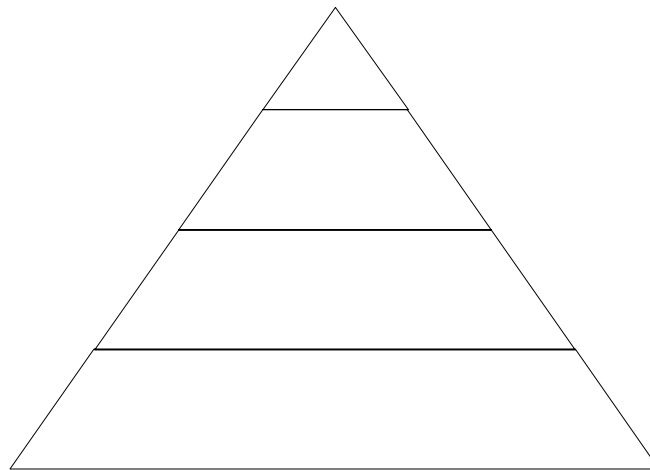
- ▶ Utilisation
- ▶ Support
- ▶ Adoption
- ▶ Time

4. Application – Application

- ▶ Interfaces
- ▶ Dependencies
- ▶ Vertical Integration

What is an Application Level?

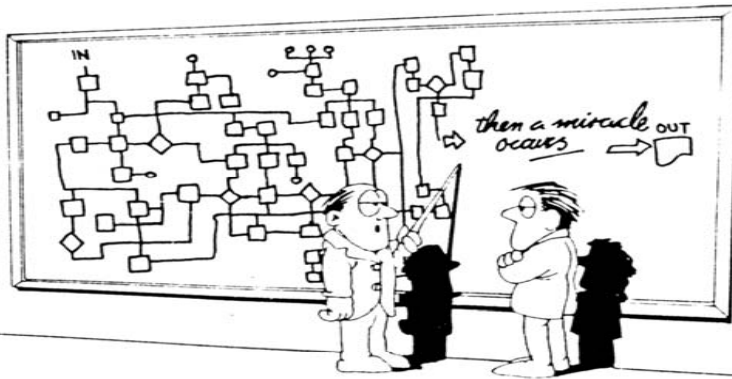
1. Application levelling provides a structured view on applications for a specified set of criteria. This could be defined by number of users, function points, cost, lines of code, cost per user, maintenance cost, functional decomposition or licensed entity.
2. Application levels are an organised hierarchically structure. The lower the application level the more detailed it would expose to a transaction, a service, an object, report, screen etc.



Purpose of Application Levelling

1. Application levelling is important to:

- ☒ Ensure consistency of detail at each level
- ☒ Provide a defined view of an application for planning, control and monitoring
- ☒ Clarifies the functional grouping of software suites
- ☒ Ensure that levels are not randomly added or omitted
- ☒ Where an application does not belong to a group no parent will be added
- ☒ If an application does not have multiple transactional or functions, no detail at lower levels exist



"Good work ... but I think we might need just a little more detail right here."

Levelling in Practice

- It seems natural to conceive a hierarchical structure and then segment each layer of the hierarchy into a number of separate models. But, most people can't visualize the structure they need sufficiently knowledge at the outset, to be able to do this.
- In practice, you have to proceed using a more trail and error approach.
- Create an initial structure to provide a rough framework to build on.
- Limit the time spend fiddling about with high-level structures. It is important, but could go on forever. At some stage put a stake in the ground, and then start with the detail modeling. Only a limited number of applications will have parent (to level 0) and child (to level 5) structures.
- Be clear on which level the detail modelling must be done, and then start doing some detail modeling for all the other associations in the application portfolio.
- Be flexible to change high-levels structures, once detailed modelling prompts you to make changes to top levels. (Bottom-up check)

Application Level - Definitions

	Level Name	Level Definition
Level 0	Suite	This contains a product or suite of products e.g. SAP, Lotus
Level 1	Suite Edition	This contains a subset of a suite of products e.g. SAP Business Suite
Level 2	Application Group	This contains a group of applications e.g. SAP ERP
Level 3	Application	This contains a deployable applications e.g. SAP ERP Financials, MS Word, Daycall, Websphere, Domino.doc, Autocad etc.
Level 4	Module	A module comprises of composite services and can't be deployed as stand alone application
Level 5	Function	OLTP, Objects, services, screens, stored procedures, reports, triggers are Transaction types

Note: Application is the only mandatory level for all software products

Application Classification

FLASHMAP AT-A-GLANCE IT ROADMAPS
 WWW.FLASHMAPSYSTEMS.COM | 800.381.7515

FLASHMAP SYSTEMS

Business Intelligence

Application

Commercial Off-the-Shelf

Development

Applications

IT Infrastructure

FLASHATLAS EA-Lite ITSCOUT

BUSINESS INTELLIGENCE

FlashAtlas® is a technology portfolio designed for today's complex business to analyze and communicate IT assets, such as servers, storage, printers, applications, configurations, and design patterns. High cost savings can be realized by uncovering and understanding systems or users, utilizing relevant products and offers a mapping functionality.

EA-Lite™ offers a solid, new mapping graphical design tool, and helps in every step of the IT lifecycle. The EA-Lite design tool can be used as the foundation for your current and future enterprise architecture initiatives.

