Enterprise Architecture Practitioners Conference

March 11-13, 2007
Arabella Sheraton Grand Hotel, Cape Town, South Africa

Enterprise Architecture at Anglo Platinum - One Year Later

Presented by:
Steve Rasmussen
CTO Anglo Platinum

Anglo Platinum - Financial Results 2006

Anglo Platinum, listed in Johannesburg, London and Brussels, is the world's leading producer of platinum and platinum group metals, accounting for about 38% of the world's newly mined production.

- Net sales revenue up 69% to R 39,4 billion
- Headline earnings up 183% to R 12,0 billion

- Platinum production up 15% to 2.8m ozs

"Our record financial performance was driven by strong demand, record metal prices and continued growth in production volumes."

"It is pleasing that in 2006 our board approved new capital expenditure to the value of R11 billion to extend the life of our existing production capacity, increase efficiency and support continued growth. In 2006 this growth created over 7 000 new jobs at Anglo Platinum operations."

Ralph Havenstein

CEO

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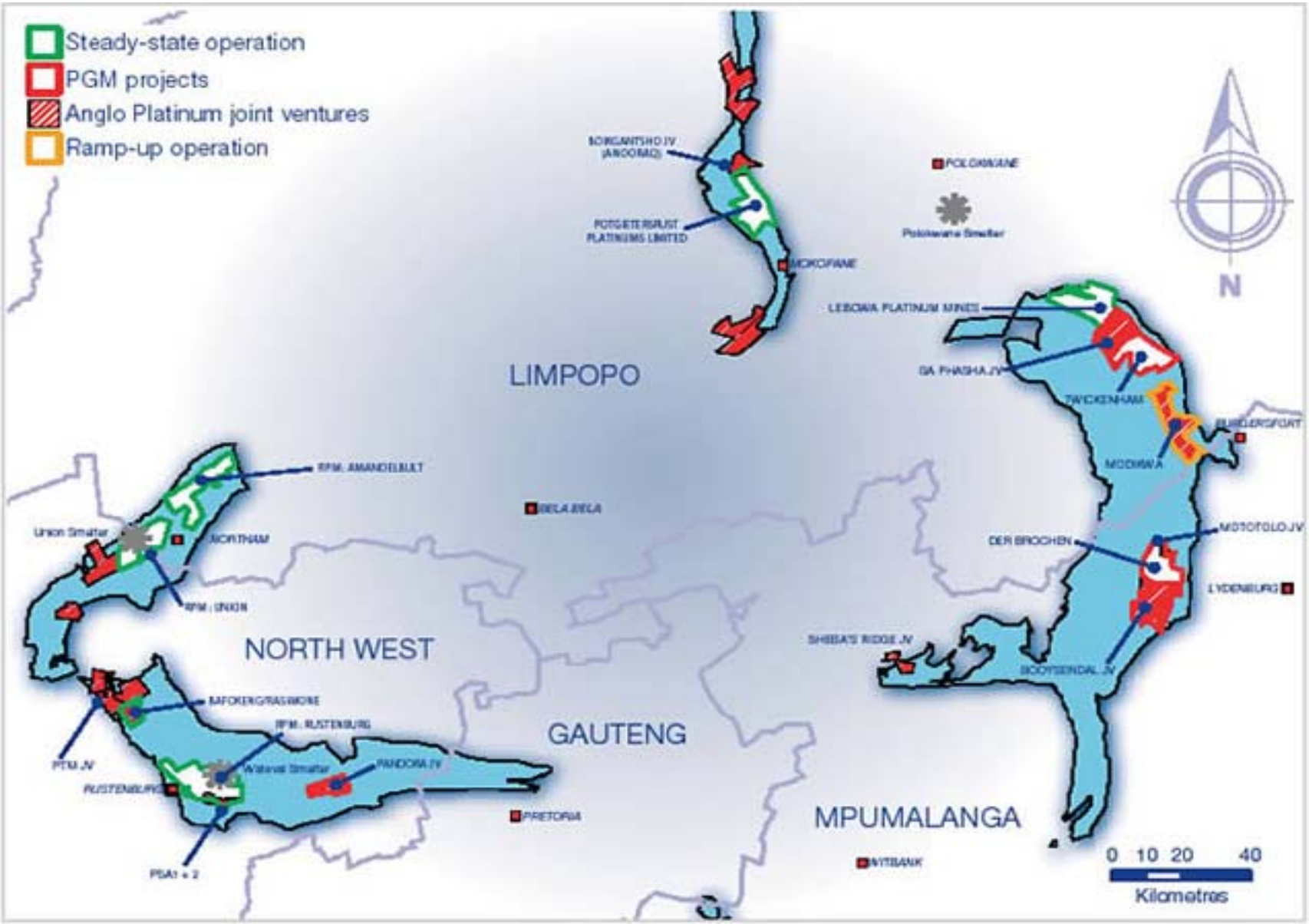
Anglo Platinum - Location



Agenda

1. **The Story so far**
   - Drivers for change
   - Architectural concepts
   - EA Practice Establishment

2. **Deliverables and Business Successes**
   - Maturity Model
   - Business Process Models
   - Information Models
   - Data Models
   - Application Models
   - Technology Models
   - Products & Services

3. **Governance**
   - Architecture Forum
   - Stage Gates

4. **Lessons learnt**
   - Business Buy-in
   - Training

5. **The Way Forward**
   - Governance
   - Dashboard

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Business Drivers for Change

1. Drive for accurate, timely, consistent information
   - "One source of the truth"
   - Requirement for meaningful performance measurement metrics

2. Business focus on certain critical processes
   - Safety, Health and Environment, Mining, Planning, etc.

3. Reduce Business and ICT complexity
   - Multiple business processes in place at different operational units
   - Various modelling methods, tools and standards across the enterprise
   - "Islands of IT" needed to be "reined in" and subject to governance

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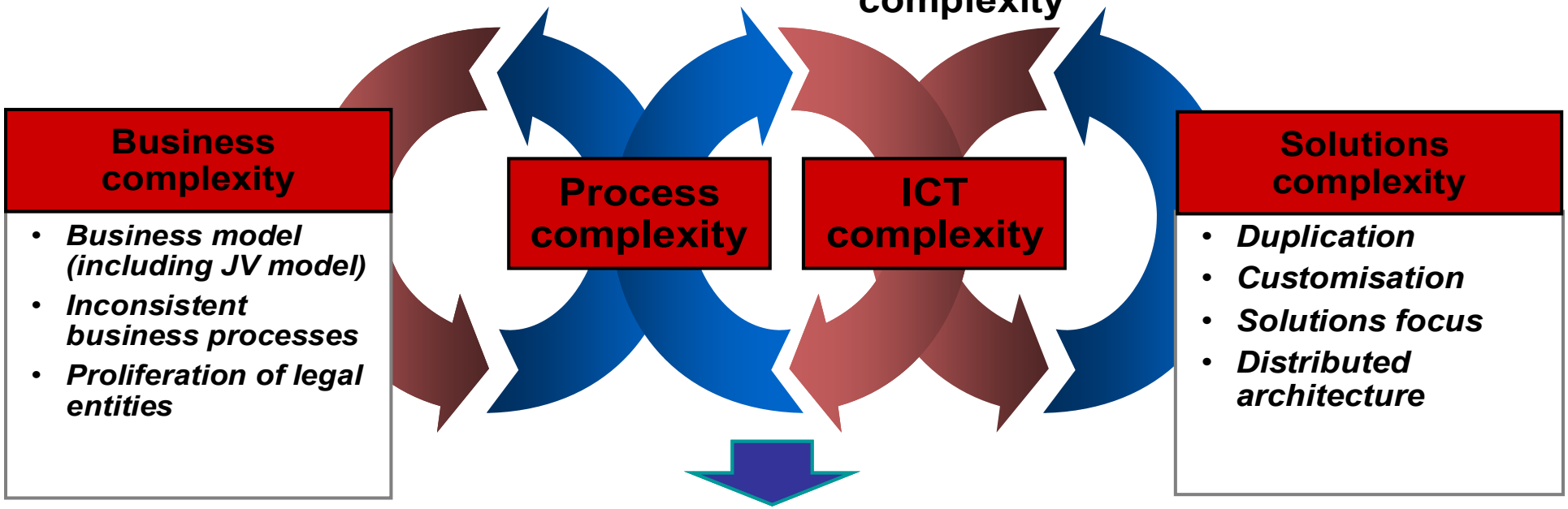
Reduce Business and ICT Complexity

A clearer and simplified business model will allow ICT to operate more effectively

Group ICT will work to actively reduce applications and manage technical infrastructure complexity



Major opportunity to reduce ICT total cost of ownership (TCO) in labour, maintenance, upgrades, licensing and integration

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Learning from Others

Difficult to justify purely on cost

You cannot cost justify architecture. Architecture is not an expense. Architecture does not displace any other costs. Architecture is an asset. You can save orders of magnitude more money and time, but you have to ***invest*** in Architecture to enable you to do something you otherwise are unable to do, namely: “Alignment,” “Integration,” “Change,” and “Mass Customisation.”

Architecture is an Information-Age idea.
“Cost Justification” was an Industrial Age idea.

John Zachman 2001

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Anglo Platinum View of Architecture

Taking into account increasing pressure brought about by demands for reduced Business and ICT complexity, improved governance and the need for close alignment between ICT and Business, Anglo Platinum recognised the need for ***a structured architecture based on sound business principles*.**

Anglo Platinum adopted Gartner's "good enough" architecture approach which provides for the ***delivery of essential business value in the short term*** and the ***flexibility to change with business requirements*.**

This approach contrasts with the bullet proof, "perfect" architecture that is inappropriate to the needs of a relatively straightforward business such as mining and is rarely achieved outside of, for example, the aerospace or financial sectors.

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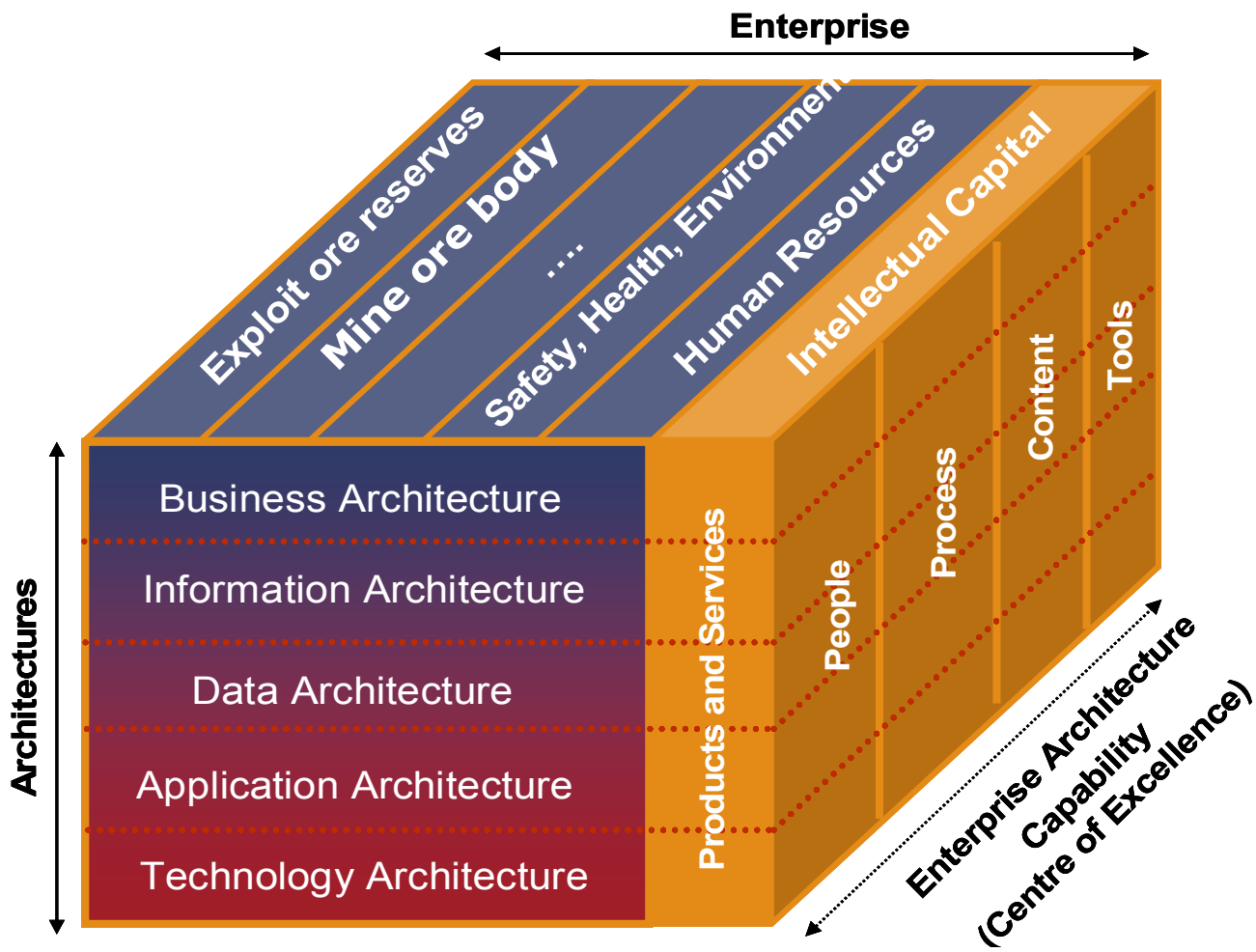
Architecture Model

The focus of the Architecture teams, working closely with business, has been on the Business *organisation, processes, policies, people, etc.* and Information *sources, flow and destination of information* layers of the architecture as depicted in the EA "cube".



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Develop an EA Capability

Develop an in-house architectural capability

- Transfer skills from consultants who assisted in the project
- Identify internal "champions" for the cause but leave them "in situ"

- Outsourced non-core ICT activities, following the "Gartner Lite" model
- Following from this, it has retained the strategically important roles of inter alia, IT Strategy, Planning and Architecture

Outsource non-core EA services

➢ ***The non-core EA activities associated with data capture, quality control and maintaining the integrity of the architectural framework and meta data have been outsourced***

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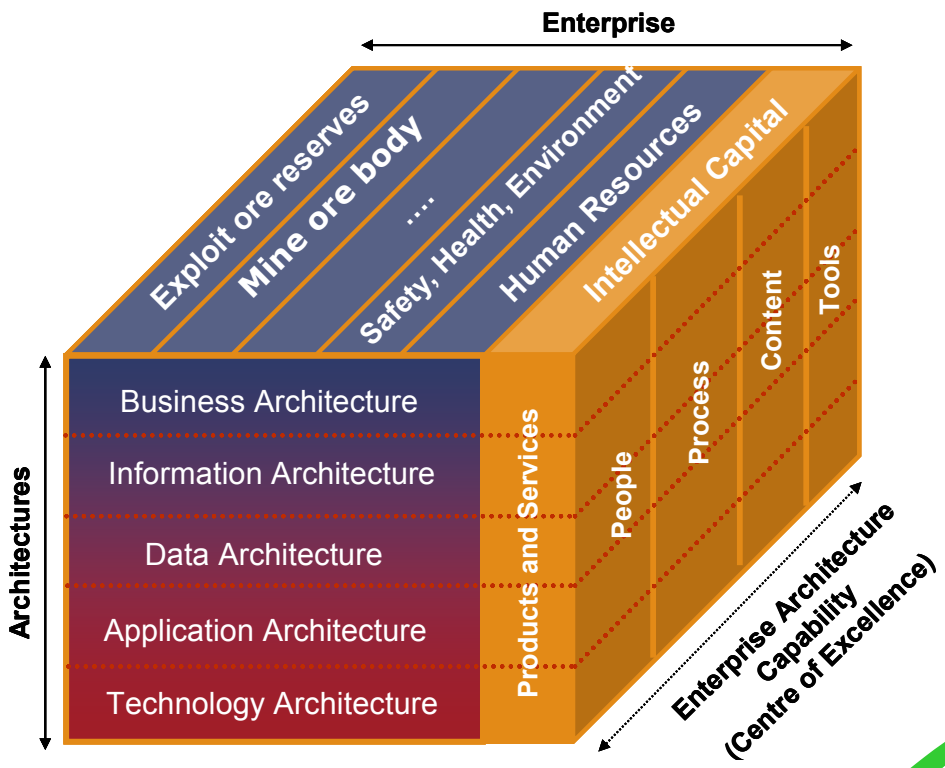
Enterprise Architecture Establishment



1. EA Principles documented
2. EA Framework developed
   - EA Products and Services
   - EA Customers
   - EA Models
   - EA Meta-model
3. EA Processes defined
4. EA Organisation enabled
5. Implemented EA Environment
   - Product selection – ARIS
   - Build repository
   - Utilities to extend functionality

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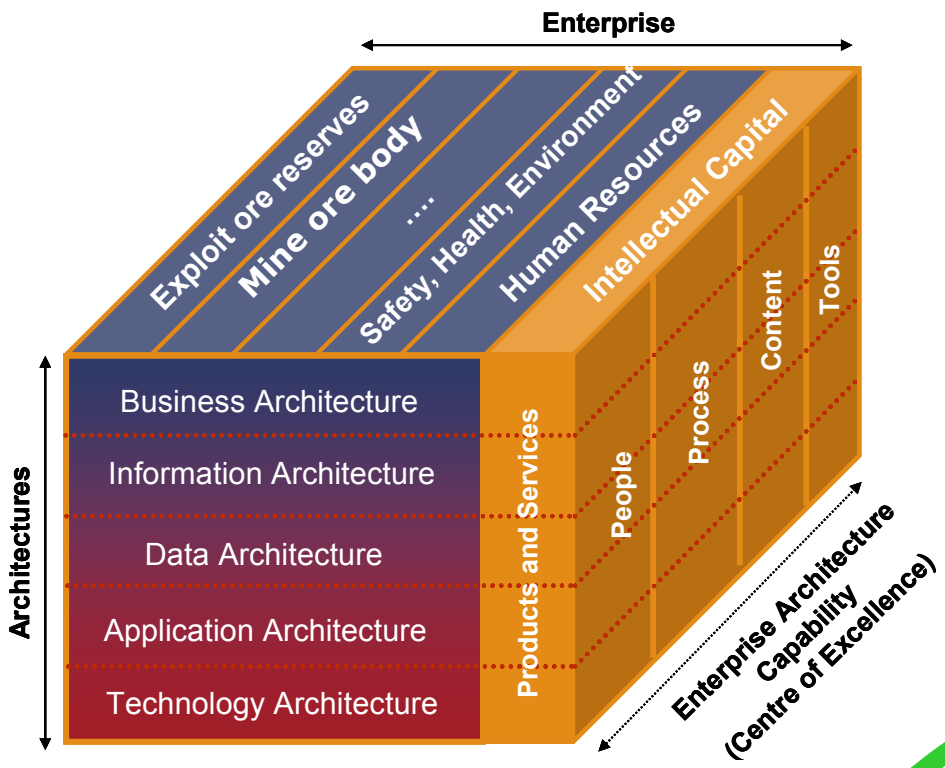
Focus on Business Achievements



1. Defined High Level Business Process Model
   - Provide context for detailed process modelling
2. Developed detailed process models
   - Safety
   - Labour Management
   - …
3. Generated Operational Procedures
   - Generate MS Word documents according to the Anglo Platinum procedure template
4. Built process modelling competency
   - Training based on meta-model

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Develop a Target Architecture: Maturity Levels

Level	SEI CMM *	EA Capability Maturity
1	Initial	**Creating** EA Awareness
2	Repeatable	**Building** the EA management foundation
3	Defined	**Developing** the EA by applying a consistent process
4	Managed	**Completing** the EA
5	Optimised	**Leveraging** the EA to improve business benefit