APPLICATION

COMMERCIAL OFF-THE-SHELF

DEVELOPMENT

APPLICATIONS

IT INFRASTRUCTURE

IT INFRASTRUCTURE ROADMAP
 WWW.FLASHMAPSYSTEMS.COM | 800.381.7515

FLASHMAP SYSTEMS

MANAGEWARE

CLIENTWARE

MIDDLEWARE

SERVERWARE

PLATFORMS

MANAGEWARE

CLIENTWARE

MIDDLEWARE

SERVERWARE

PLATFORMS

Application Development Life-Cycle Model

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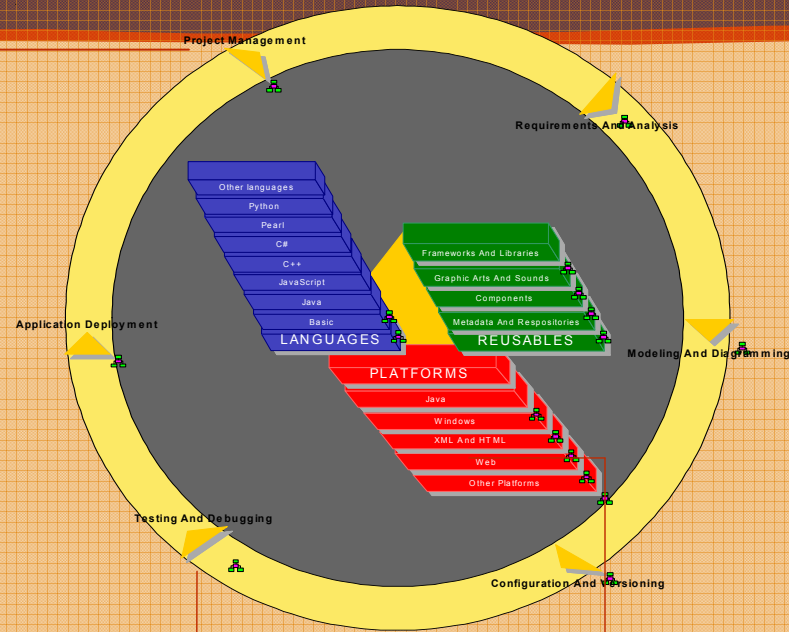
29 May 2006
Version 00.00



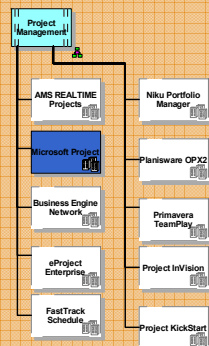
Application List View

Application Development Overview

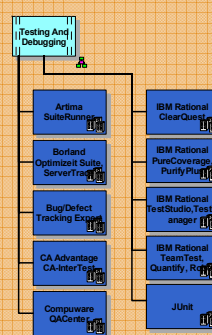
AMS REALTIME Projects	Artemis Project Management	Artima SuiteRunner	Borland Optimizait Suite, ServerTrack
Bug/Defect Tracking Express	Business Engine Network	CA Advantage CA-InterTest	Compuware QA Center
Elementool	Emprix e-TEST, Bean-test	Emprix OneSight, FarSight	eProject Enterprise
Excel QuickBugs	FastTrack Schedule	FogBUGZ	Goda Analyst Pro
HTML	IBM Rational ClearQuest	IBM Rational ProjectConsole	IBM Rational PureCoverage, PurifyPlus
IBM Rational TeamTest, Quantify, Rogn	IBM Rational TestStudio, TestManager	IMSI TurboProject	JUnit
Kintana Dashboard & Drive	Linux Test Project	McCabe Test, QA, Q2, TestComp	Mercury Interactive Astra SiteManager
Mercury Interactive LoadRunner, WinRunner	Mercury Interactive LoadTest, Astra LoadTest	Mercury Interactive QuickTest, Astra QuickTest	Mercury Interactive TestDirector, TestSuite
Mercury Interactive XRunner	Microsoft FrontPage	Microsoft Project	Niku Portfolio Manager
ParaSoft Jtest, C++Test, SOAPTest	ParaSoft WebKing, CodeWizard, Insure++	Planisware OPX2	Primavera TeamPlay
Project InVision	Project KickStart	QSM Software Lifecycle Management	RadView WebFT, WebLOA, D, WebRM
Rational Concepts Proj-Net	Sciforma PS Suite	Seapine Load Wizard, QA Wizard	Seapine Test Track Pro
Segue SilkTest, SilkRadar, SilkPerform	Select Process Director	Software Research TestWork	VisiComp RetroVue
Welcom Open Plan			



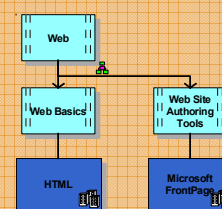
Project Management



Testing And Debugging



PLATFORMS: Web



Legend

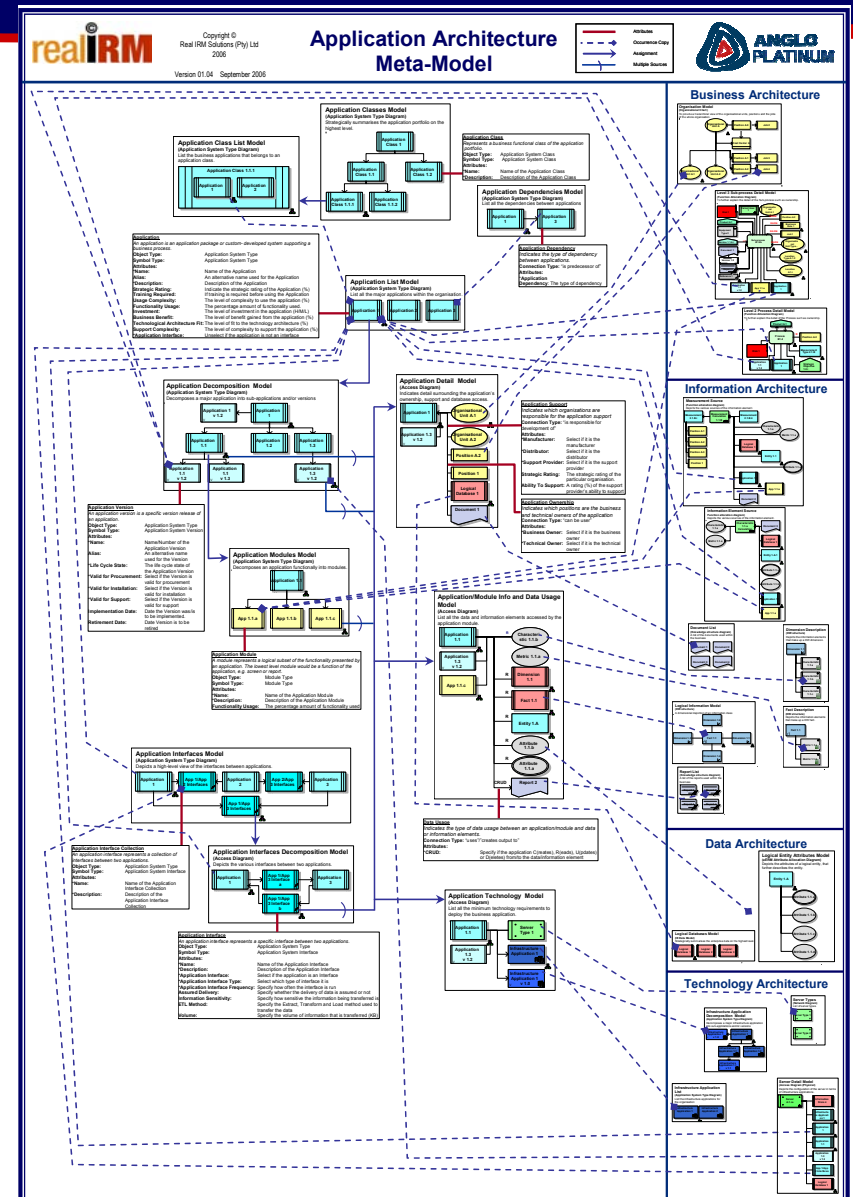
- Application in use
- Application not in use
- Detail model attached (Assignment)

Application Architecture

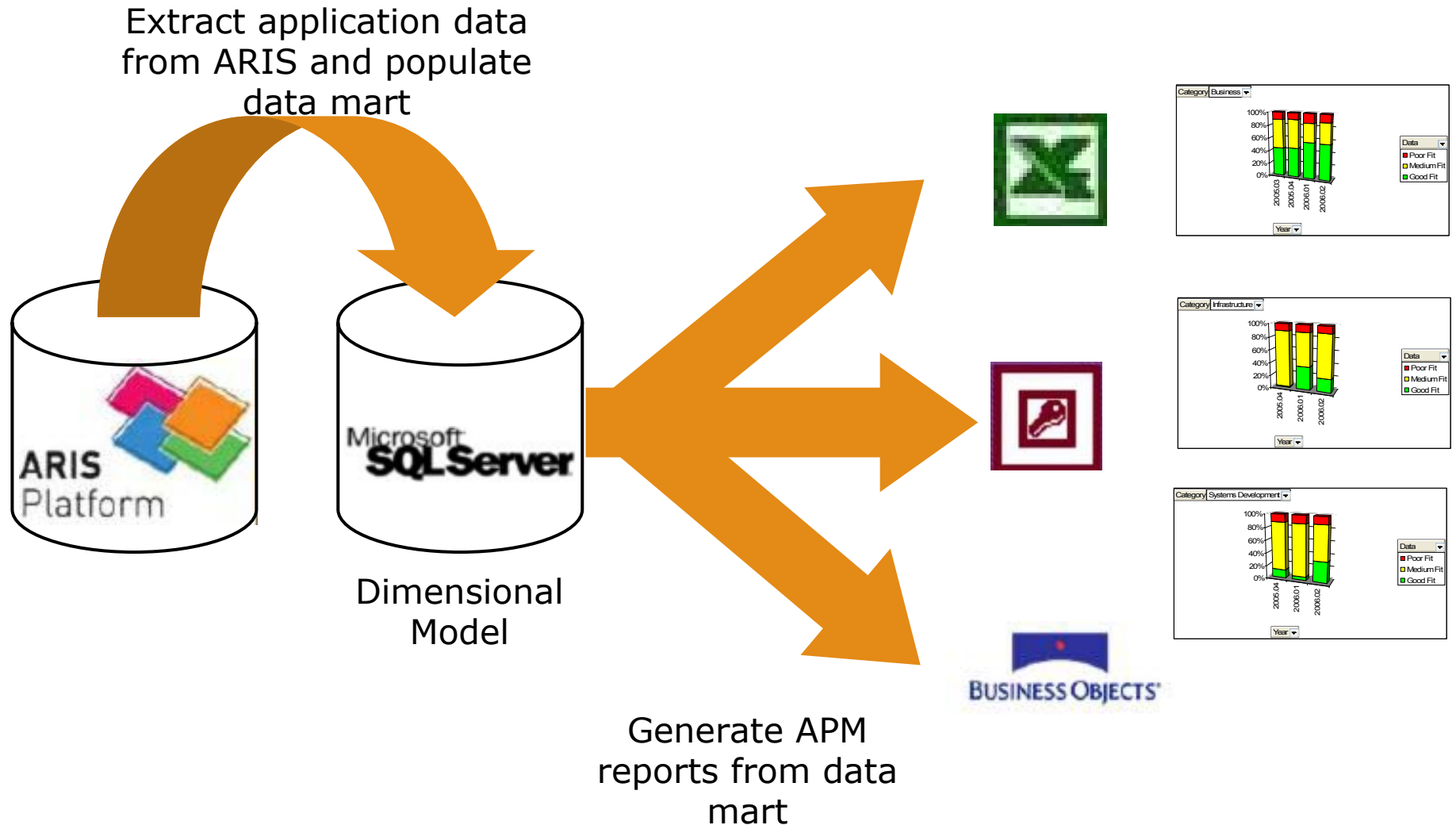
Extended meta-model to support Application Portfolio Management.