*** SEI CMM:** ***Software Engineering Institute Capability Maturity Model***

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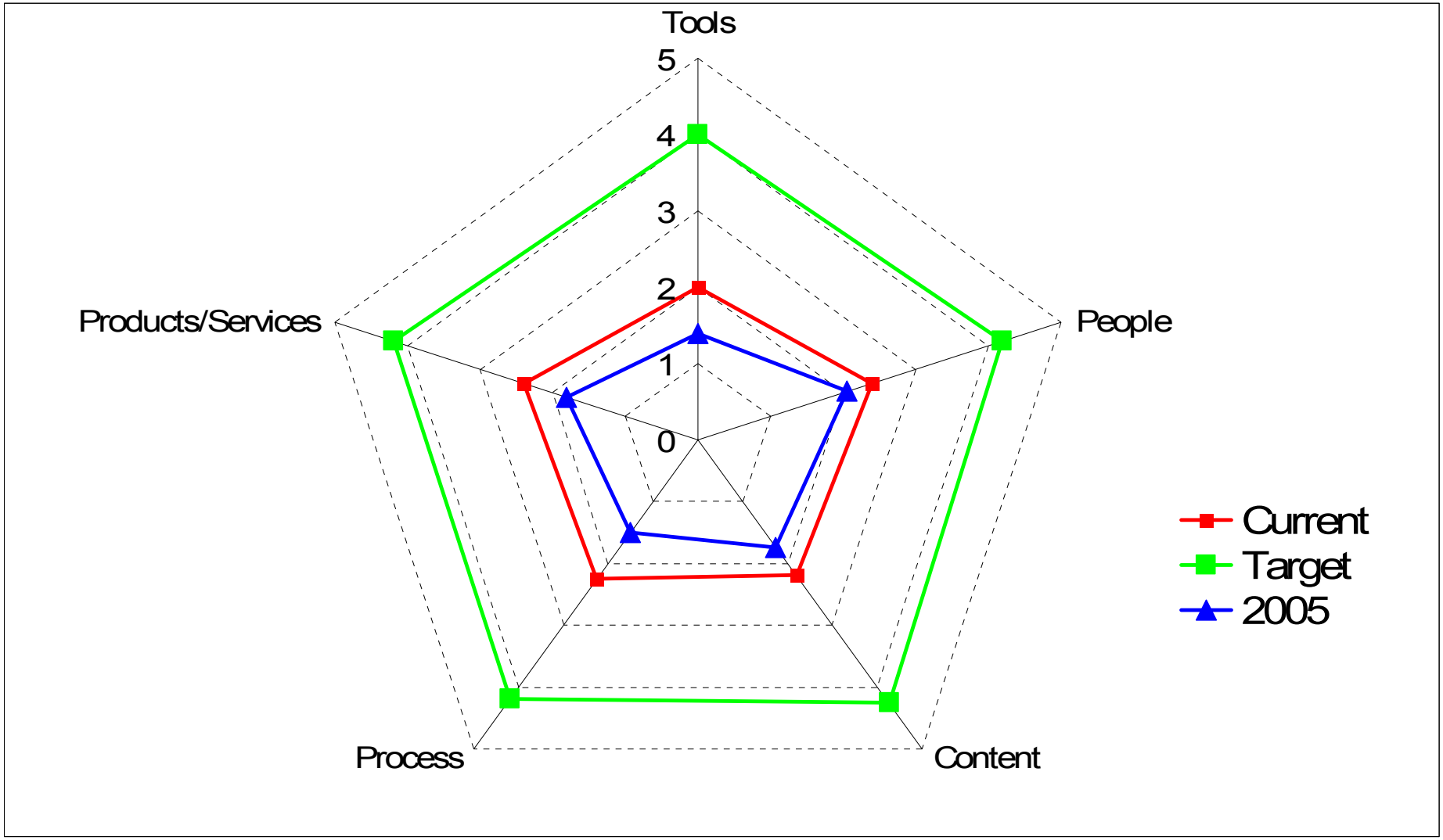
EA Maturity Assessment – February 2007



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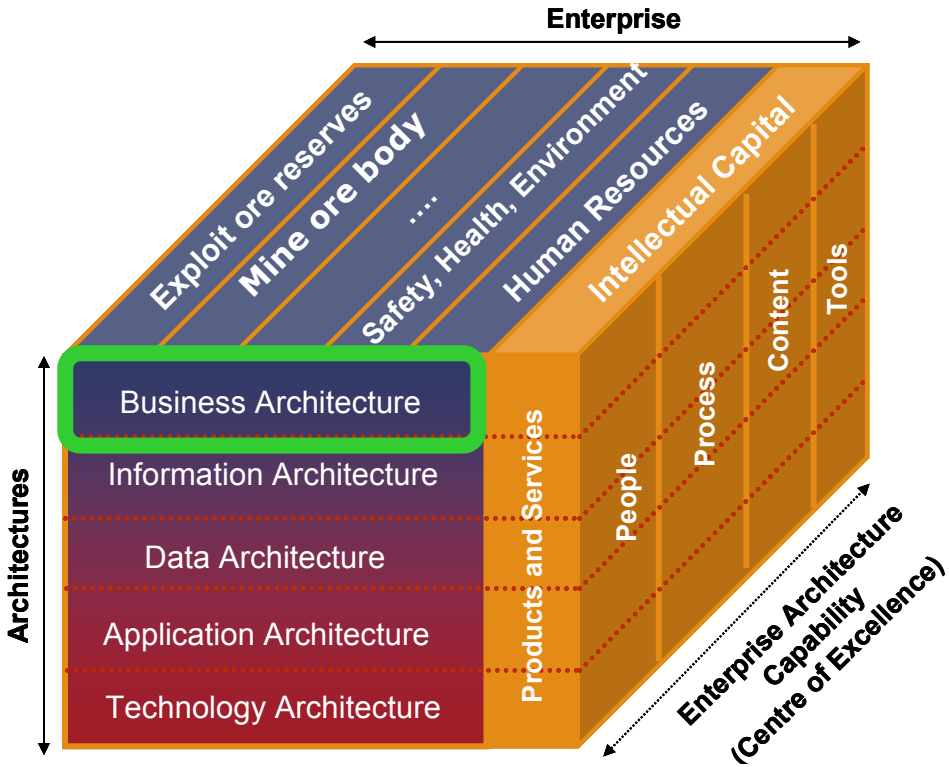
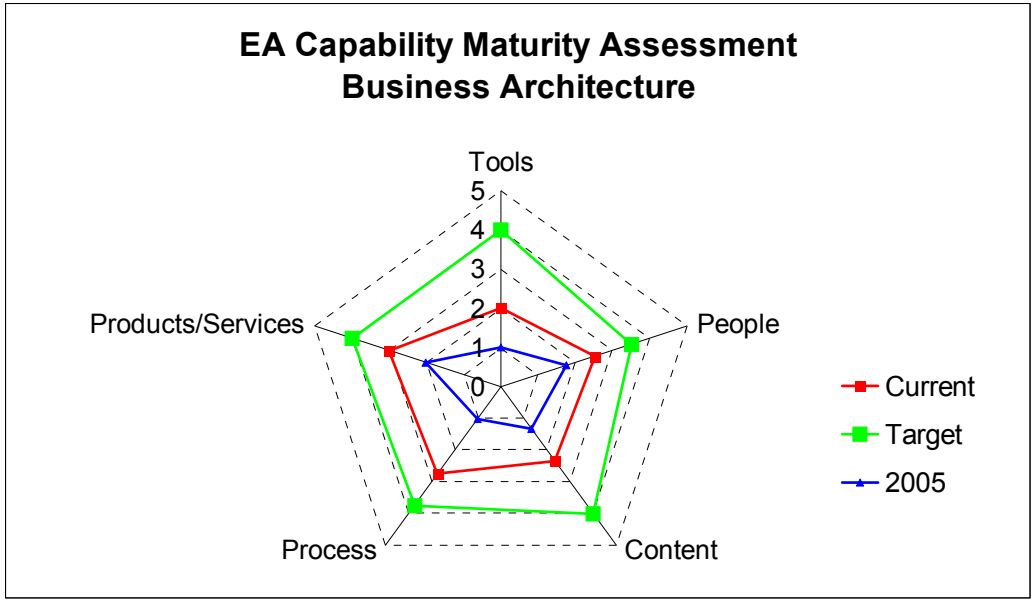
Business Architecture





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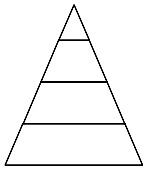
Process Levelling Guidelines

Purpose

What is a Process Level?

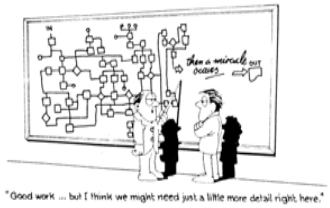
- A process level provides a view into a business process at a specified level of detail
- Process levels are organised hierarchically – the lower the process level the more detailed it would be



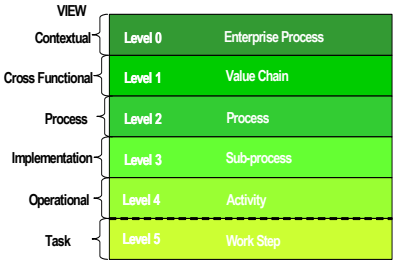
Purpose of Process Model Levelling

Process level identification and defining is important to

- ensure consistency of detail at each level
- structure models consistently across modelling projects
- ensure models used for analysis purposes are at the same level
- ensure that levels are not randomly added or omitted



Process Model Levels



If you have too many levels the clarity of the hierarchical approach may be lost in the complexity of layers and levels.

Process Model Level - Definitions

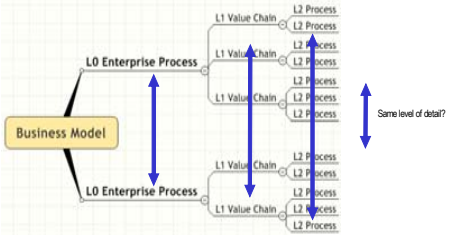
	Level Name	Level Definition
Focus	Level 0 Enterprise Process	To provide the context of the Anglo Platinum business model aligned to the strategic objectives.
Focus	Level 1 Value Chain	To provide a view of the cross-functional value chains of each of the enterprise processes. Each value chain component has a profound impact on achieving a strategic business objective.
Focus	Level 2 Process	To provide a business process view of the business that can be assigned to a process owner and that can be measured.
	Level 3 Sub-Process	To depict the implementation of the previous level to show how the processes are executed.
	Level 4 Activity	To provide an operational view of each sub-process with the role accountability for each activity, as well as any inputs or outputs.
	Level 5 Work Step	To provide a step-by-step guide to each activity as a work instruction or task

Guidelines

Level Detail Consistency

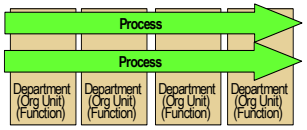
Process detail at the same level must be consistent.

After every level is built, do a levelling exercise to check if each object at a level is relatively equivalent to the others at the same level.



Process vs. Function

Document business processes that flow through horizontally and affect all vertical departments.



Refer to Business Architecture principle:

Principle ✓ Management ✓ Design ✓ Architecture

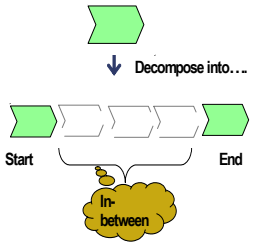
Model the business using a process approach, whilst retaining functional accountability for the activities.

Rationale

The business is still organised along functional lines, although the activities are modelled with a end-to-end process approach. This hybrid approach drives process optimisation and measurement, but maintains the benefits of functional management based on disciplines.

Process Boundaries

A true process has a clear start and end.



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realIRM

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Real IRM Solutions (Pty) Ltd
2006

Anglo Platinum Business Process Model

01 August 2006
Version 2.05

Group ICT Contact:
Philip Venter
(011)3736461

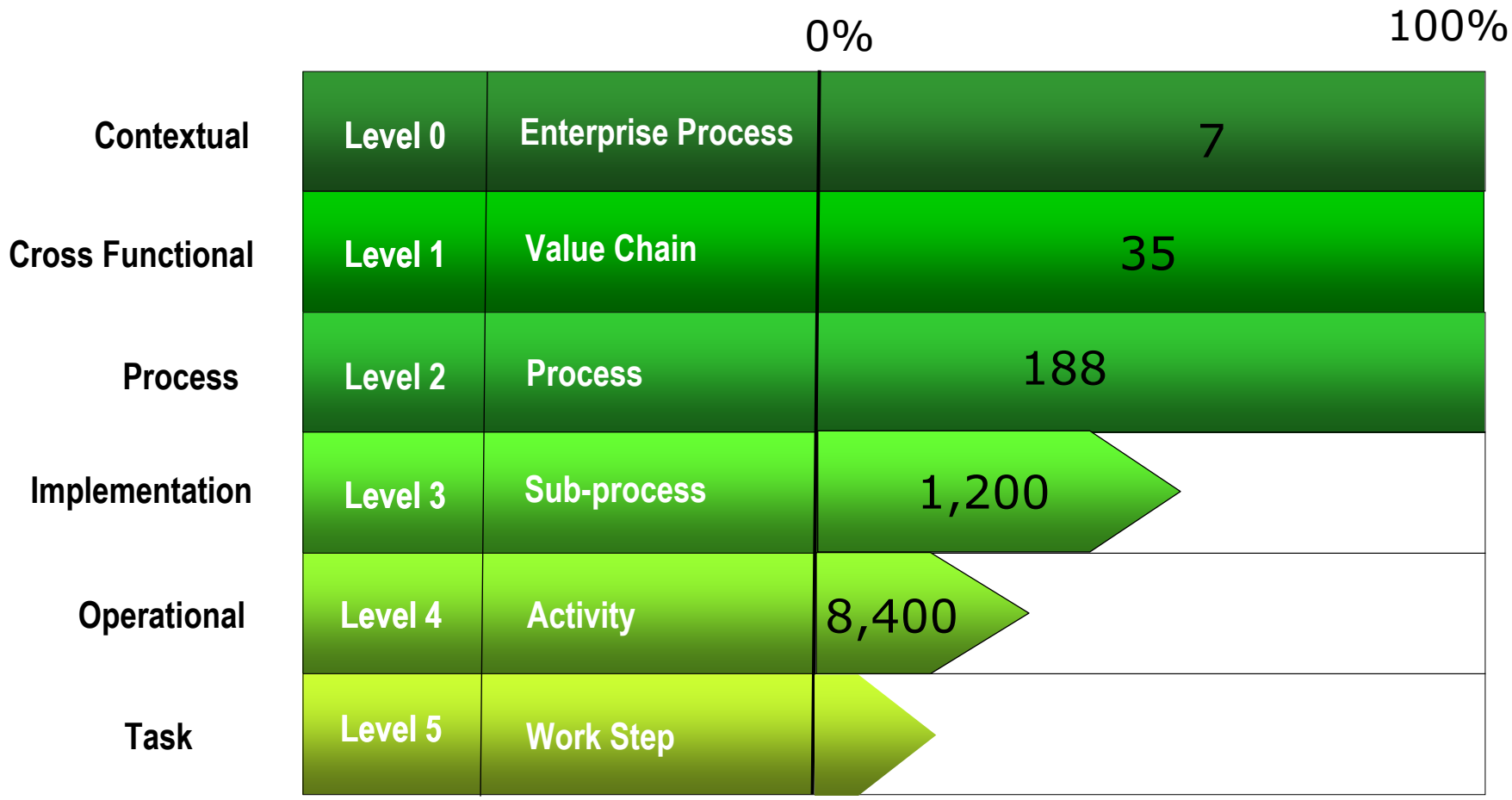
ANGLO PLATINUM

L0 Enterprise Processes	L1 Value Chain	L2 Process
Find Platinum Source (L0)	Locate Ore Body; Perform Economic Evaluation	Locate Ore Body; Perform Economic Evaluation
Create Capacity (L0)	Perform Detail Planning; Perform Detail Design; Establish Mine; Establish Processing Plant; Establish Infrastructure; Manage Capital Investments; Manage Project Portfolio	Perform Detail Planning; Perform Detail Design; Establish Mine; Establish Processing Plant; Establish Infrastructure; Manage Capital Investments; Manage Project Portfolio
Mine Ore Body (L0)	Manage Mine; Operate Mine; Close Mine; Support Mine Operations	Operate Mine; Support Mine Operations; Close Mine; Manage Mine
Produce Refined Product (L0)	Concentrate Ore; Smelt Concentrate; Convert Matte; Refine Product; Schedule And Plan Treatment And Refinement; Close Operation	Concentrate Ore; Smelt Concentrate; Convert Matte; Refine Product; Schedule and Plan Treatment and Refinement; Close Operation
Market and Sell Platinum (L0)	Grow and Maintain Market; Manage Dispatch and Delivery	Grow and Maintain Market; Manage Dispatch and Delivery
Manage the Business (L0)	Perform Strategic Planning; Manage Performance; Manage Corporate Governance; Manage Stakeholder Relations; Manage Transformation	Perform Strategic Planning; Manage Performance; Manage Stakeholder Relations; Manage Transformation; Manage Corporate Governance
Support the Business (L0)	Manage Metallurgy; Manage Information and Technology; Manage Physical Assets Lifecycle; Manage Human Resources; Manage Research and Development; Manage Finances; Co-ordinate SHE Risk Management; Manage Supply Chain; Manage Protection Services	Manage Metallurgy; Manage Information and Technology; Manage Physical Assets Lifecycle; Manage Human Resources; Manage R & D; Manage Finances; Co-ordinate SHE Risk Management; Manage Supply Chain; Manage Protection Services

Level 2 Legend

- L2 Processes Modelled
- L3 Processes Modelled
- L4 Activity Flow (eEPC) Modelled
- Model L4 Activity Detail (FAD) Modelled
- L5 Task Flow (eEPC) Modelled
- L5 Task Detail (FAD) Modelled
- Not yet planned
- Models completed to required level
- Planned
- Detail model attached (Assignment)

Process Models Completed



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Respond to short term business needs

Strong emphasis on meeting business needs and not "modelling for its own sake"

- Business need for and commitment to
  - Safety, Health and Environment
  - Labour Planning
  - Process standardisation
  - Single source of management information

…..all driving standardisation and reduced cost

More areas are modelled:

✓Portfolio Management
✓Finance
✓Supply Chain
✓Mine Support Services
…

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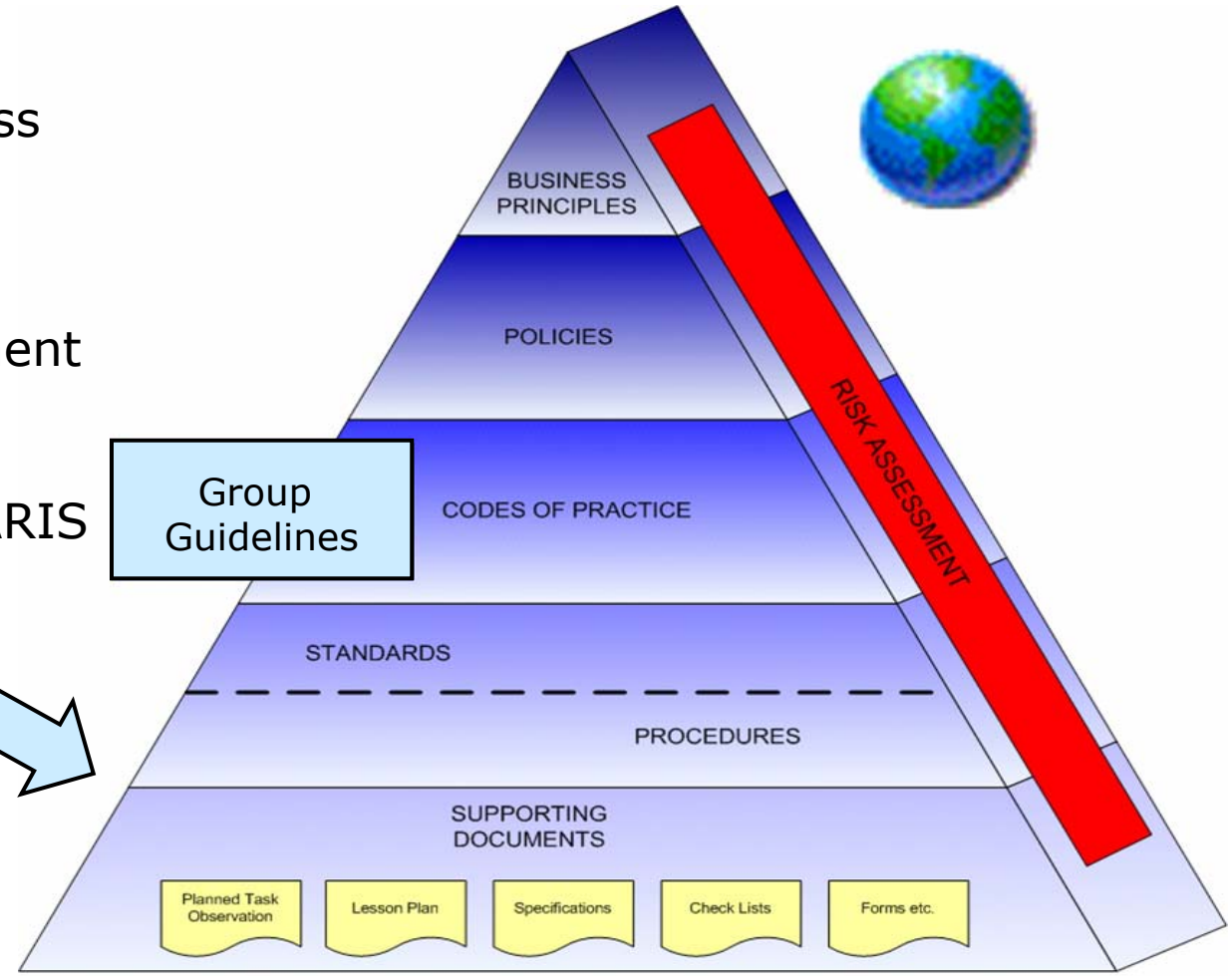
Corporate Governance & Risk Management

- Principles, policies, codes of practice and standards ***referenced*** in business process models
- Automated ***synchronisation*** between Governance Document Repository and ARIS
- Procedures ***generated*** from ARIS in MS Word format and converted to PDF



Group Risk Manager actively supports business process modelling

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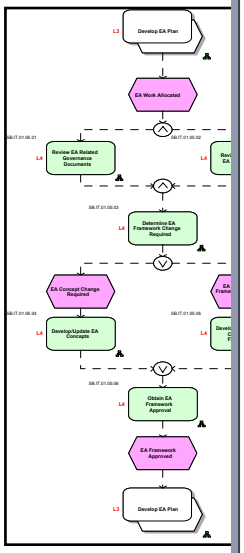
Business Process Mo

Model Busi
Process Flo

Business
w/Edit Activity

Publish MS Word



- Model
- Approp
- Trainir

rocess

ANGLO PLATINUM

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	Snr. Manager:Strategy,Plan & Architecture		
APPROVED BY:	Johan Serfontein	Chief Information Officer		

ANGLO PLATINUM

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Return to Sub-Pro

l be automatically popu

d to Activity Obj

Add job

Add position

Add role

Add document

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

Set direction ...

Appendix description...

Documents

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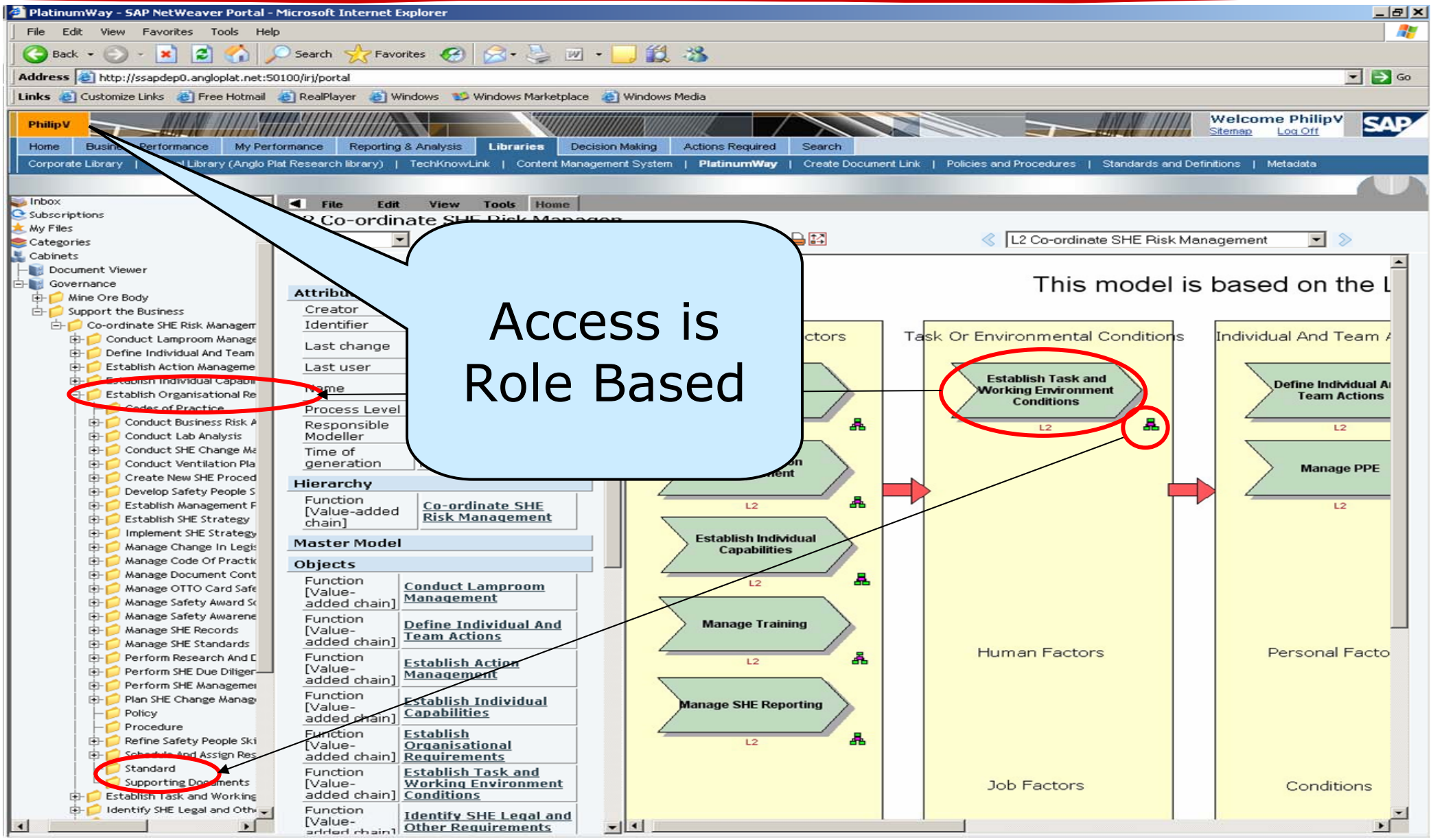
Business Processes Models Hyperlinked to Documents



Business Processes Hyperlinked to DMS

PlatinumWay - SAP NetWeaver Portal - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://ssapdep0.angloplat.net:50100/irj/portal

Links Customize Links | Free Hotmail | RealPlayer | Windows | Windows Marketplace | Windows Media

PhilipV — Welcome PhilipV — Sitemap — Log Off — SAP

Home | Business Performance | My Performance | Reporting & Analysis | Libraries | Decision Making | Actions Required | Search

Corporate Library | Virtual Library (Anglo Plat Research library) | TechKnowLink | Content Management System | PlatinumWay | Create Document Link | Policies and Procedures | Standards and Definitions | Metadata

ECM_REPO : Document Viewer
- Home Cabinet
  - Inbox
  - Subscriptions
  - My Files
  - Categories
  - Cabinets
    - Document Viewer
    - Governance
      - Mine Ore Body
        - Operate Mine
      - Support the Business
        - Co-ordinate SHE Risk Management
          - Conduct Lamproom Management
          - Define Individual And Team Actions
          - Establish Action Management
          - Establish Individual Capabilities
          - Establish Organisational Requirements
            - Codes of Practice
            - Conduct Business Risk Assessment
            - Conduct Lab Analysis
            - Conduct SHE Change Management
            - Conduct Ventilation Planning
            - Create New SHE Procedure
              - Codes of Practice
              - Policy
              - Procedure
              - Standard
              - Supporting Documents
            - Develop Safety People Skills
            - Establish Management Processes
            - Establish SHE Strategy
            - Implement SHE Strategy
            - Manage Change In Legislation And Other Requirements
            - Manage Code Of Practice
            - Manage Document Control
            - Manage OTTO Card Safety Reward System
            - Manage Safety Award Scheme
            - Manage Safety Awareness Communication
            - Manage SHE Records
            - Manage SHE Standards
            - Perform Research And Development For Change Managem
            - Perform SHE Due Diligence
            - Perform SHE Management Review

File Edit View Tools Home

L3 Detail - Create New SHE

Graphic — L3 Detail - Create New SHE Procedure

Model

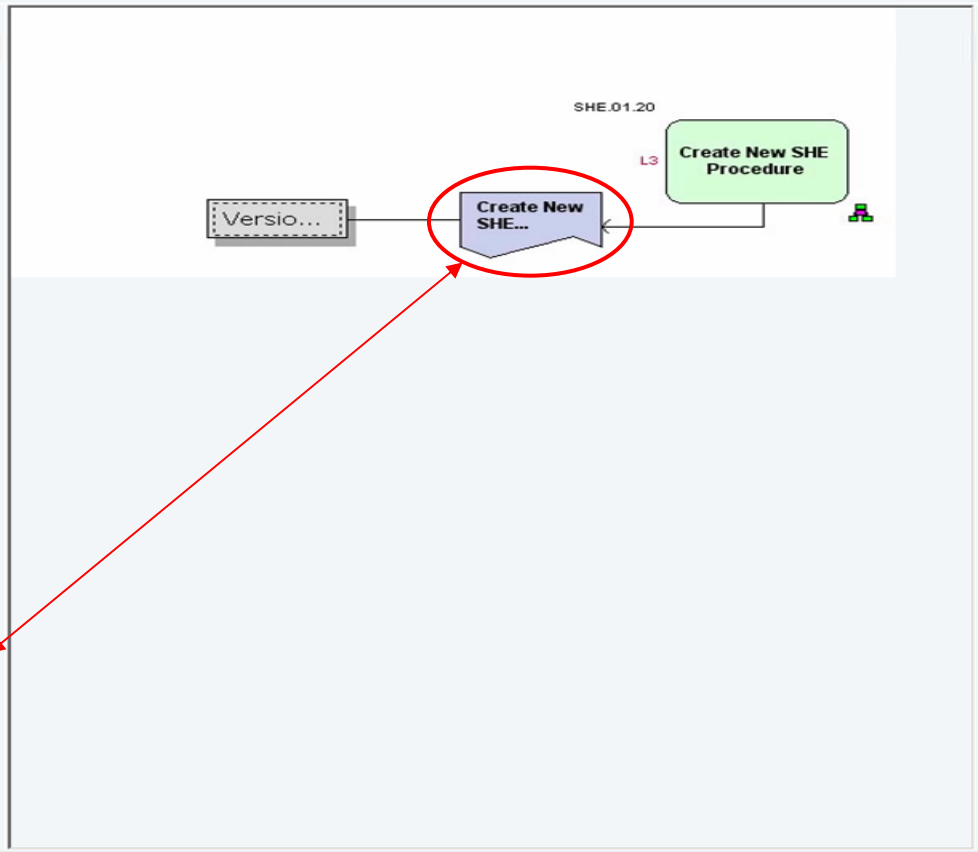
Attributes	
Creator	karenv
Last change	2006/11/20 12:47:50 PM
Last user	rnapier
Name	L3 Detail - Create New SHE Procedure
Responsible Modeller	kvisagie
Time of generation	2005/12/08 10:46:40 AM

Hierarchy	
Function [Value-added chain]	Create New SHE Procedure

Master Model

Objects	
COT attribute [COT attribute]	Version 1.0
Function [Value-added chain]	Create New SHE Procedure
Information carrier [Document]	Create New SHE Procedure

Variants

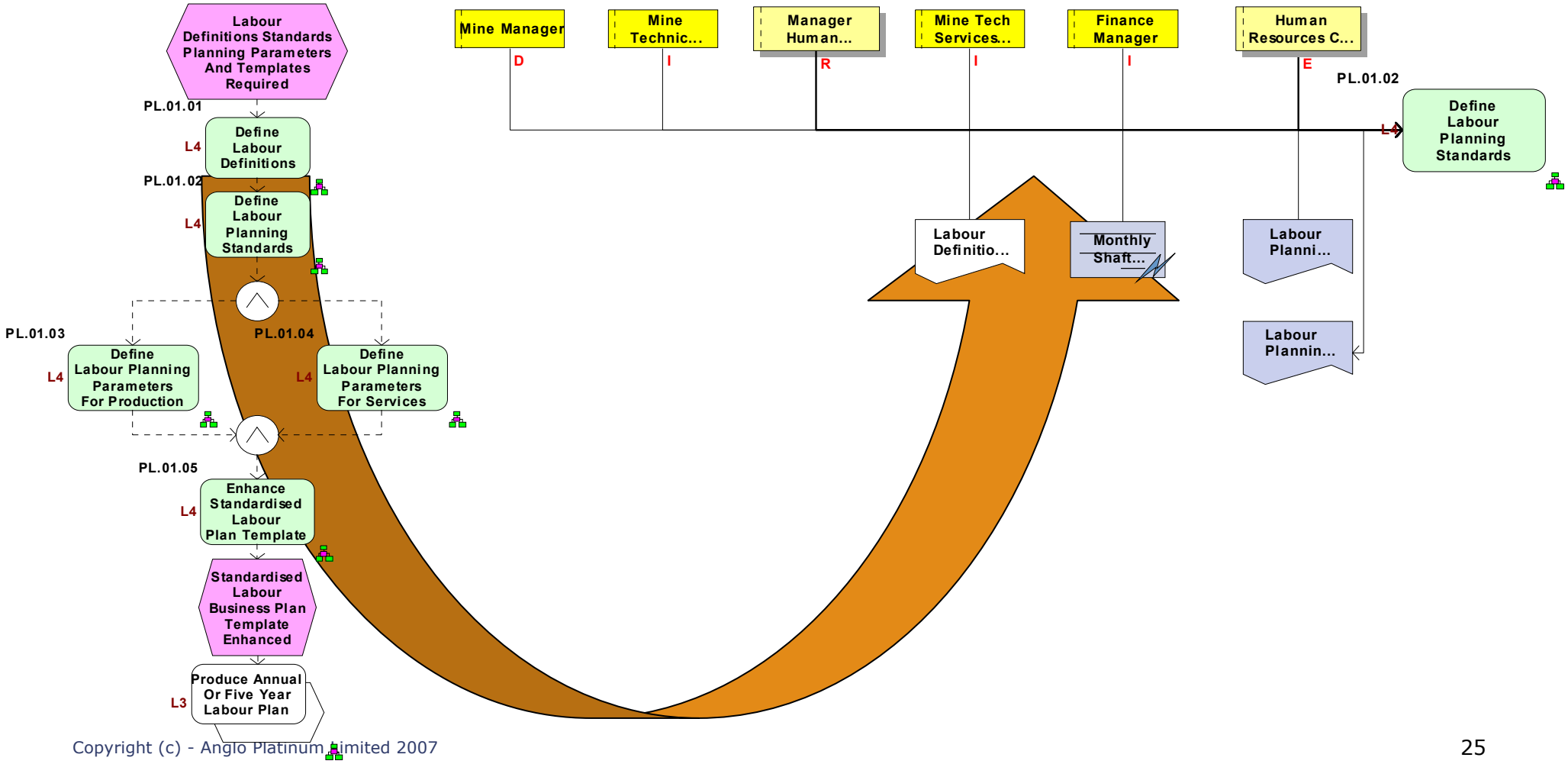


Business Process Models – Different Views

Capture process flow

Capture process detail

nerate views for different audiences or uses.



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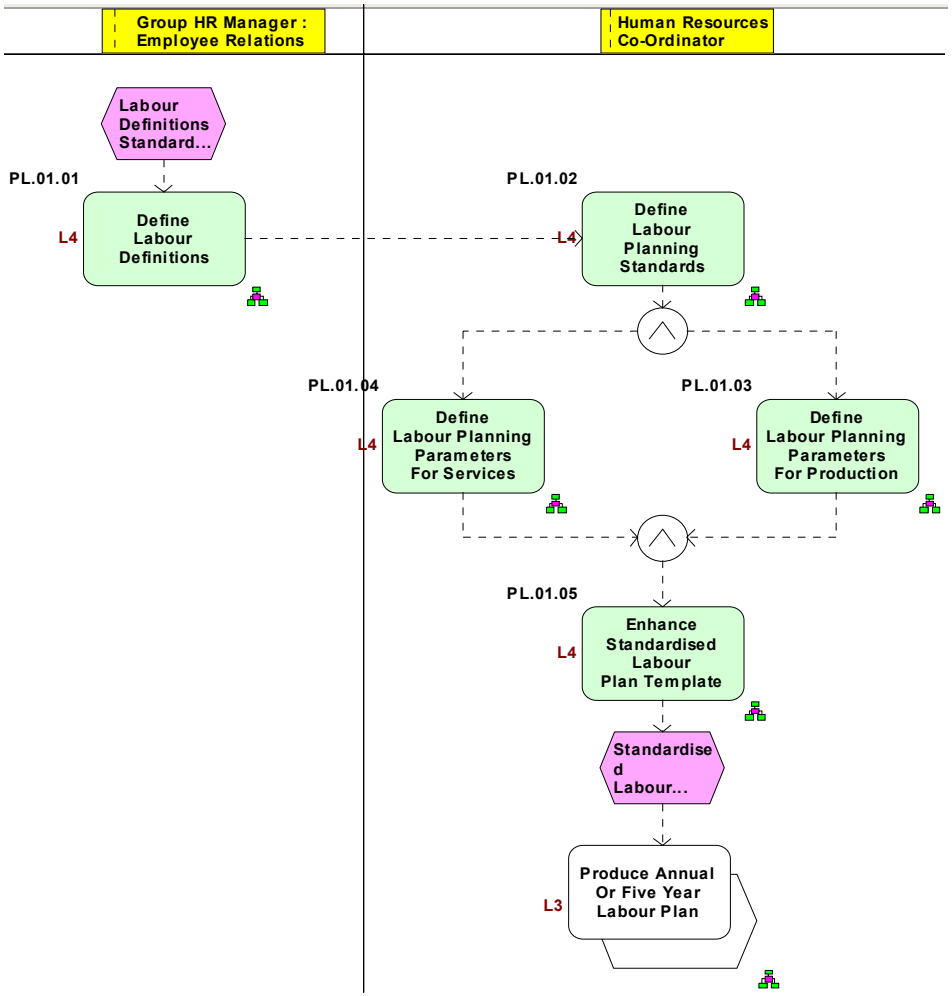
Business Process Models - Swimlane



Used for:

- Role-based training
- Process optimisation
- Workflow implementation
- Process control – segregation of duties