Extensions (examples):

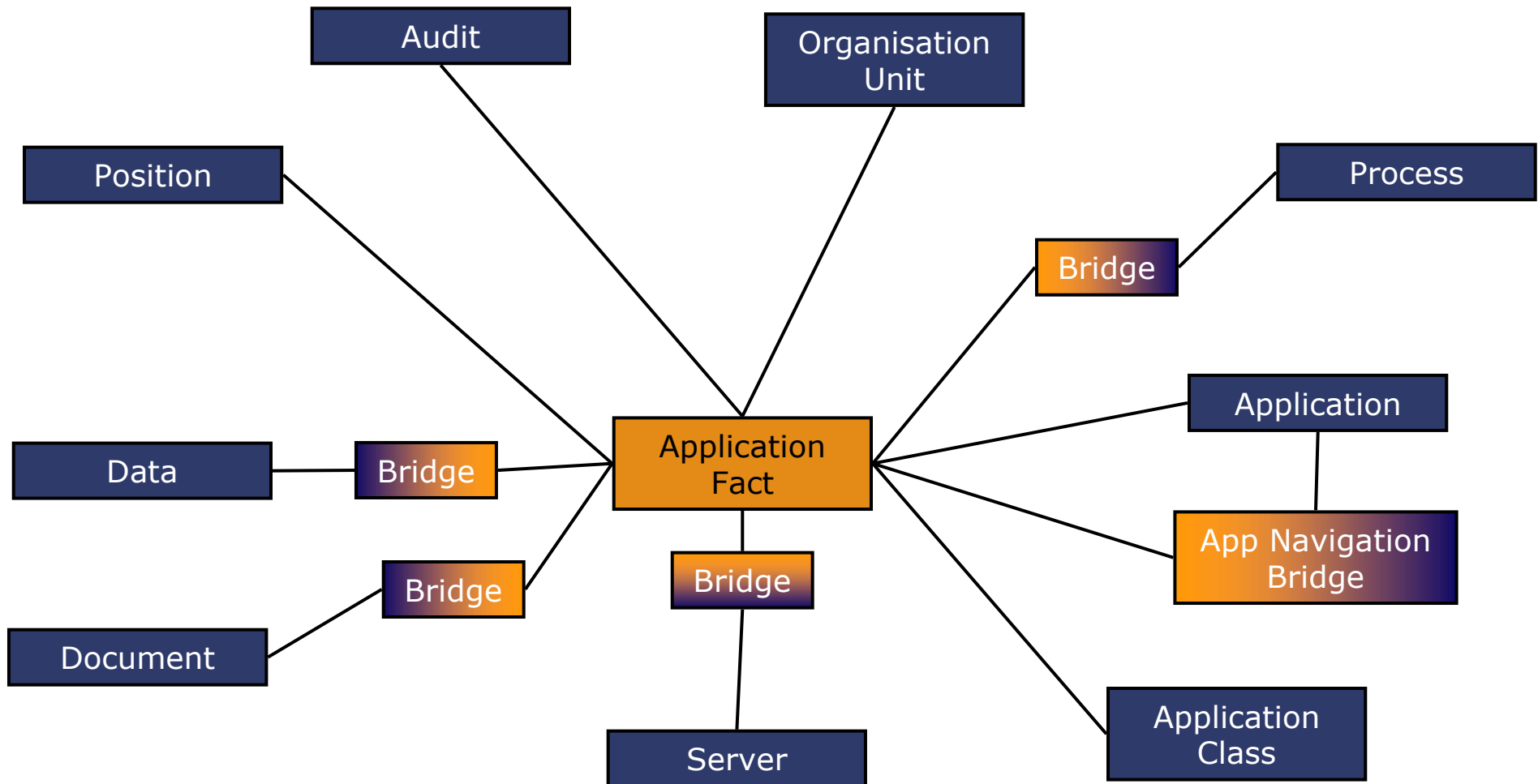
- Versions
- Standards
- Ownership
- Cost
- Licensing
- Vendor
- Distribution
- Integration



Application Portfolio Management



Application Star Schema



Application Fact Table Attributes

Attribute	Description	Source
Application Key (FK)	Foreign Key of the Application Dimension	Application Dimension
Application Class Key (FK)	Foreign Key for the Application Class Dimension	Application Class Dimension
Business Owner Key (FK)	Foreign Key for the Position Dimension	Position Dimension
Technical Owner Key (FK)	Foreign Key for the Position Dimension	Position Dimension
Data Create Group Key (FK)	Foreign Key for the Data Bridge	Data Bridge
Data Read Group Key (FK)	Foreign Key for the Data Bridge	Data Bridge
Data Update Group Key (FK)	Foreign Key for the Data Bridge	Data Bridge
Data Delete Group Key (FK)	Foreign Key for the Data Bridge	Data Bridge
Document Create Group Key (FK)	Foreign Key for the Document Bridge	Document Bridge
Document Read Group Key (FK)	Foreign Key for the Document Bridge	Document Bridge
Document Update Group Key (FK)	Foreign Key for the Document Bridge	Document Bridge
Document Delete Group Key (FK)	Foreign Key for the Document Bridge	Document Bridge
Process Group Key (FK)	Foreign Key for the Process Bridge	Process Bridge
Server Group Key (FK)	Foreign Key for the Server Bridge	Server Bridge
Audit Key (FK)	Foreign key of the Audit Dimension.	Audit Dimension
Manufacturer Key (FK)	Foreign key for Organisation Unit Dimension	Organisation Unit Dimension
Distributor Key (FK)	Foreign key for Organisation Unit Dimension	Organisation Unit Dimension
Supporter Key (FK)	Foreign key for Organisation Unit Dimension	Organisation Unit Dimension

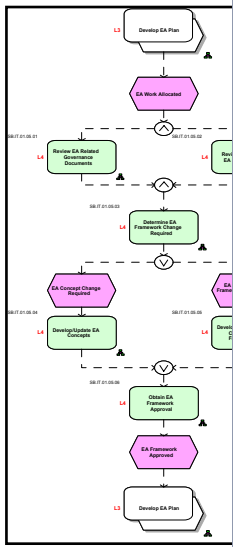
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L3 Develop EA Plan