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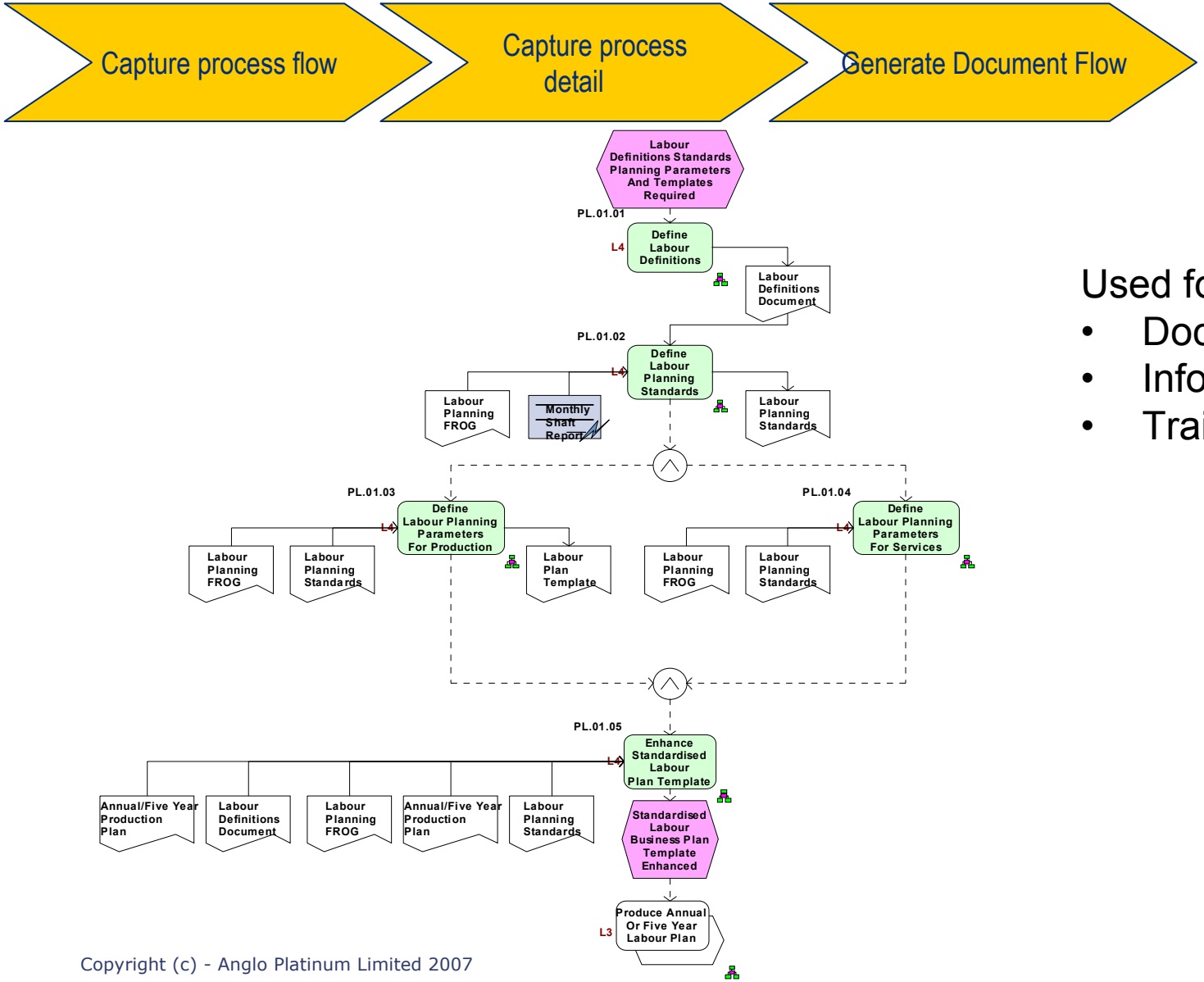
Business Process Models – Document Flow



Used for:

- Document management
- Information flow
- Training

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Analytical Reporting

Where sufficient content has been captured, reports are generated with detail of roles and responsibilities allowing, in due course, for more equitable task loading

Job	L3 Sub-process	L4 Activity	L4 Description	R	A	I	D	E
Safety Officer: SHE	Analyse SHE Incident	Gather Legal And Other Requirements For Incident Analysis	The Facilitator and team members will gather [illegible] levant legal and other reference material (proced[illegible] sketches, survey maps etc) th[illegible] he incident a[illegible]					1
Safety Officer: SHE	Analyse SHE Incident	Identify Recommend[illegible] Corre[illegible]	[illegible] Facilitator in conjunction [illegible] Te[illegible] ctive actions for [illegible]					1
Safety Officer: SHE	Analyse SHE Incid[illegible]	[illegible] ns Contributin[illegible] SH[illegible] sid[illegible]	[illegible] e identified and agreed er[illegible] dividual or[illegible] n[illegible] ocated for [illegible] in[illegible] the AICAT[illegible]					
Safety Officer: SHE	Analyse SHE Incid[illegible]	[illegible] ntributed [illegible] Incident	The Facilitator[illegible] ption for each identifi[illegible] the AICAT[illegible] that [illegible] and rec[illegible] or [illegible] Organisat[illegible] eet.					1
Safety Office[illegible]	Analyse SH[illegible]	Rec[illegible] ted To SHE [illegible] ent	[illegible] facil[illegible]tor must all[illegible] tion for each identified Task [illegible] om the AICAT chart as wel[illegible] on on the Task / Environmental [illegible]					1
Safety Office[illegible]	[illegible] ble Felt [illegible] ership	[illegible]	When all leading/lagging indicators indicate a specific problem, the BBS Co-ordinator together with the HOD and Safety Officer will recommend that a formal PTO has to be conducted.					1
Safety Officer: SHE	Conduct [illegible] Leaders[illegible]	Analyse Information	After all relevant information has been captured into the BBS software, the Safety Officer will analise the information in order to determine all leading indicators.					1
Safety Officer: SHE	Conduct Visible Felt Leadership	Complete Observation Reports	The SHE Administrator will develop the required leading indicator reports.					1

Helps identify roles which are neither accountable nor responsible, Why do they exist?

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Analytical Reporting – Role Accountability

Where sufficient content has been captured, reports are generated with detail of roles and responsibilities allowing, in due course, for more equitable task loading

Job	L3 Sub-process	L4 Activity	L4 Description	R	A	I	D	E
Safety Officer: SHE	Analyse SHE Incident	Gather Legal And Other Requirements For Incident Analysis	The Facilitator and team members will gather all relevant legal and other reference material (procedures, COP's, plans, sketches, survey maps etc) that may be required to conduct the incident analysis.					1
Safety Officer: SHE	Analyse SHE Incident	Identify Recommended Corrective Actions	Based on the analysis of the incident, the Facilitator in conjunction with the Analysis Team, will recommend corrective actions for each identified organisational factor					1
Safety Officer: SHE	Analyse SHE Incident	Record Identified Individual And Team Actions Contributing To SHE Incident	The Facilitator will record on a Guide Sheet the identified and agreed errors and violations caused by any individual or team. A number and description will be allocated for each identified individual/team action from the AICAT chart and the reason/explan					1
Safety Officer: SHE	Analyse SHE Incident	Record Organisational Factors That Contributed To SHE Incident	The Facilitator will allocate a number and description for each identified Organisational Factor from the AICAT chart that contributed to the SHE incident and record the reason or explanation on the Organisational Factors Record Sheet.					1
Safety Officer: SHE	Analyse SHE Incident	Record Task And Environmental Conditions That Contributed To SHE Incident	The facilitator must allocate a number and description for each identified Task and Environmental condition from the AICAT chart as well as the reason or explanation on the Task / Environmental Condition Guide Sheet.					1
Safety Officer: SHE	Conduct Visible Felt Leadership	Analyse All Indicators	When all leading/lagging indicators indicate a specific problem, the BBS Co-ordinator together with the HOD and Safety Officer will recommend that a formal PTO has to be conducted.					1
Safety Officer: SHE	Conduct Visible Felt Leadership	Analyse Information	After all relevant information has been captured into the BBS software, the Safety Officer will analise the information in order to determine all leading indicators.					1
Safety Officer: SHE	Conduct Visible Felt Leadership	Complete Observation Reports	The SHE Administrator will develop the required leading indicator reports.					1

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Analytical Reporting – Automation Opportunities

Manual processes for possible future automation have been identified

L2 Process	L3 Sub-process	L4 Activity	L4 Description	Apl	Aut
Manage Hygiene Measurement And Monitoring	Conduct Hygiene Measurement And Monitoring Sampling	Identify Hygiene Work Area To Be Sampled	The Shaft Ventilation Engineer in consultation with the senior Vent Engineer and Occupational Hygiene manager will identify required demographics of stationary sampling as prescribed by legislation		Yes
Manage Hygiene Measurement And Monitoring	Conduct Hygiene Measurement And Monitoring Sampling	Review Analysed Hygiene Sample Results	The Shaft Ventilation Officer will assess sampling results against required limits as prescribed by legislation under the supervision of the Shaft Ventilation Engineer.		Yes
Manage Hygiene Measurement And Monitoring	Prepare Hygiene Measurement And Monitoring	Assign Hazard Measurement And Monitoring Hygiene Schedule	The Shaft Ventilation Engineer and Occupational Hygiene Manager will conclude required sampling according to the conducted occupational hygiene risk assessment within the irm.Net Occupational		Yes
Manage Hygiene Measurement And Monitoring	Prepare Hygiene Measurement And Monitoring	Capture Hygiene Measurement And Monitoring Profile	The Shaft Ventilation Engineer in consultation with the Occupational Hygiene Manager will assign occupations to homogeneous exposure groups, activities and occupational hygiene risk		Yes
Manage Hygiene Measurement And Monitoring	Prepare Hygiene Measurement And Monitoring	Close Out Original Incident	After completion of the investigation and the required actions taken, close out the complaint on IRM.net.		Yes
Manage Hygiene Measurement And Monitoring	Prepare Hygiene Measurement And Monitoring	Identify Homogeneous Exposure Hygiene Groups	The Occupational Hygiene Manager and the Shaft Ventilation Engineer will determine employee exposures in comparison to geographical areas and similar occupation profiles within the IRM.net		Yes
Manage Hygiene Measurement And Monitoring	Prepare Hygiene Measurement And Monitoring	Identify Hygiene Activity Areas	The Occupational Hygiene Manager with the Shaft Ventilation Engineer will compare the SAMHOP codebook activity list against homogeneous exposure groups comprising of SAP organisational		Yes
Manage Hygiene Measurement	Prepare Hygiene	Identify Hygiene Risks To	The Occupational Hygiene Manager with the Shaft		Yes

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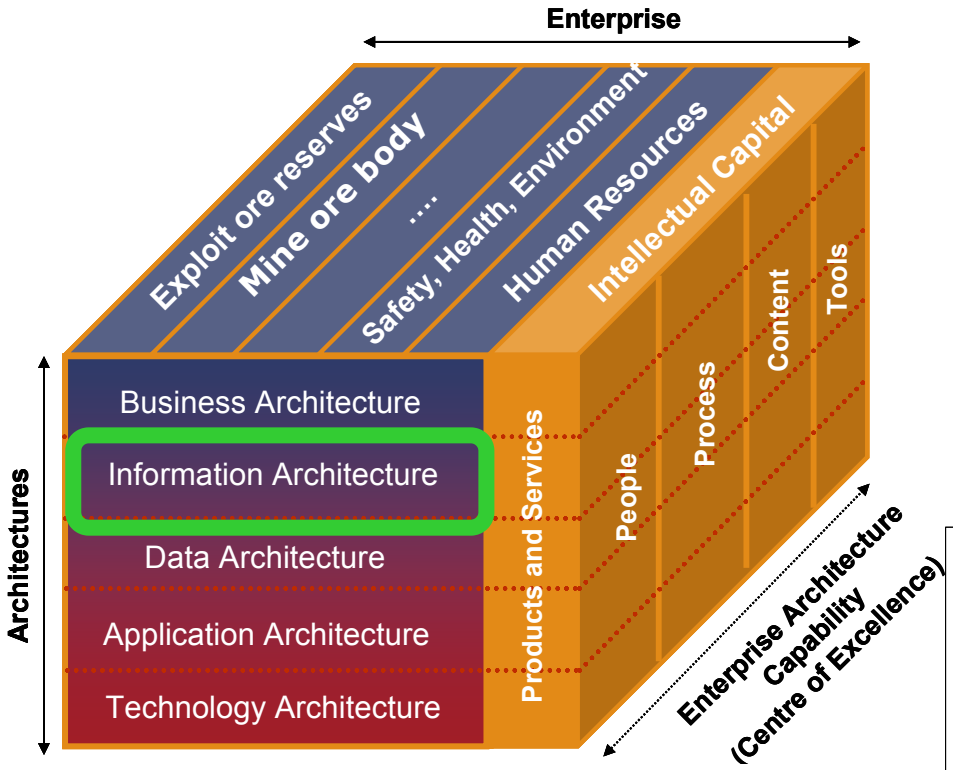
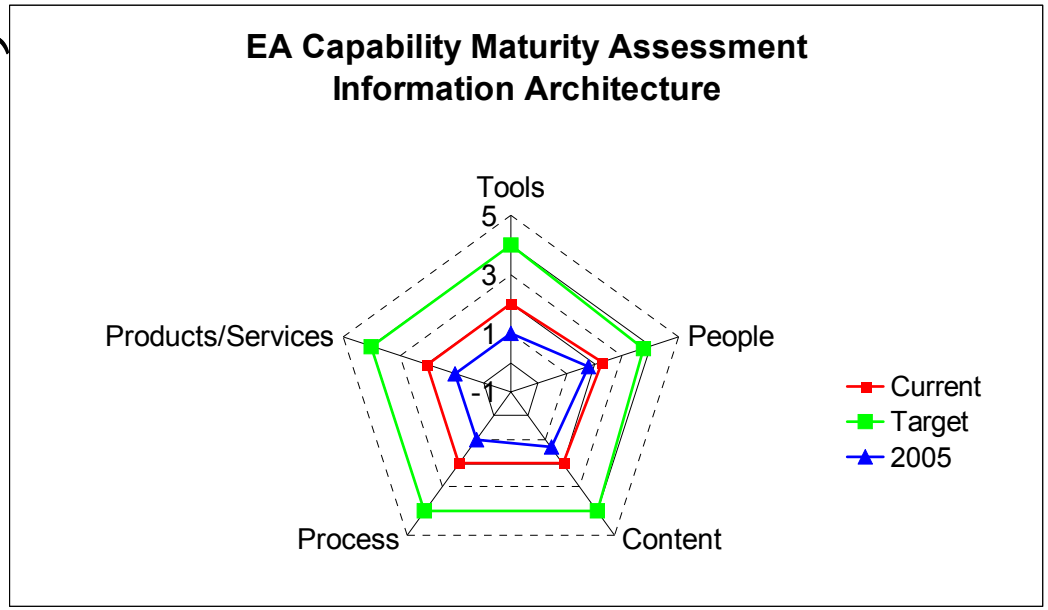
Information Architecture





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Information Models

Information modelling methodology based on the Science of Informational Management (SCIAM) as developed by *Russell Swanborough*.
(http://www.lejara.com)

Used to audit the process from an information perspective, as well as the information completeness

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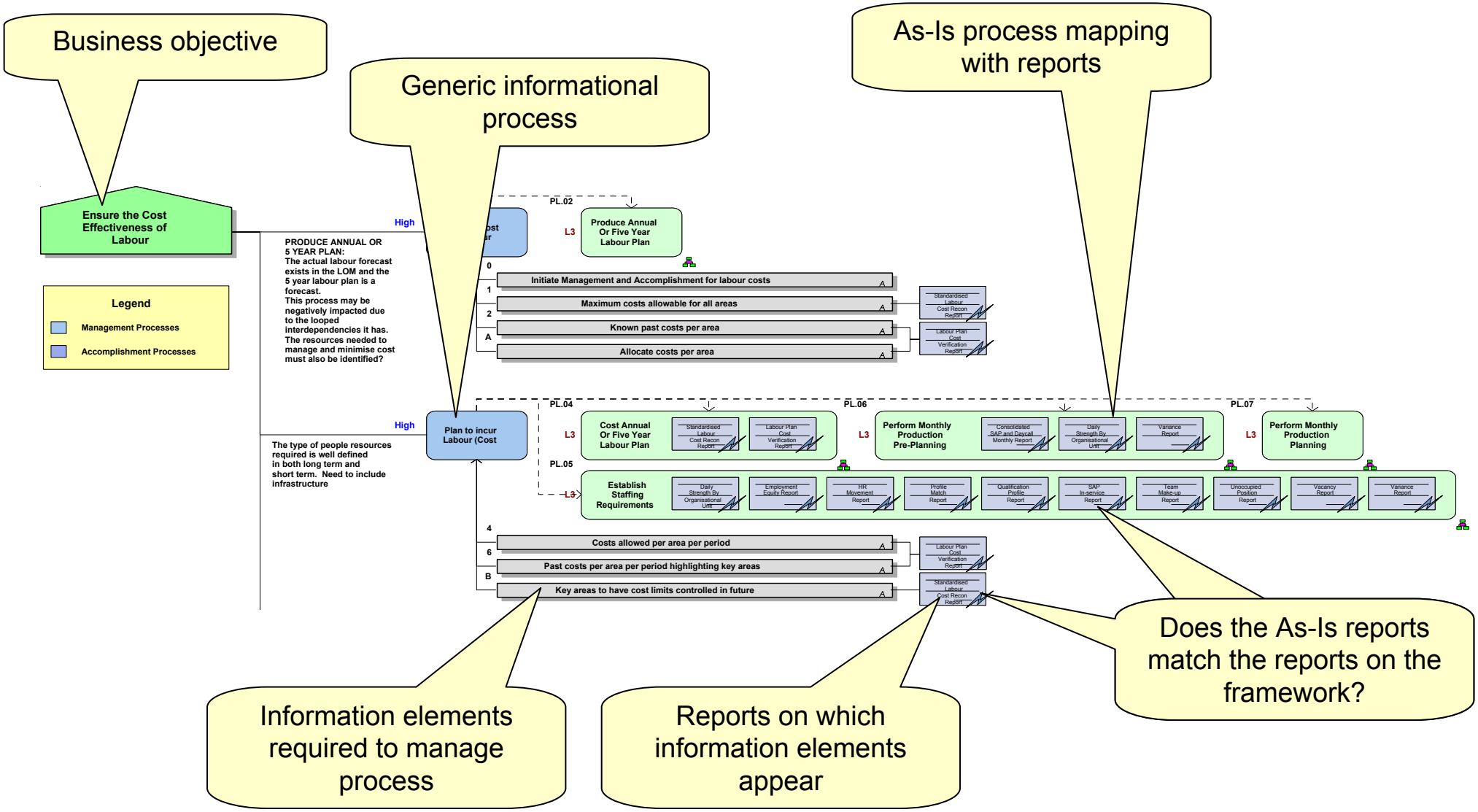
Information Management Audit



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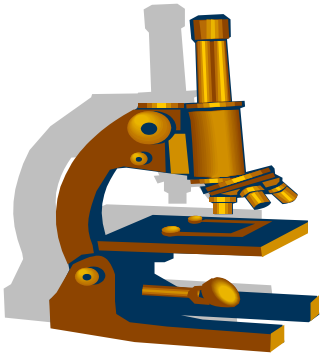
Analyse Reports as an Information Source



Absence analysis	Absence Quota Creations	Address check and ID Verification...	Amplats Mines Retirement...	Amplats Pension Fund	Analysis of current tax results
Annual bonus check	Annual Bonus PMR	Annual bonus report	Annual HR Planning	Annual Increase Report	Annual Increases Bafokeng
Apprentice payscale reclassification	Assessment per Employee (SAP...	Attendance Check	Attendance Register	Attendance/Absence	
Audit Report	Audit Report	Audit Report	Average Rates	Average Rates Managers Report	
Balance IRP5 totals to RTables	Banding Report	Bank Schedule	Bank transfer prelim dmc	Bank transfer prelim dmc	

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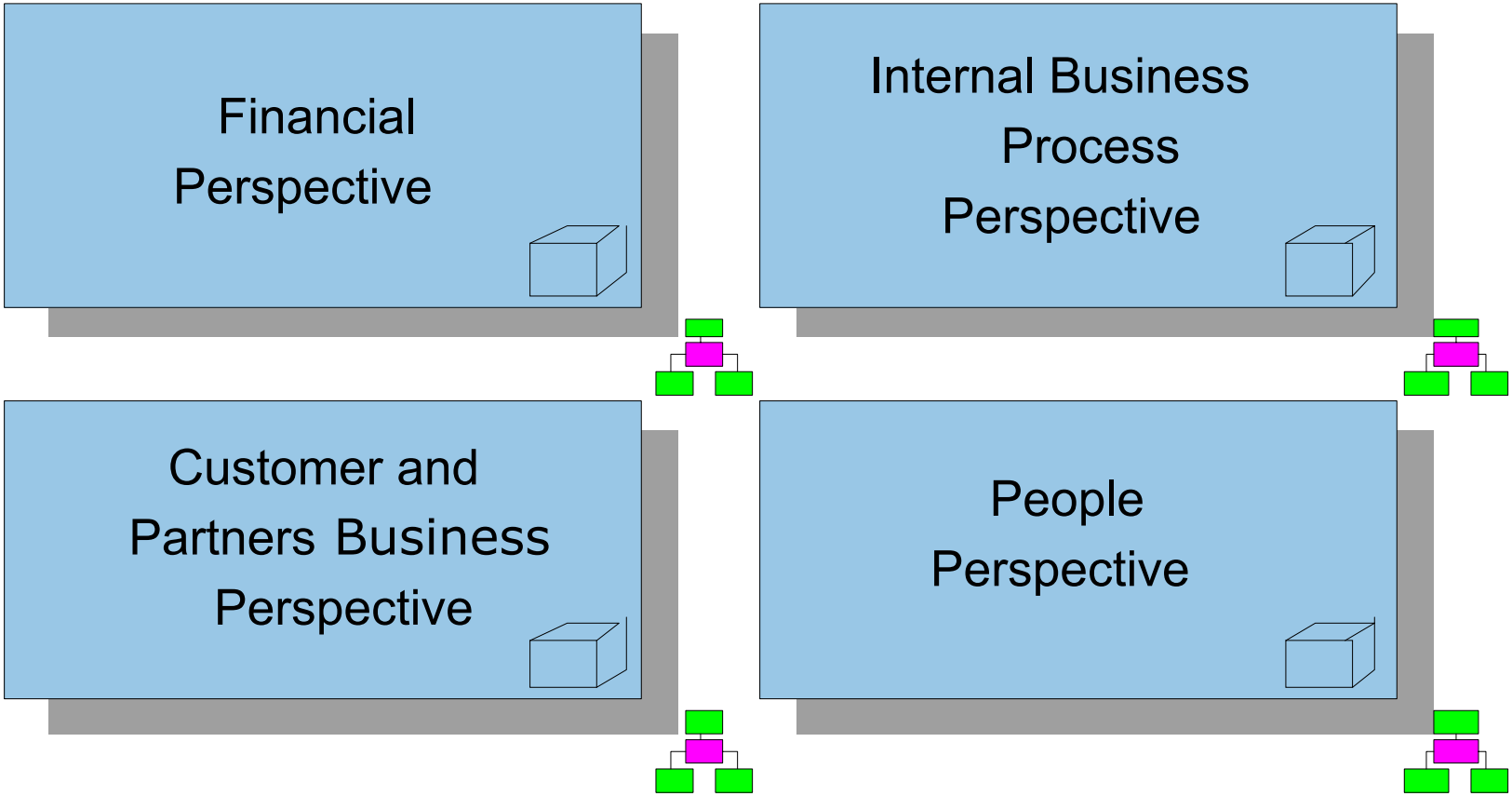
Information Management - Balanced Scorecard



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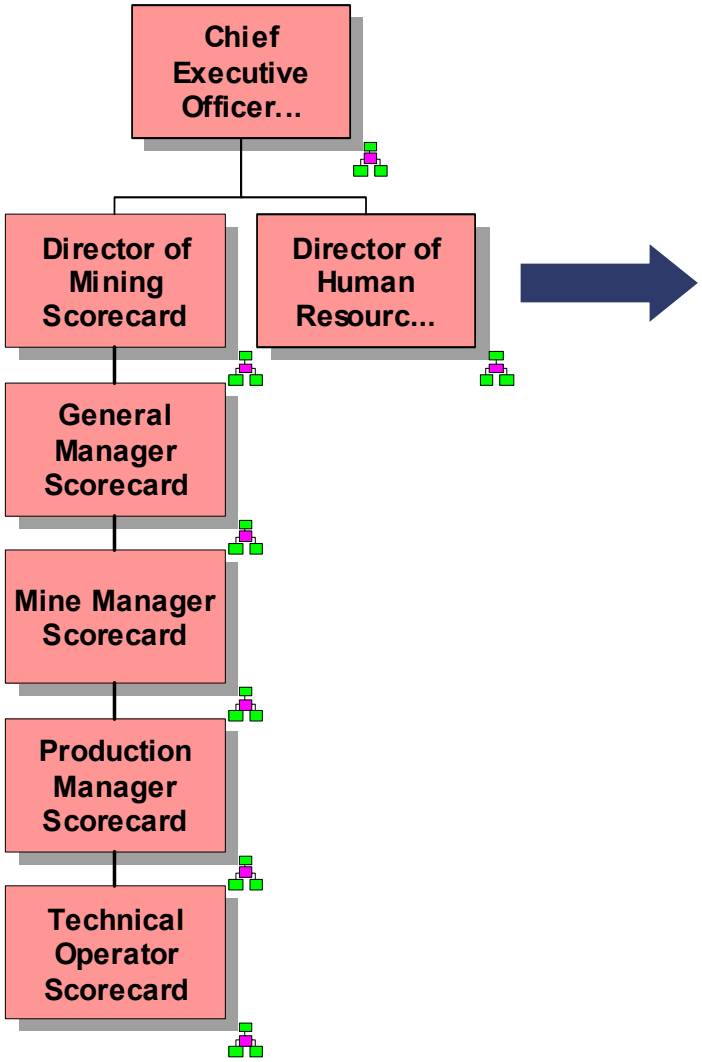

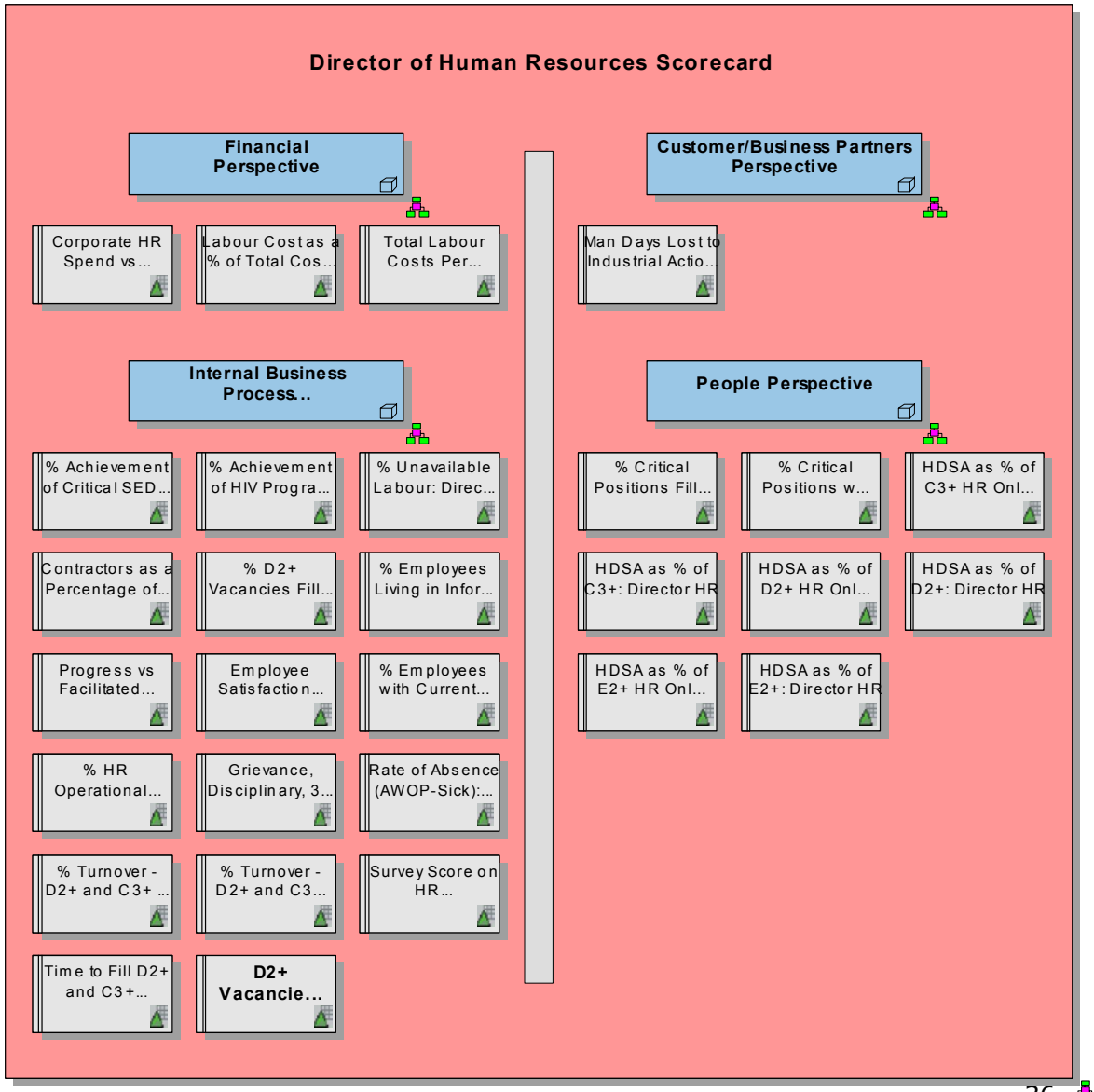

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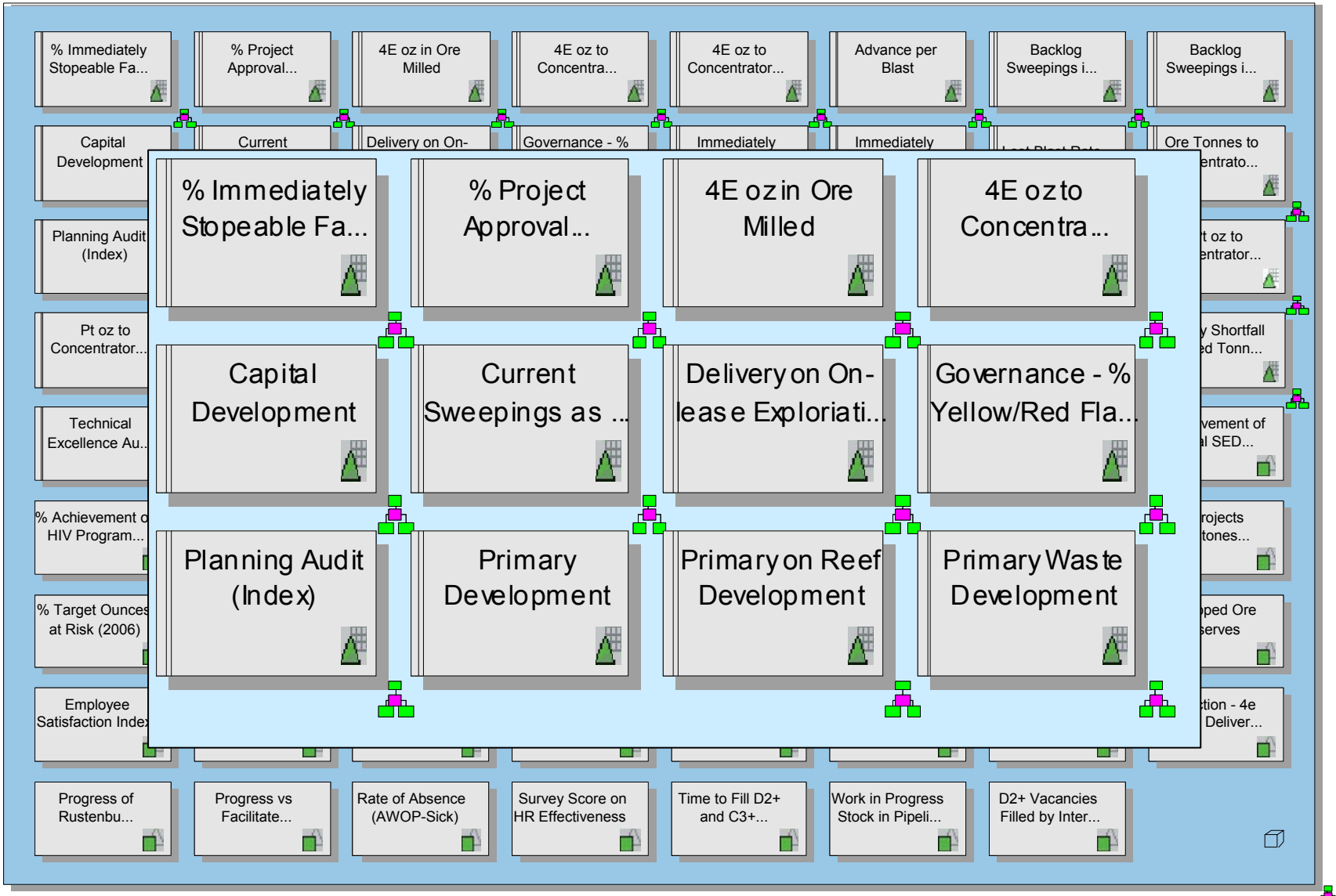
Balanced Scorecard - KPIs



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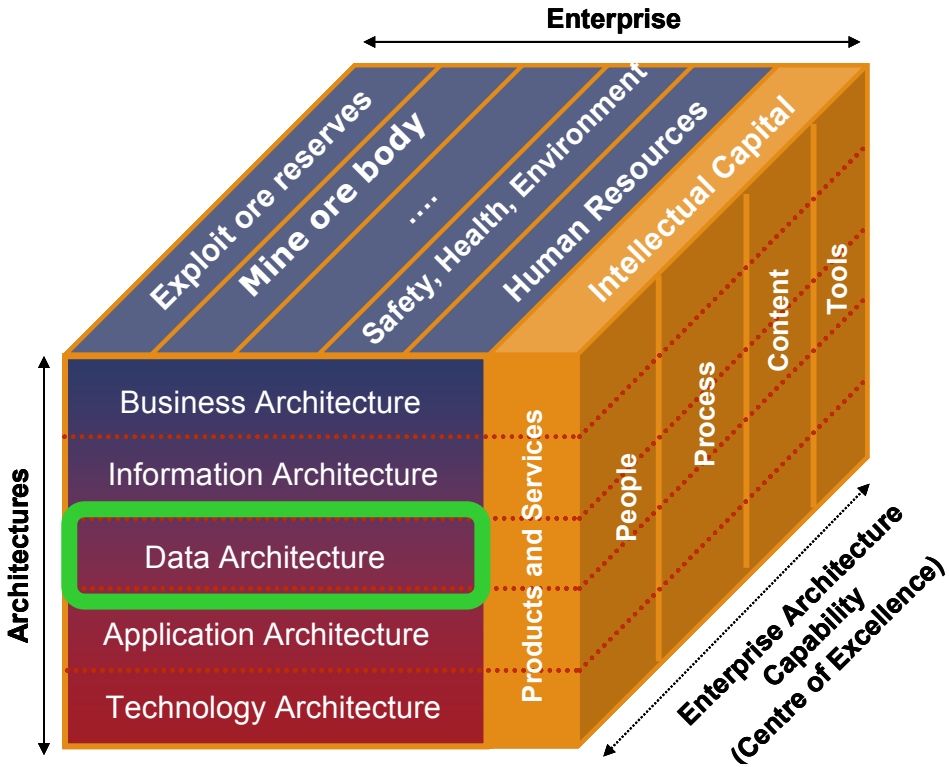
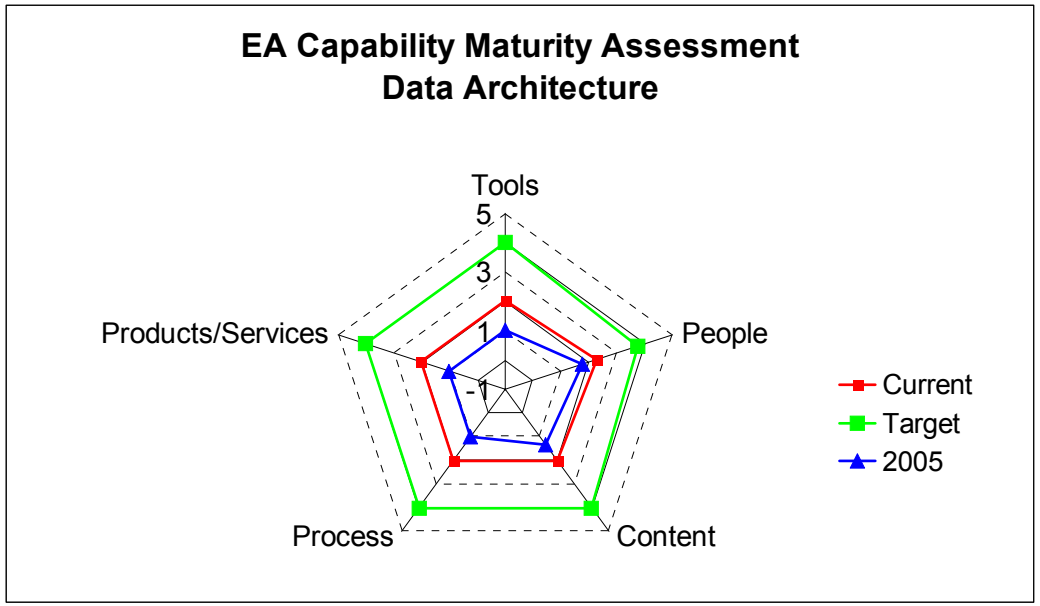
Data Architecture





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Data Models

1. Data models captured where necessary to support information or to define application data base schemas.

(Limited modelling driven by extensive use of packaged solutions)

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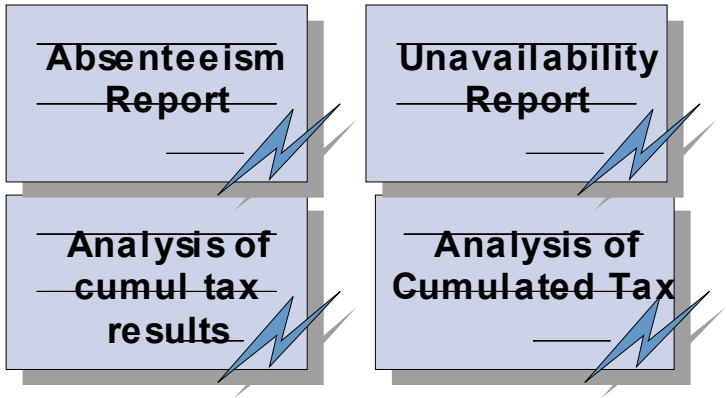
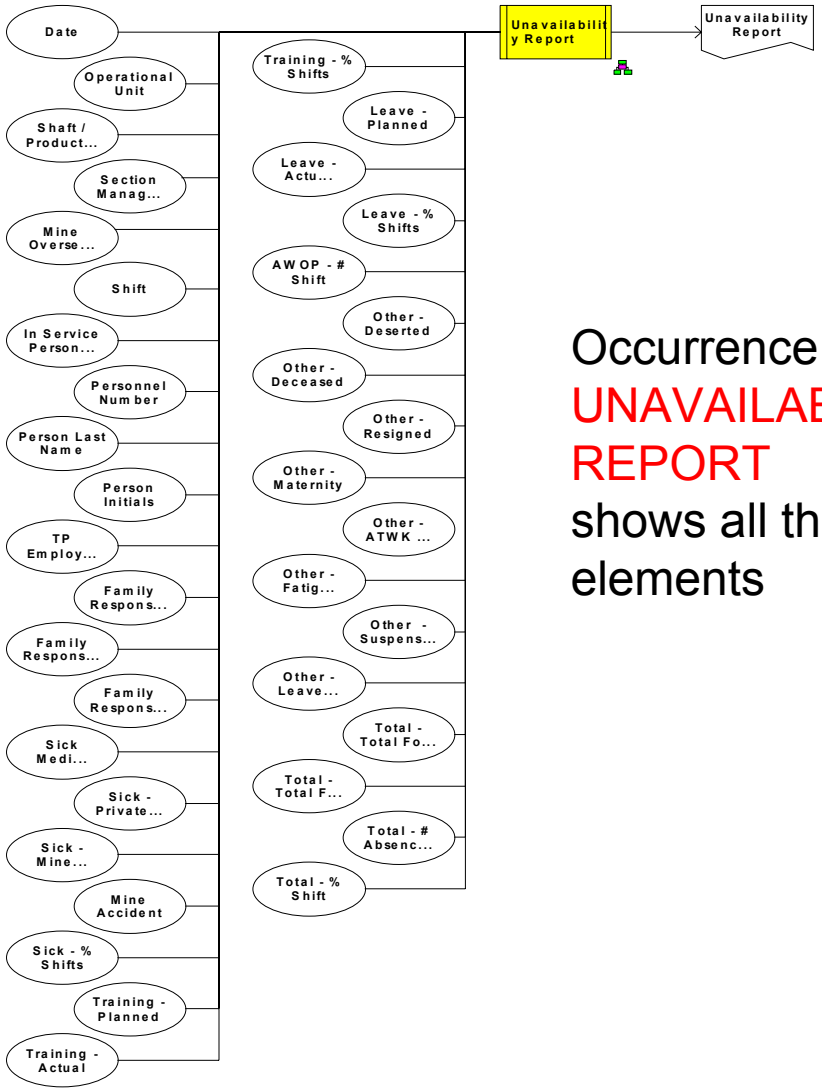
Labour Management – Data Model