Publish MS Word

Model Business Process Flow



GROUP PROCEDURE GROUP IT: CHIEF INFORMATION OFFICER DEVELOP BUSINESS PROCESS MODELS

VERSION: Version 01.00

LAST REVISION DATE: 26/03/2006

FIRST IMPLEMENTATION DATE: 03/04/2006

DOCUMENT REFERENCE NUMBER:

PROCESS REFERENCE NUMBER: BS.IT.02.01

	NAME	POSITION	SIGNATURE	DATE
AUTHOR:	Philip Venter	Architect: Applications & Technology		
REVIEWED BY:	Rynier Brandt	Risk Manager: Finance		
RECOMMENDED BY:	Steve Rasmussen	Sr. Manager: Strategy, Plan & Architecture		
APPROVED BY:	Johan Serfontein	Chief Information Officer		



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- Model
- Appro
- Traini

Business v/Edit Activity

Return to Sub-Pr

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ed to Activity Ob

Ann

Cont

Cont

Cost

Costi

Estab

Five Year Production Plan

Labour Definitions Document

Labour Plan Template

Labour Planning FROGS

Labour Planning Standards

Monitor And Control Employment Equity Per Occ

Monthly Shaft Report

My Document

Perform Short Term Labour Planning

Perform Short Term Labour Pre-Planning

Produce Annual Or Five Year Labour Plan

Report: On-Strength Report

Review Production Performance Against Monthly

Total Labour Business Plan Per Production Unit

Verify Annual Or Five Year Labour Plan

Add job

Add position

rocess

Add role

Add document

Set direction ...

Appendix description...