Labour Management reports:

Information Architecture

- Information Source
- Report List
- Labour Management Reports





Occurrence of UNAVAILABILITY REPORT shows all the data elements

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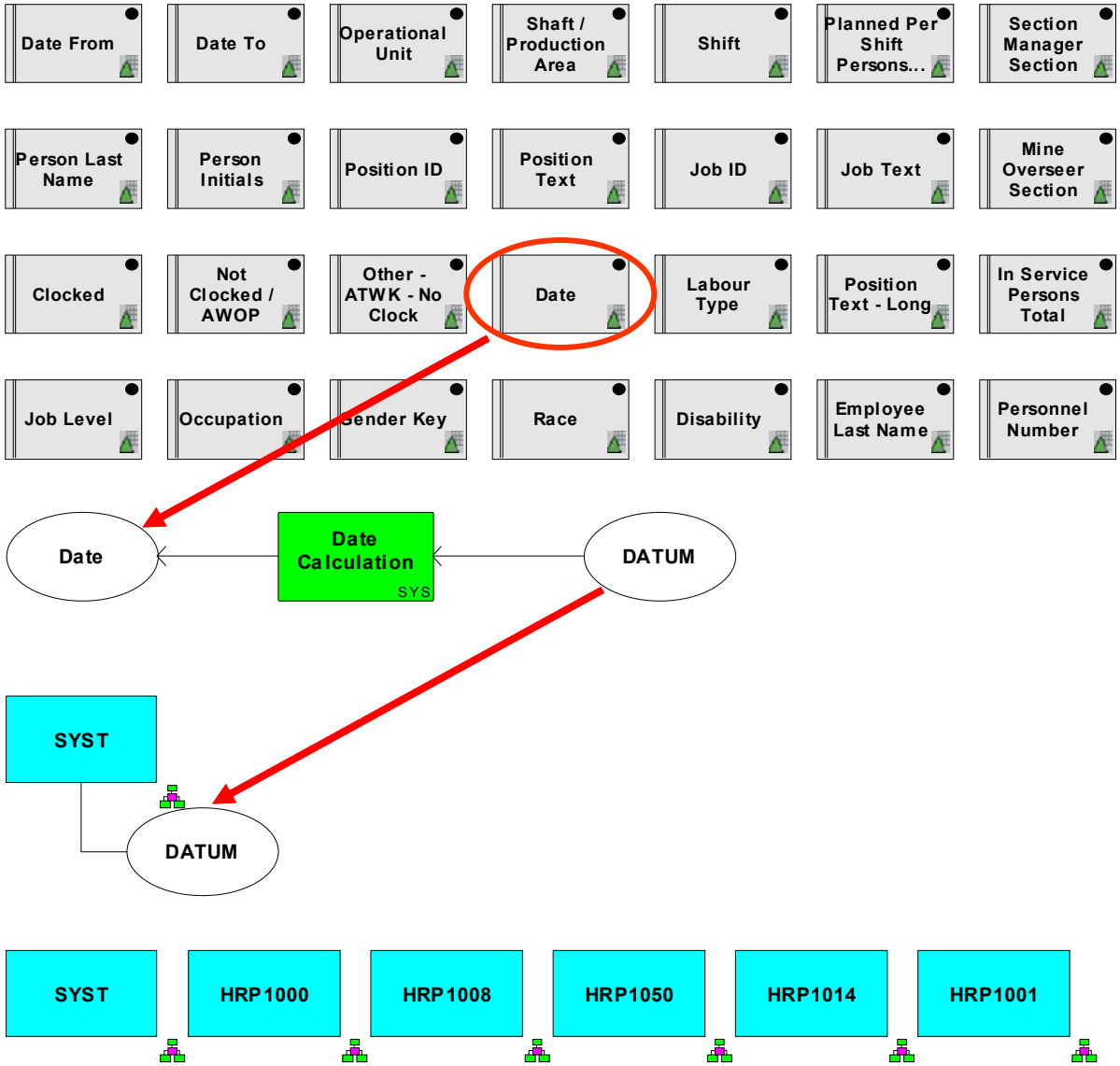
Labour Management – Data Model Detail

Select DATE and on occurrence it shows that it is sourced from SAP BW

DATE is sourced from DATUM

DATUM is in the SYST table

Which is on SAP HR



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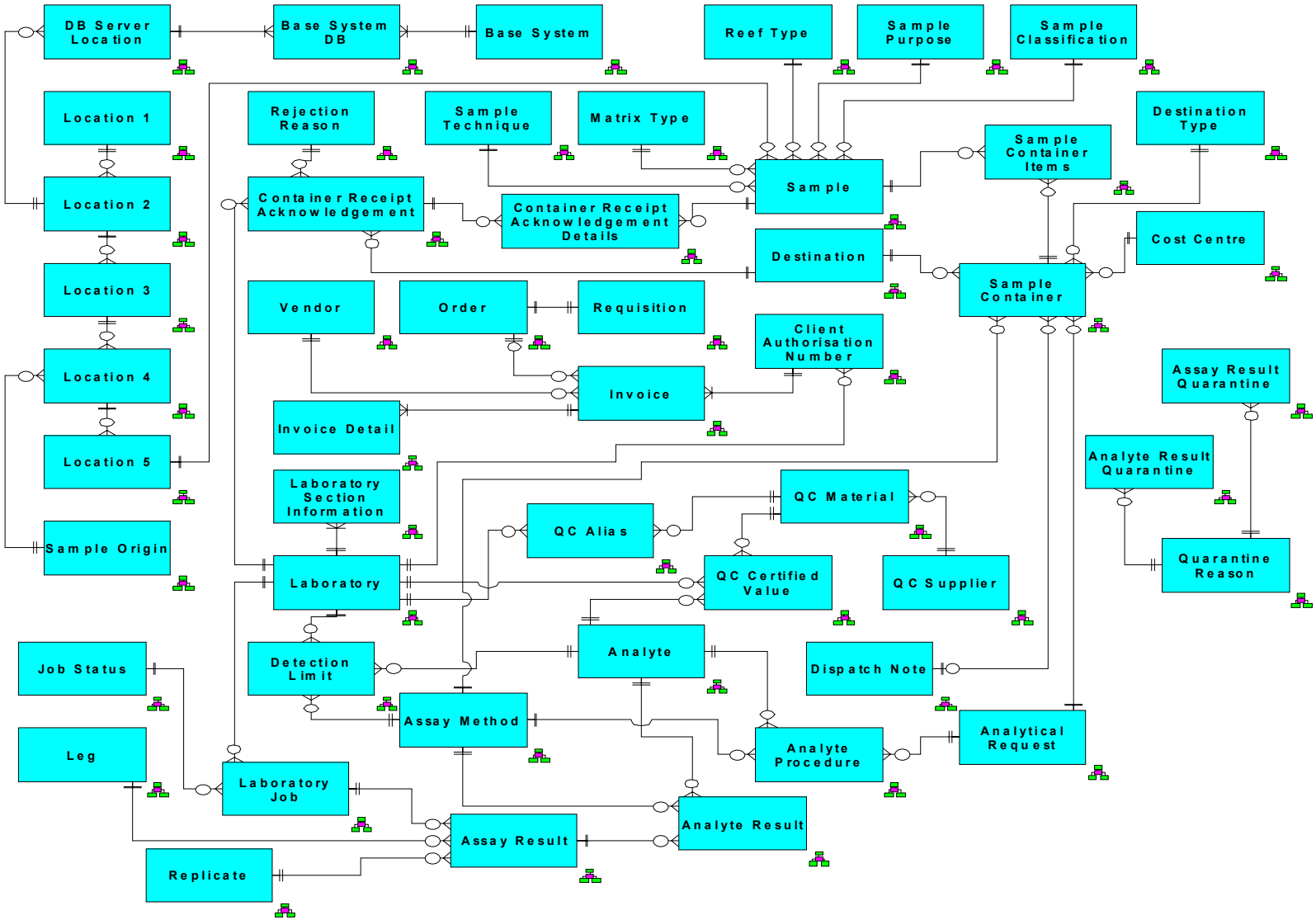
Data Model Example - Assays



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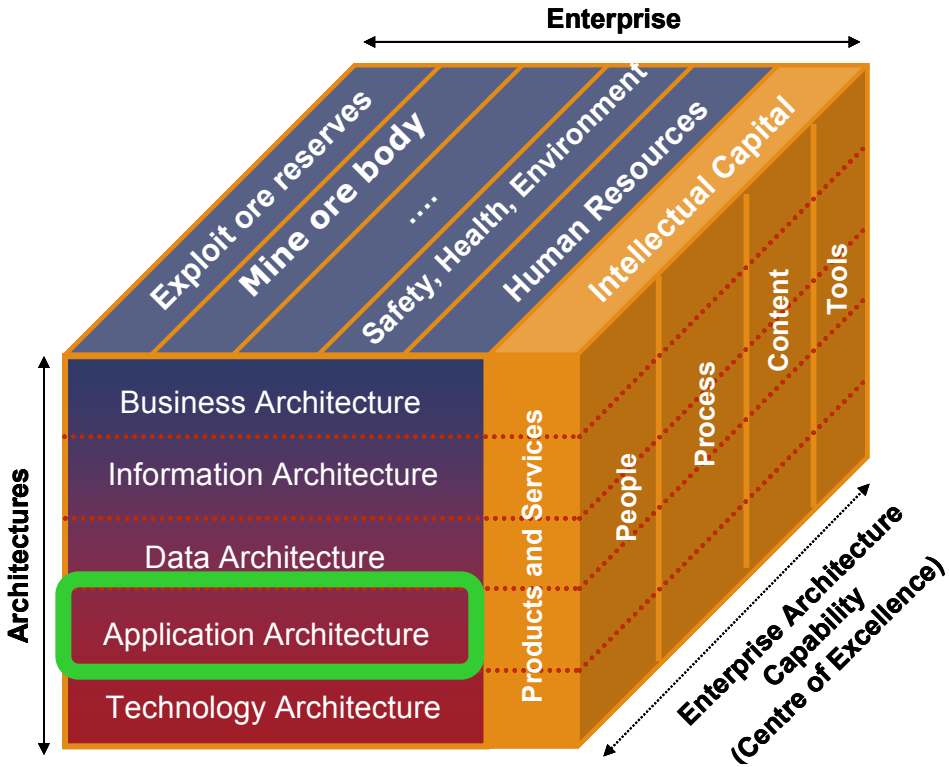
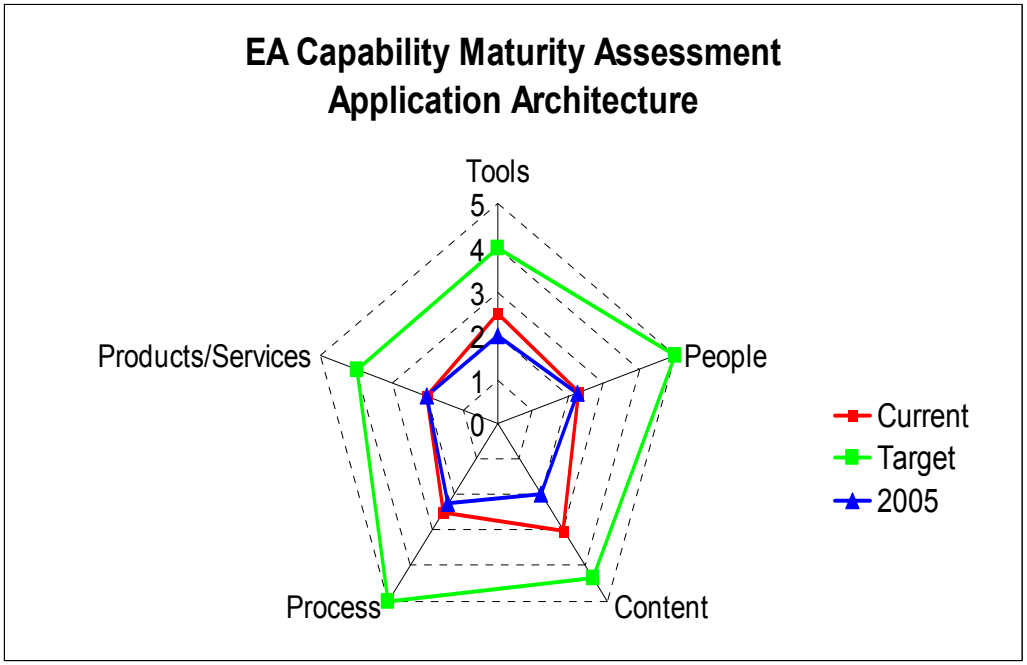
Application Architecture





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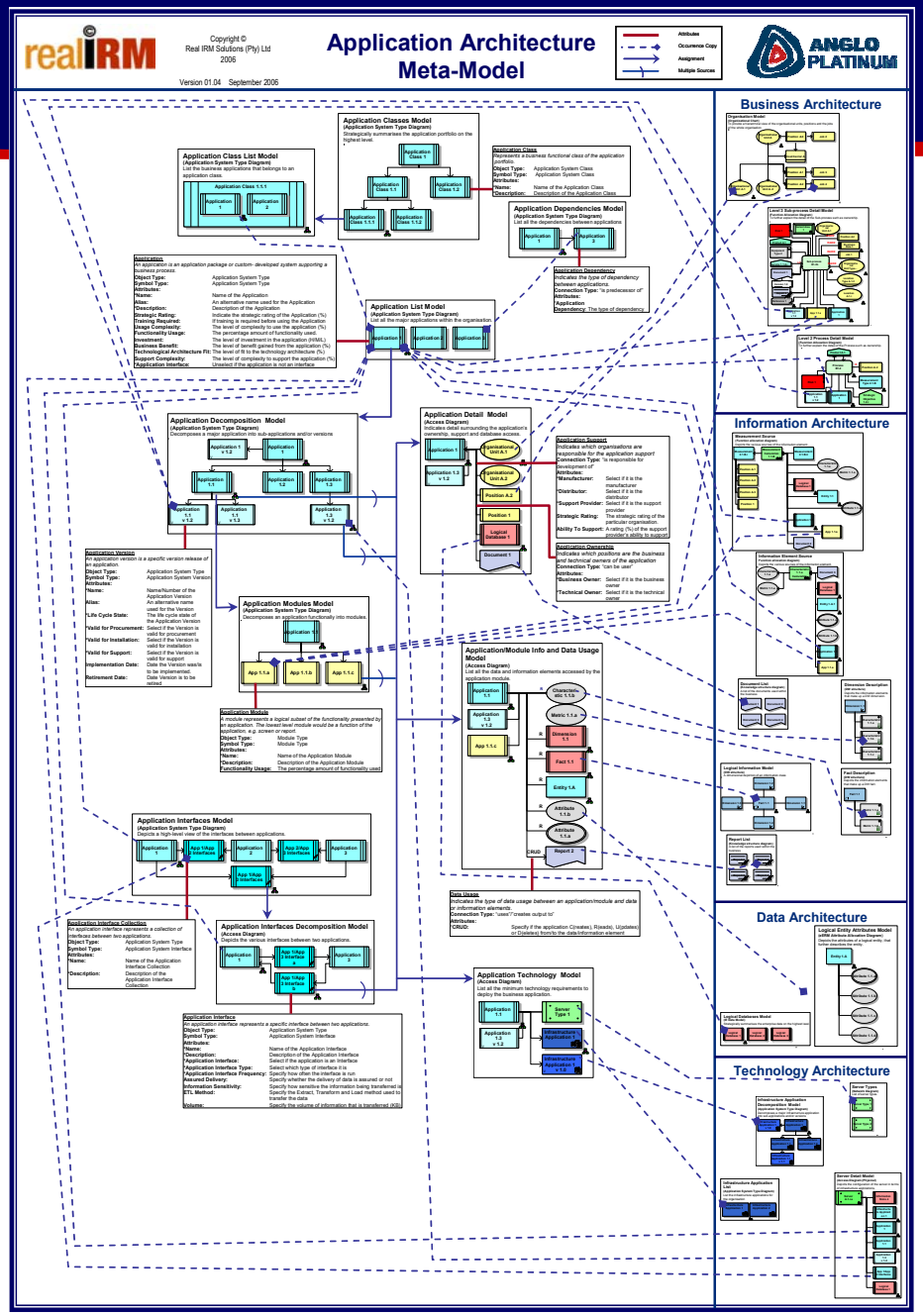
Application Architecture

Extended meta-model to support Application Portfolio Management.

Extensions examples:

- Versions
- Standards
- Ownership
- Licensing
- Cycle
  - Plan → Evaluate → Implement
  - RUN
  - Sunset → Archive



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Application Level - Definitions

	Level Name	Level Example
Level 0	Suite	This contains a product or suite of products e.g. SAP
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
Level 4	Module	A module comprises of composite services and can't be deployed as stand alone application e.g. Accounts Payable
Level 5	Function	OLTP, Objects, services, screens, stored procedures, reports, triggers are Transaction types eg GRV

Application is the only mandatory level for all software products

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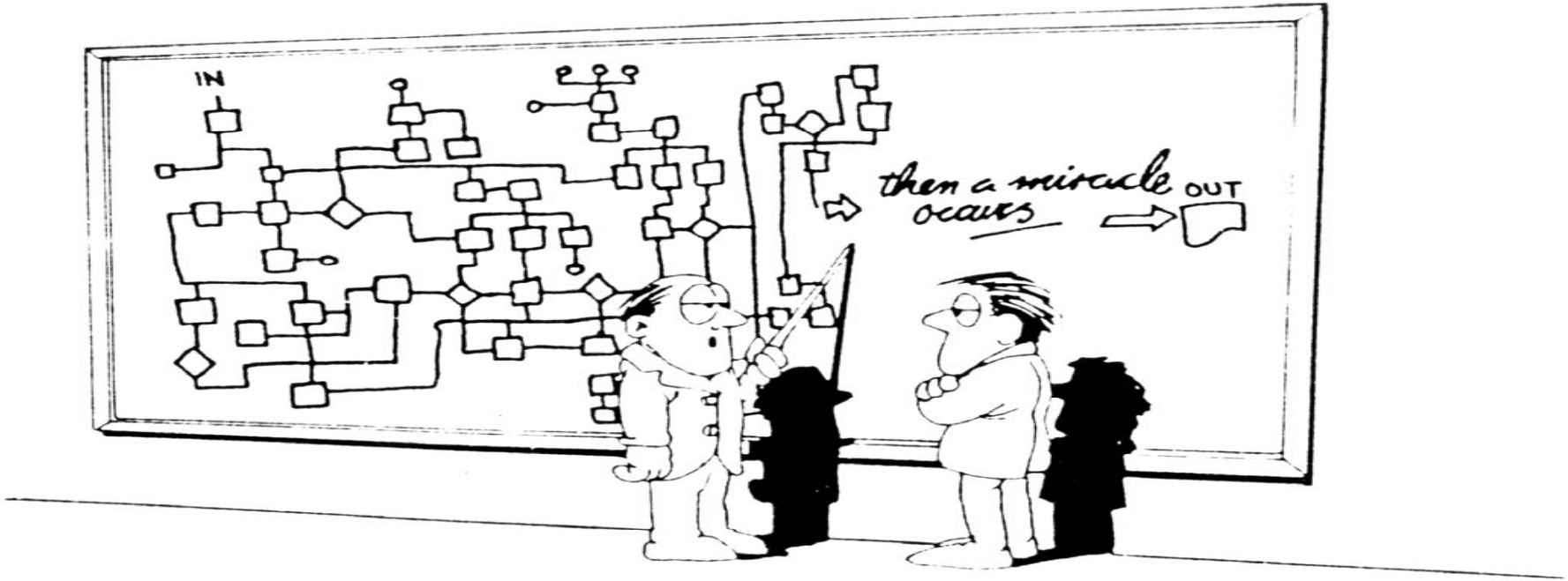
Purpose of Application Levelling

- ✓ 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



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

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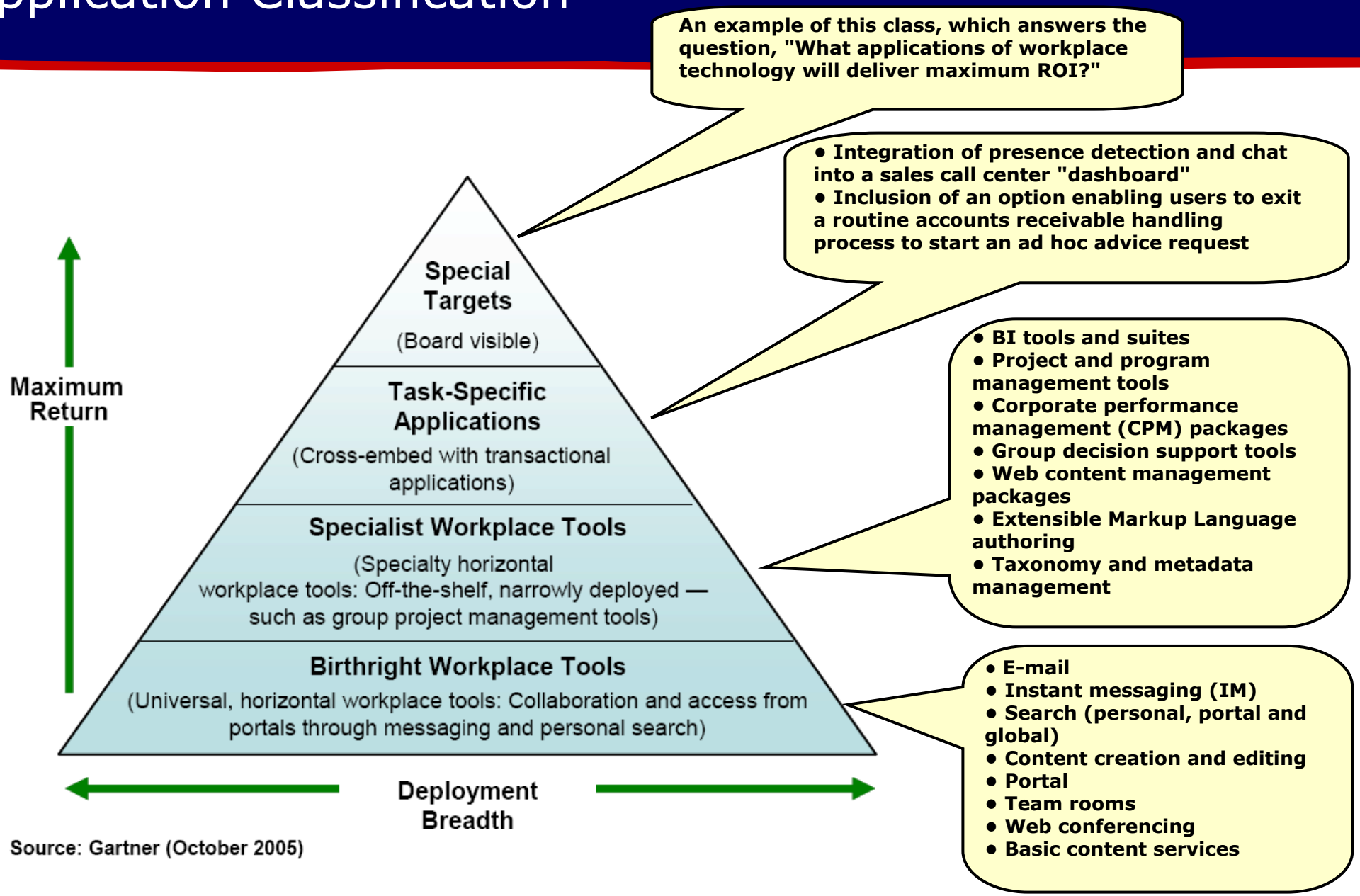
Application Classification



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realIRM

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Real IRM Solutions (Pty) Ltd
2006

Infrastructure Applications Model

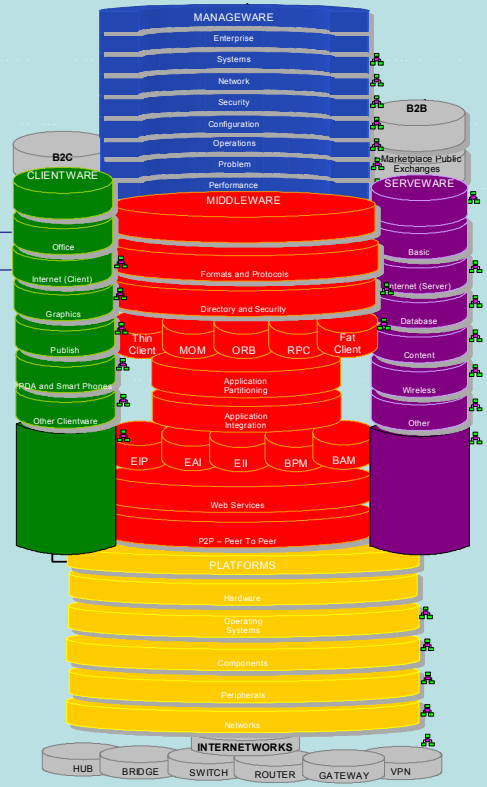
29 May 2006
Version 00.00

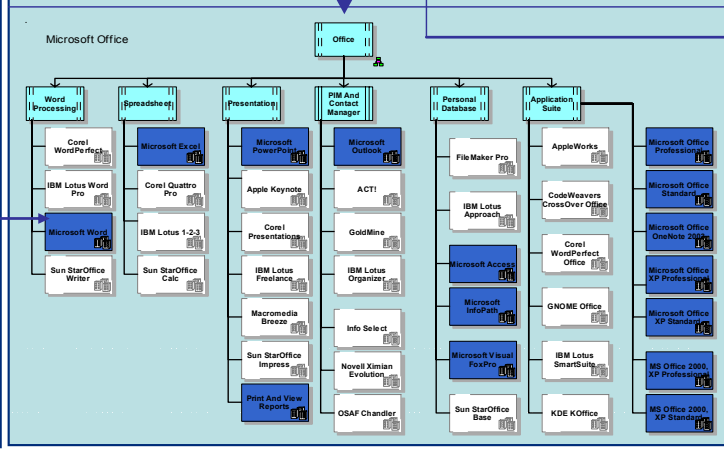
ANGLO PLATINUM

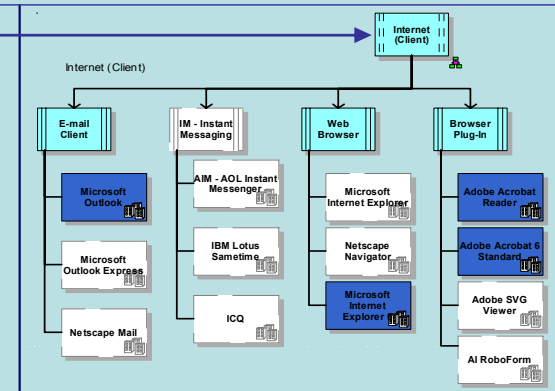
Application List View

3D-FTP	AbsoluteFTP	ACT!	Adobe Acrobat 6 Standard
Adobe Acrobat Reader	Adobe SVG Viewer	AI RoboForm	Apple Keynote
Apple QuickTime Player	AppleWorks	Centra Conference, eMeeting	CodeWeavers CrossOver Office
KDE KOffice	Latitude MeetingPlace	Lotus Notes	Macromedia Breeze
Macromedia Flash Player	Macromedia Shockwave Player	Microsoft Access	Microsoft Access 2000
Microsoft Excel	Microsoft InfoPath	Microsoft Internet Explorer	Microsoft Internet Explorer
Microsoft LiveMeeting	Microsoft MSN Messenger	Microsoft Office	Microsoft Office 2000 Standard
Microsoft Office OneNote 2003	Microsoft Office Professional	Microsoft Office Standard	Microsoft Office XP Professional
Microsoft Office XP Standard	Microsoft Outlook	Microsoft Outlook	Microsoft Outlook 2000
Microsoft Outlook Express	Microsoft Outlook forms	Microsoft PowerPoint	Microsoft Project
Microsoft Visual FoxPro	Microsoft Windows Messenger	Microsoft Windows NetMeeting	Microsoft Word
Microsoft Works	MS Office 2000, XP Professional	MS Office 2000, XP Standard	Netscape Mail
Netscape Navigator	Novell GroupWise	Novell Ximian Desktop	Novell Ximian Evolution
OfficePro2000	OSAF Chandler	Print And View Reports	Raindance Web Conferencing Pro
SLIDE/Swedge	Sun StarOffice Base	Sun StarOffice Calc	Sun StarOffice Impress
Sun StarOffice Writer	SunForum	WebEx Meeting Center	Yahoo! Messenger

Infrastructure Applications Overview





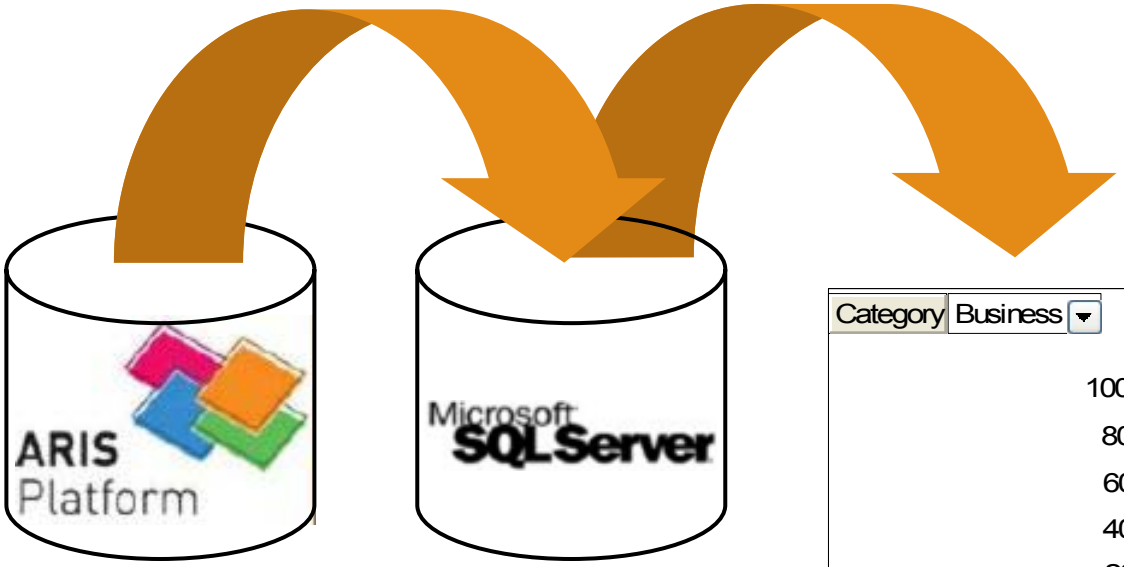


Legend

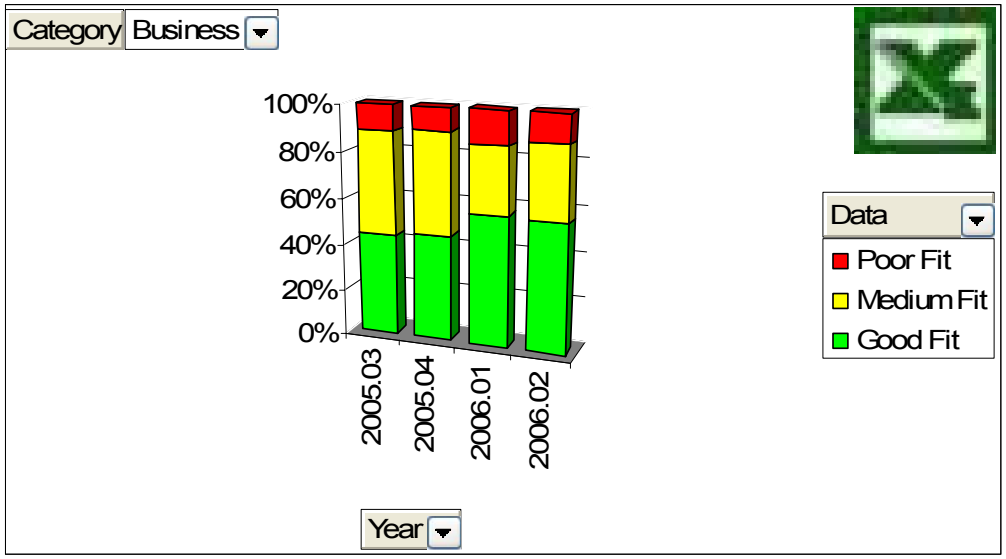
- Application in use
- Application not in use
- Detail model attached (*Assignment*)

Application Portfolio Management

Extract application data from ARIS and populate data mart



Maintain history in data mart



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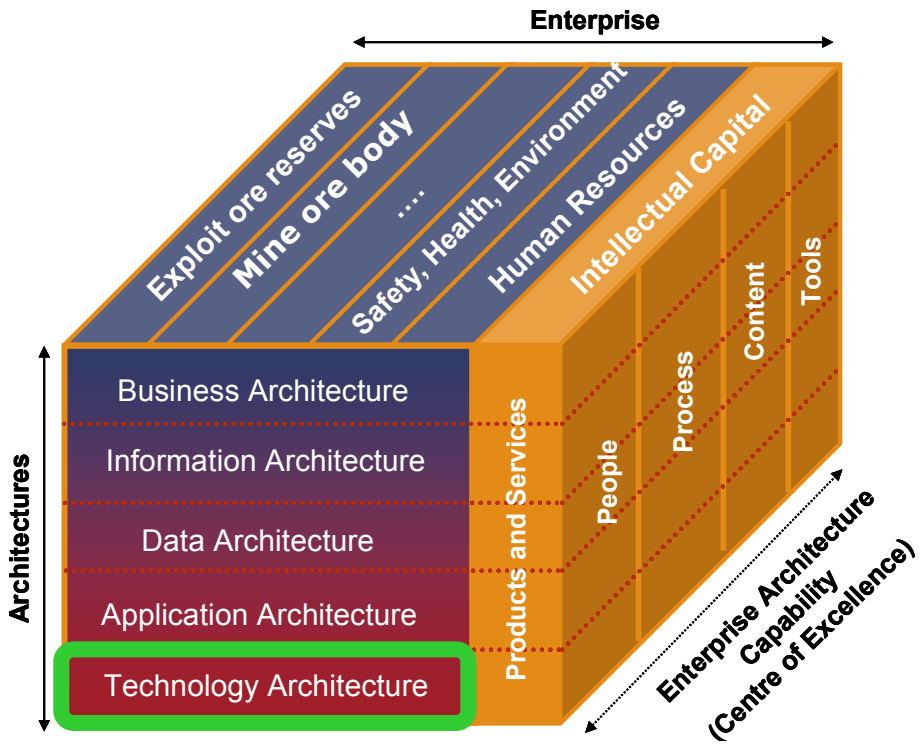
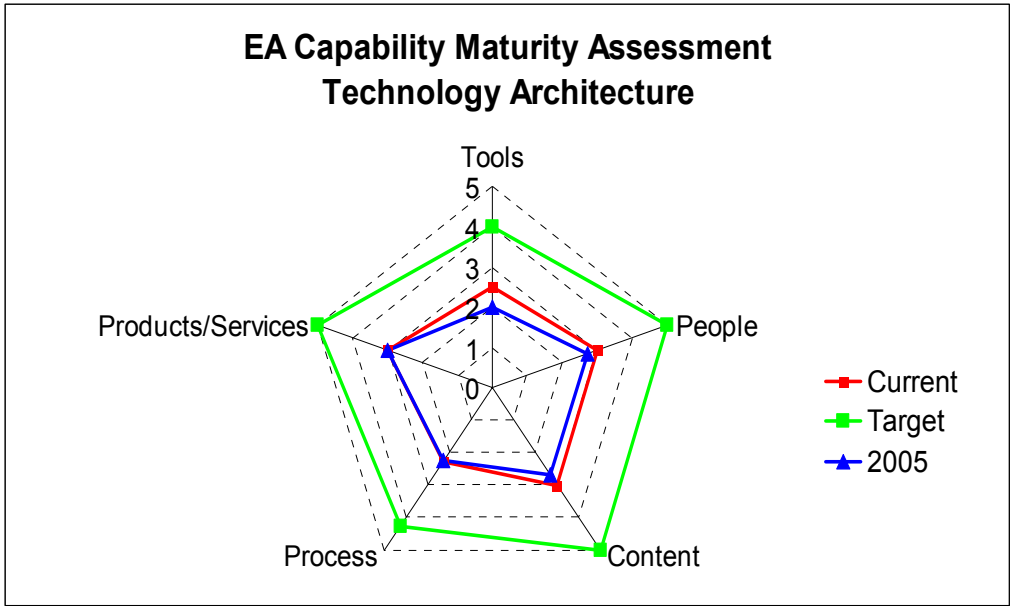
Technology Architecture





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Server Locations Model

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Real IRM Solutions (Pty) Ltd
2006

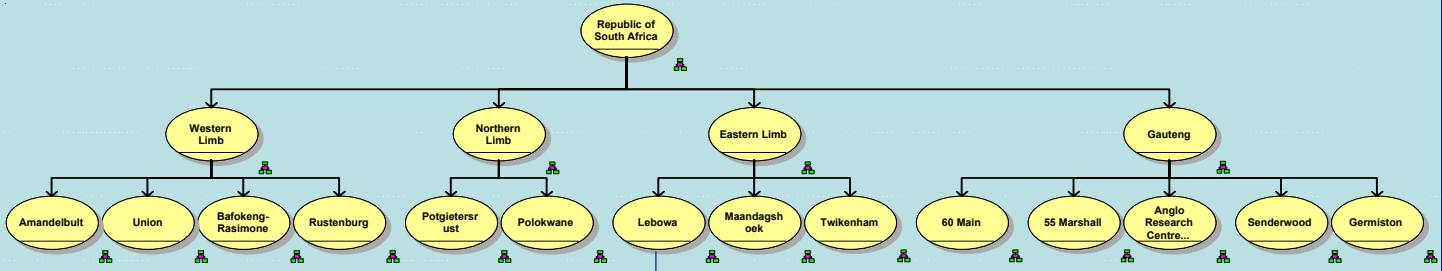
29 May 2006
Version 00.00

Server List View

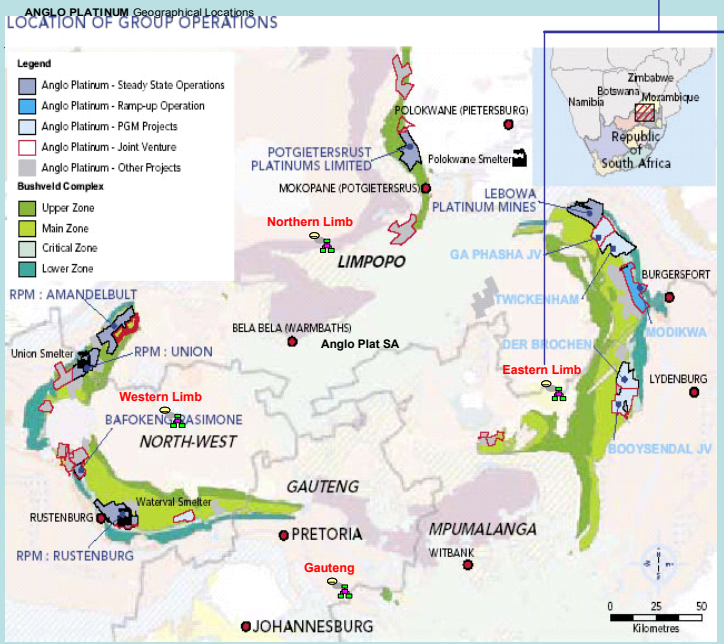
100-IS-S01	100-OFF-S01	Advanced Help Desk	AMSTECH	AMSTECHDATA
ARCTESTSERVER1	BL2000 # 1	BL2000 # 10	BL2000 # 11	BL2000 # 12
BL2000 # 13	BL2000 # 14	BL2000 # 15	BL2000 # 16	BL2000 # 17
BL2000 # 18	BL2000 # 19	BL2000 # 2	BL2000 # 20	BL2000 # 21
BL2000 # 22	BL2000 # 23	BL2000 # 3	BL2000 # 4	BL2000 # 5
BL2000 # 6	BL2000 # 7	BL2000 # 8	BL2000 # 9	BVCONTROL-SAP1
Cost Management System - projects	CS 500 # 1	CS 500 # 2	Documment Management	EIS
EMPEROR	ENG_Station	EXTRAS	Financial Planning	GETAFIX
GMMS	Housing	Intranet	Intranet Interfaces	Knowledge management
LEBOWATEST1	LUTHLORIEN	MANAGDESK	MIS	NETCARE911
OZYMANDIAS	Platinum Health	Policies & Procedures	Provident Fund	RASSIE
RIVENDELL	RSTEST	S_ABULT_MTS	S_AMS_EDA	S_ARC_01
S_ARC_RAS	S_ARC_SD	S_BRPMS1	S_CITYBANK	S_HEX_02
S_HEX_04	S_HEX_05	S_HEX_RAS	S_Hex_TNA1	S_HEX_TNA1
S_Hex_TNA1!	S_LEB_MTS	S_Leb_TNA1	S_LEB_TNA1	S_PPL_PAY
S_PPL_TNA1	S_RPM_02	S_TDSQL	S_UNION_TNA1	SABU01
SABU03	SABU04	SABU07	SABU10	SABU11
SABU14	SABU19	SABU20	SABU22	SABU23