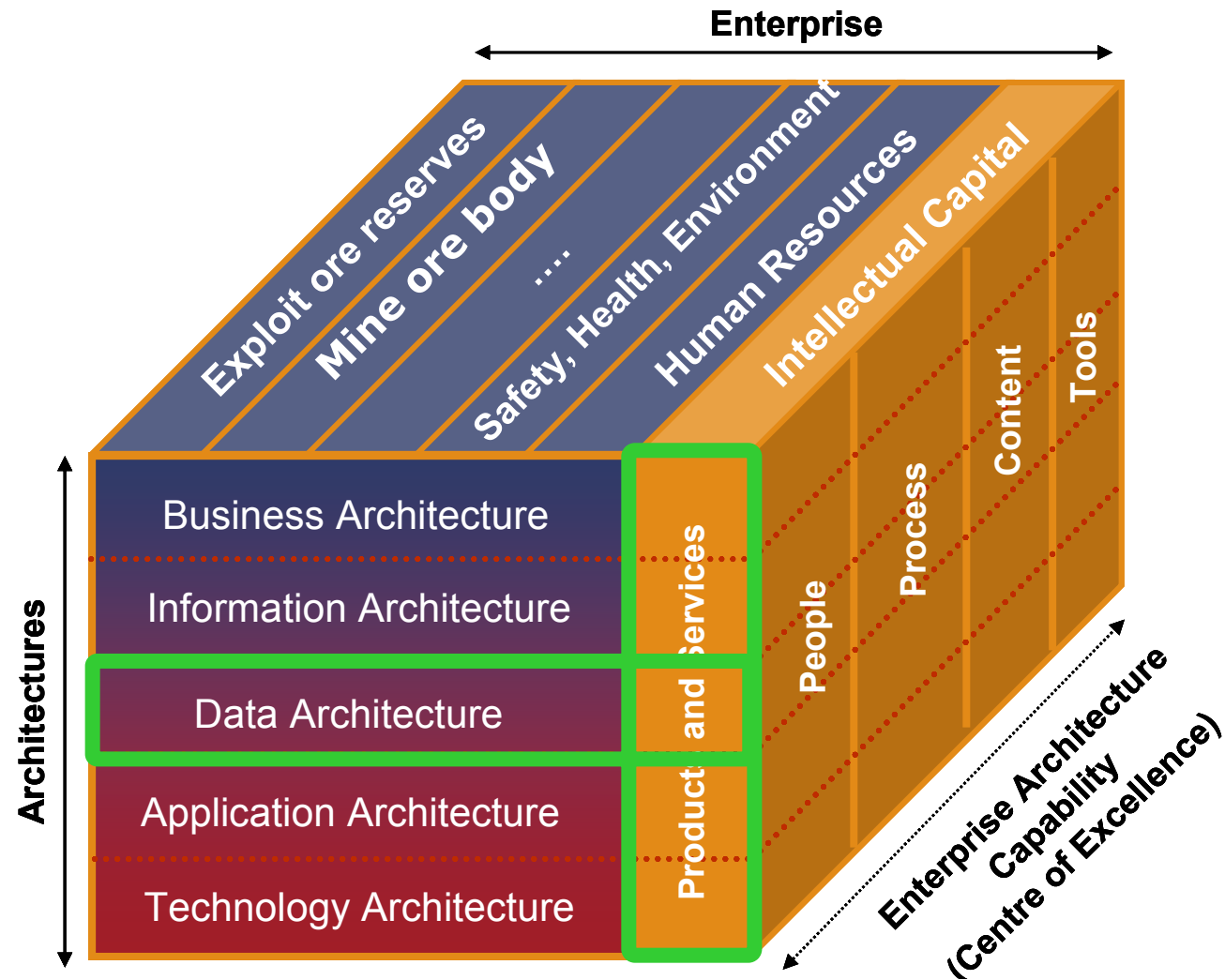
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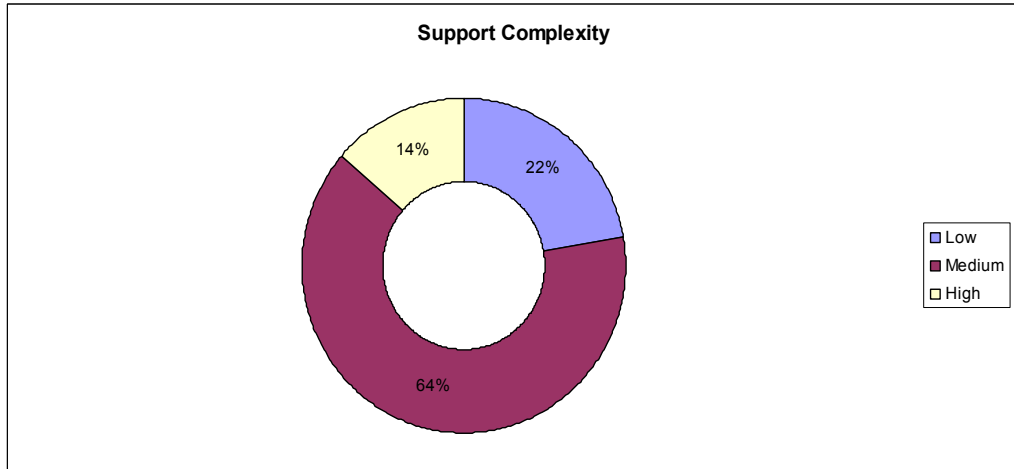
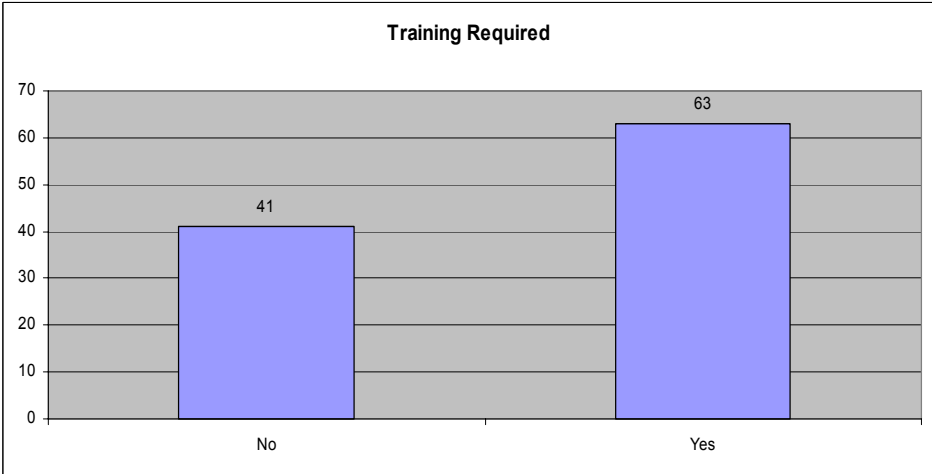
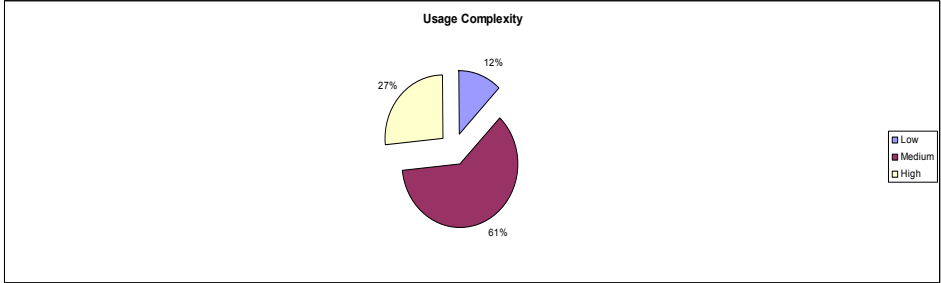
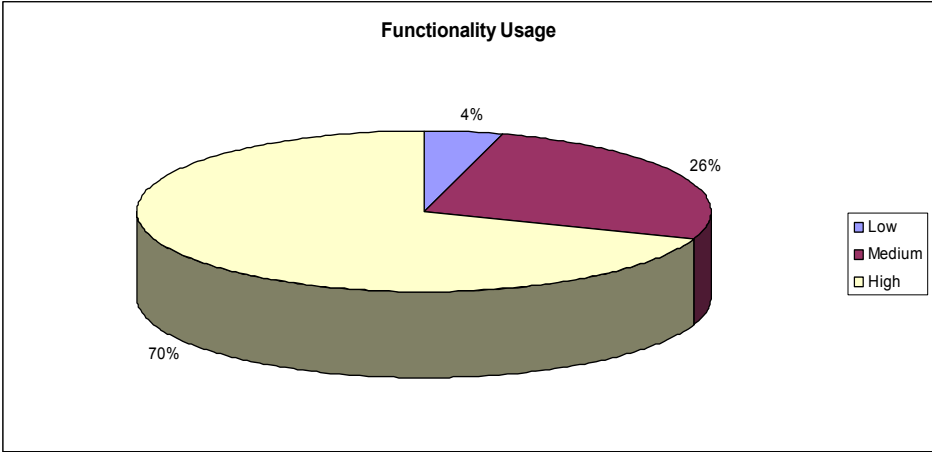


Application portfolio Management leveraging on EA

1. Business and technology ownership
2. Project management and SDLC
3. Application dependency
4. Application upgrade
5. Change Management
6. Network impact analysis



Example Graphs from Impact Analysis



Report List

Package Name	Software Classification	Product Status	Software Class	Type	Software Company	Software Version	Package Description	Software Owner	Business Owner	Manufacturer	Manufacturer's Website
.NET	Specialised: Technical	Current	Desktop	Infrastructure		2	Development	HENK STEYN	Group ICT		http://www.micro
@Risk	Specialised: Info Manage	Approved	Desktop	Business Application		X	Simulation plug in for Johan van Tonder		Group ICT		
AccFin	Specialised: Commercial	Current	Desktop	Business Application		2004	Secretarial Assistant	SHARON BOTHA	Legal	Accfin Software	http://www.accfir
Active Directory	Specialised: Infrastructure	Current	Server	Infrastructure	Microsoft	1.6	Manages access and	HENK STEYN	Group ICT	Microsoft	http://www.micro
Acts On-line	Specialised: Info Manage	Archived	Server	Business Applicatio	N/A	2004	ACTS CD Intranet Di	JOHANN MULLER	Group ICT	Guarantee Trust Hy	http://www.acts.c
Adobe Acrobat R Standard		Current	Desktop	Infrastructure	Adobe	7.5	Reads PDF files	HENK STEYN	Group ICT	Adobe	http://www.adobe
Adobe Acrobat S Standard optional		Current	Desktop	Infrastructure	Adobe	6	Adobe Acrobat 6 Sta	HENK STEYN	Group ICT	Adobe	http://www.adobe
Adobe Acrobat W Standard Optional		Unauthorised	Desktop	Infrastructure	Adobe	7	Writes PDF files	HENK STEYN	Group ICT	Adobe	http://www.adobe
Adobe Pagemaker	Specialised: Technical	Unauthorised	Desktop	Infrastructure	Adobe	X	Desktop publishing tr	HENK STEYN	Group ICT	Adobe	http://www.adobe
Adobe Photoshop	Specialised: Technical	Unauthorised	Desktop	Infrastructure	Adobe	X	Editing and managen	HENK STEYN	Group ICT	Adobe	http://www.adobe
ALCAR	Specialised: Info Manage	Current	Server	Business Applicatio	Hyperian	X	Strategic Planning In	SHARON BOTHA	Planning	Hyperian	http://www.hyper
AMC	Specialised: Commercial	Current	Server	Business Applicatio	Internal	X	Anglo Materials catal	SHARON BOTHA	Supply Chain	AP	Local
ARCINFO	Specialised: Info Manage	Current	Server	Business Applicatio	ARC	X	ArcView provides dat	GIEL MARAIS	Mining	ARC	www.esri.com/sc
ARCVIEW	Specialised: Info Manage	Current	Server	Business Applicatio	ARC	X	ArcView provides dat	GIEL MARAIS	Mining	ARC	www.esri.com/sc
ARENA	Specialised: Engineering	Current	Server	Business Applicatio	ARENA	X	The Arena Basic Edit	CHRIS LUMLEY	Projects	ARENA	
ARIS	Specialised: Infrastructure	Current	Server	Infrastructure	IDS Scheer	7	Enterprise Architectu	PHILIP VENTER	Group ICT	IDS Scheer	http://www.ids-sc
AuditWizard	Specialised: Infrastructure	Current	Server	Infrastructure	Layton	6	Infrastructure monitor	JOHANN MULLER	Group ICT	Layton Technologies	
Authorware	Specialised: General	Current	Desktop	Infrastructure	Authorware	7	Create interactive trai	JOHANN MULLER	Group ICT	Adobe	http://www.adobe
Autocad	Specialised: Engineering	Research	Server	Infrastructure	Autoplant	7	It's a component for :	CHRIS LUMLEY	Projects	Autodesk	http://usa.autode
Autoplant	Specialised: Engineering	Current	Server	Business Applicatio	Autoplant	X	It's a component for :	CHRIS LUMLEY	Projects	Autodesk	http://usa.autode
AVS	Specialised: Commercial	Current	Server	Business Applicatio	Internal	X	Anglo Vendor Manag	SHARON BOTHA	Supply Chain	AP	Local
AZON-CX/BX	Specialised: Engineering	Current	Server	Process Control	N/A	X	SCADA process con	DESIREE NAUDE	Process	SCADA	http://usa.autode
Backup Exec	Specialised: Infrastructure	Current	Network	Infrastructure		9.1	Backup Exec	HENK STEYN	Group ICT	Veritas	http://www.verita:
Barlow World	Specialised: Commercial	Current	server	Business Applicatio	Barlow	X	Supply chain applica	SHARON BOTHA	Supply Chain	Barlows	
Bentley GIS	Specialised: Technical	Current	Desktop	Business Applicatio	Bentley	8	Geographic Informati	GIEL MARAIS	Planning	Bentley Systems	http://www.bentle
Besol/Minap_97	Specialised: Technical	Current	Desktop	Business Applicatio	Besol	3.5	Besol/Minap_97 Win	GIEL MARAIS	Planning	CSIR Miningtek	http://www.simra
Bindview	Specialised: Infrastructure	Archived	Desktop	Business Applicatio	Bindview	X	Profile Management	MICHAEL PAYNE	Group ICT	E&Y	http://www.bindvi
Bloomberg	Specialised: Info Manage	Current	Desktop	Business Intelligenc	Bloomberg	3	Share Tradebook	HENK STEYN	Finance	Bloomberg	http://www.bloorn
BO Business Qu	Specialised: Info Manage	Current	Desktop	Business Intelligenc	Business Obje	6.5	B/Objects Business	JOHANN MULLER	Group ICT	Business Objects	http://www.busin
BO Designer	Specialised: Info Manage	Current	Desktop	Business Intelligenc	Business Obje	6.5	B/Objects BO Desigr	JOHANN MULLER	Group ICT	Business Objects	http://www.busin
BO Full User	Specialised: Info Manage	Current	Desktop	Business Intelligenc	Business Obje	6.5	B/Objects BO Full U	JOHANN MULLER	Group ICT	Business Objects	http://www.busin

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Way Forward




1. Decomposition of all significant applications
2. Mature Application Business and technical Ownership
3. IT application – scorecard
4. SOA in ARIS
5. Anglo American Global Infrastructure (Currently)
6. Anglo American Application Consolidation
7. Potential common services in Shared Services (Globally)



SAP and Remedy functional comparison

Customer Service

Customer Service & Support	Complaint Management	Help Desk
<ul style="list-style-type: none"> ● Account Identification & Maintenance (S14) ● Registered Product Identification (S14) ● Interaction History (S14) ● Scratch Pad Notes (S14) ● Service Order & Request Management (S14) ● Multi-level Categorization (S14) ● Content Management Integration (S14) ● Spare Parts and Services (S14, S59) ● Appointment Scheduling (S14) ● In-House Repair Request (S14) ● Service Quotations (S14) ● Contract & Entitlement Management (S14) ● Service Level Management (S14) ● Escalation Management (S14) ● Warranty Management (S14) ● Installed Base Management (S14) ● Service Product Proposal (S14) ● Customer Service & Support Analysis (S14, B12) 	<ul style="list-style-type: none"> ● Case Management for Customer Service (S14) ● Complaints Processing (S14) ● Credit Memo Integration (S14) ● Returns Processing (S14) ● Return Material Authorizations (S14) ● Escalation and Follow-Up (S14) ● Complaints Analysis (S14, B12) 	<ul style="list-style-type: none"> ● IT Help Desk (S14) ● Customer Care (S14) ● Interaction Record (S14) ● Case Management for Customer Service (S14) ● Solution Database (S14) ● Solution Attachments (S14) ● Knowledge Search (S14) ● Information Security Profile (S14) ● Solution Search Statistics Report (S14) ● E-Mail and Chat Integration (S14) ● Auto Acknowledge (S14) ● Auto Response (S14) ● Interactive Auto Suggest of Solutions (S14) ● Employee Interaction Center (S14, S23) ● Help Desk Analysis (S14, B12)

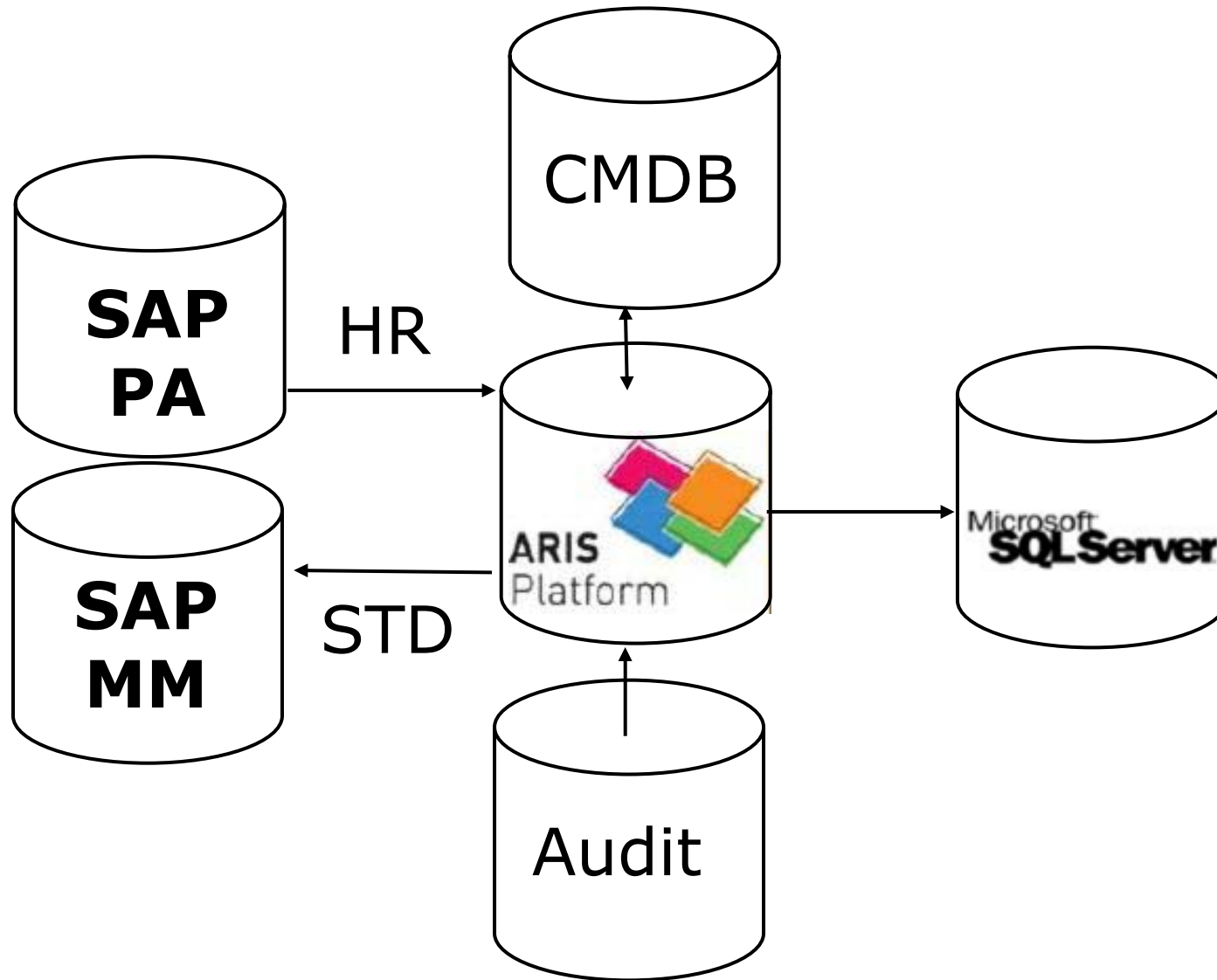
 SAP Product Available
 SAP Product Available with Future Releases
 Future Focus

 Partner Product Available
 Partner Product Available with Future Releases
 Collaborative Business Map Available

Sixx, Vxx, Bxx SAP Product & Service
 Pxx Partner Product
 For more information see: <http://www.sap.com>



APM Landscape

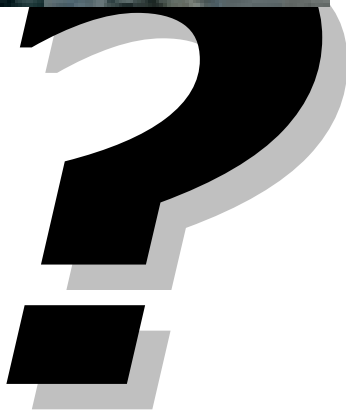


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Questions and Answers



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Discussion