Server Locations

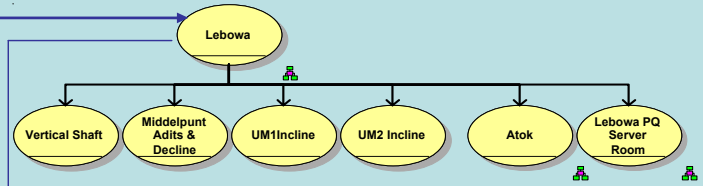
ANGLO PLATINUM Organizational Chart



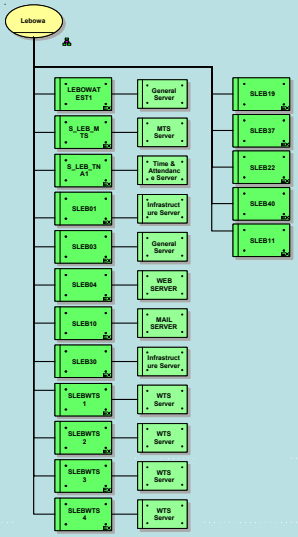
ANGLO PLATINUM Geographical Locations



EASTERN LIMB:
Lebowa Organizational Chart



Lebowa Servers

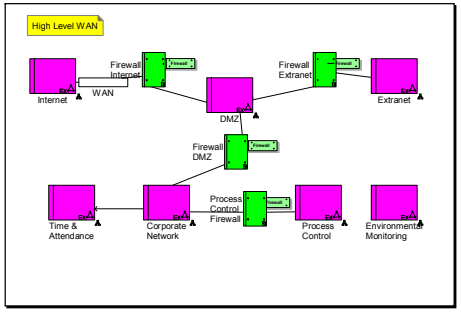


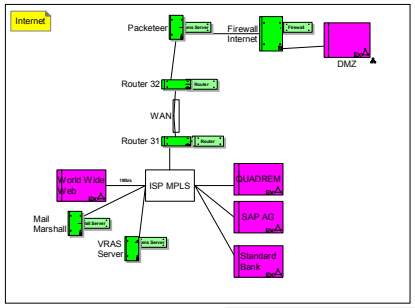
Lebowa Network Topology

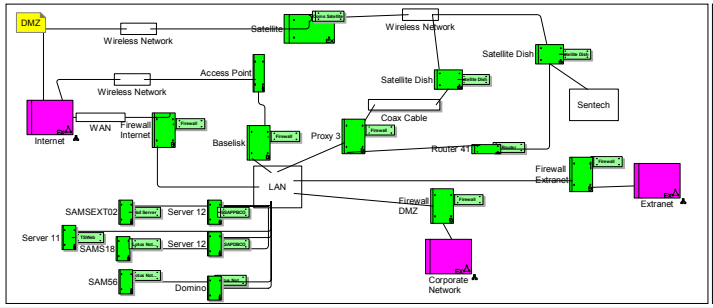
Legend

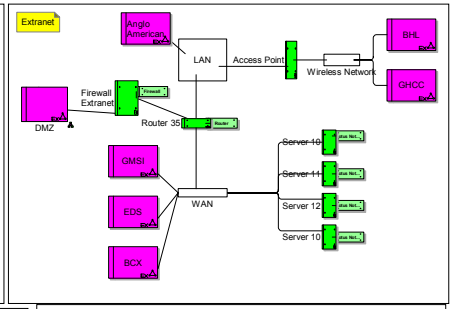
Detail model attached (*Assignment*)

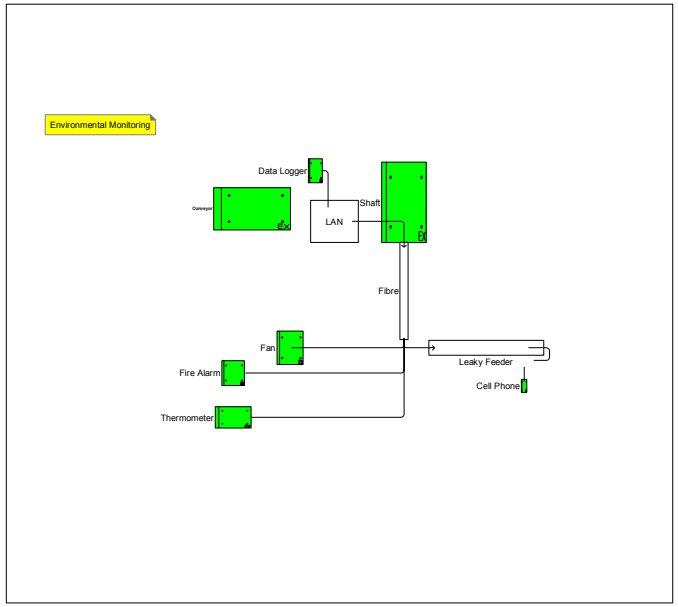
Network Architecture

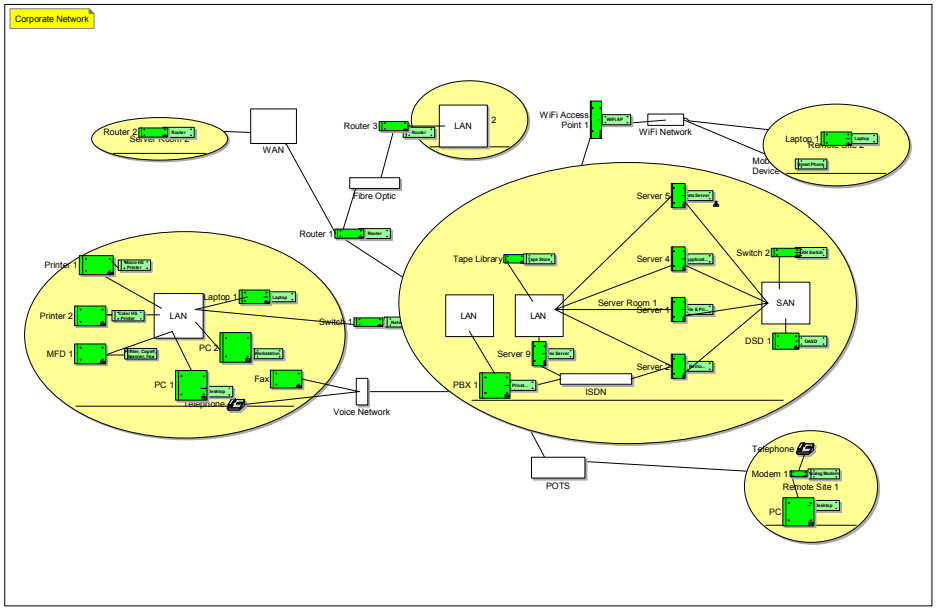


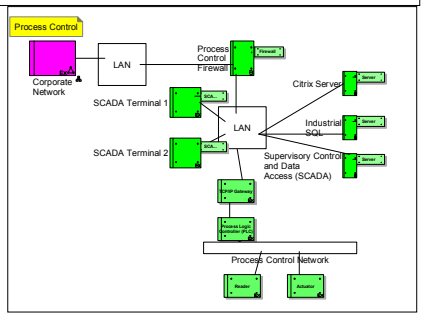


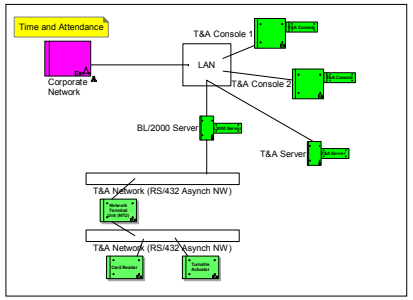












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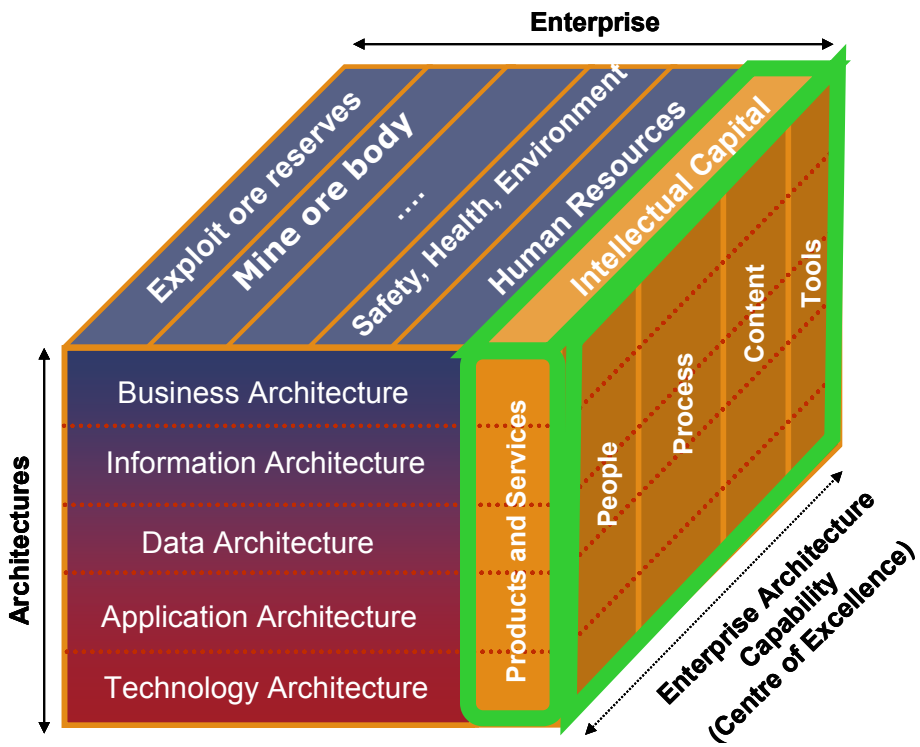
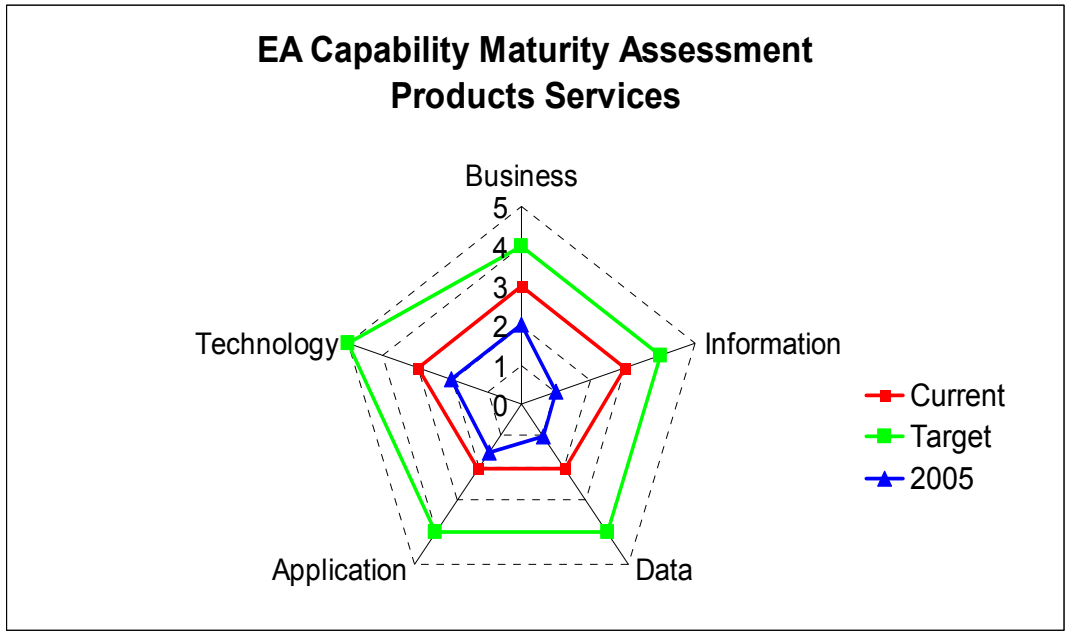
Products and Services





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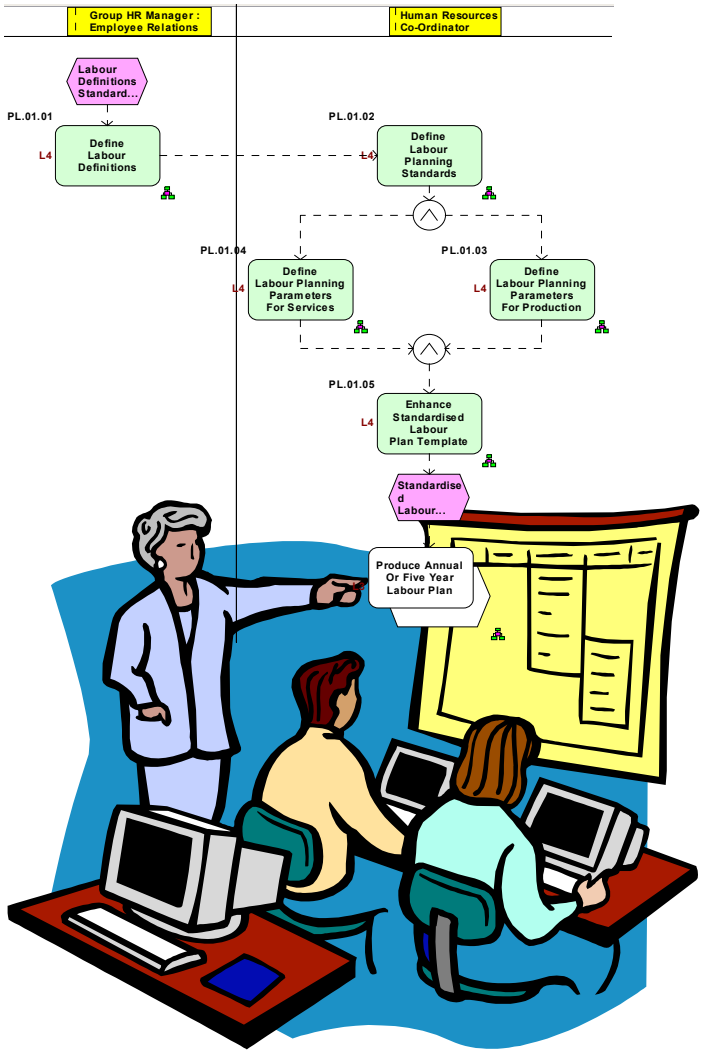
Process based Business Training

1. Generating Swimlane views for training to support role-based training

2. Business process models used as basis to prepare training material

3. 500 employees trained on SHE using business process models



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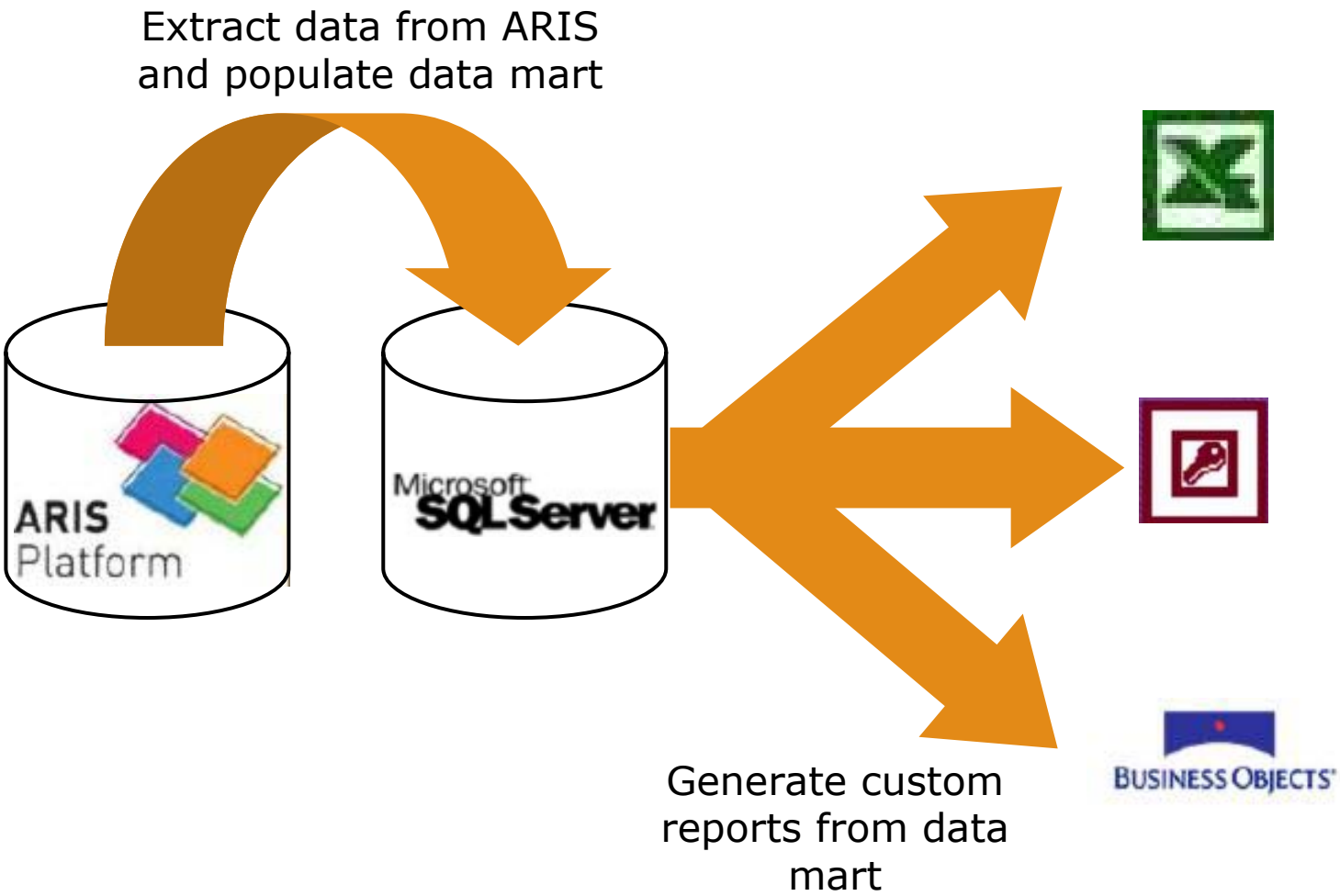
Utilities - Analytical Reporting



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Agenda

1. **The Story so far**
   - Drivers for change
   - Architectural concepts
   - EA Practice Establishment

2. **Deliverables and Business Successes**
   - Maturity Model
   - Business Process Models
   - Information Models
   - Data Models
   - Application Models
   - Technology Models
   - Products & Services

3. **Governance**
   - Architecture Forum
   - Stage Gates

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   - Training

5. **The Way Forward**
   - Governance
   - Dashboard

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The Way Forward - Governance

Architecture Forum

MANDATE

The Architecture Forum serves as the body that will direct, co-ordinate and recommend the organising logic for business processes. It will direct and control the architectures relating to information, data, applications and technology, captured in a *set of principles, policies, guidelines and standards* to achieve desired business and technical standardisation and integration

PRINCIPLES

- To reduce ICT complexity.
- To drive information quality and accuracy at source
- To standardise processes and systems.
- To stabilise existing systems by promoting standardisation.
- To review all ICT investments in the light of centrally determined standards and procedures.
- To ensure compliance to target architectures.

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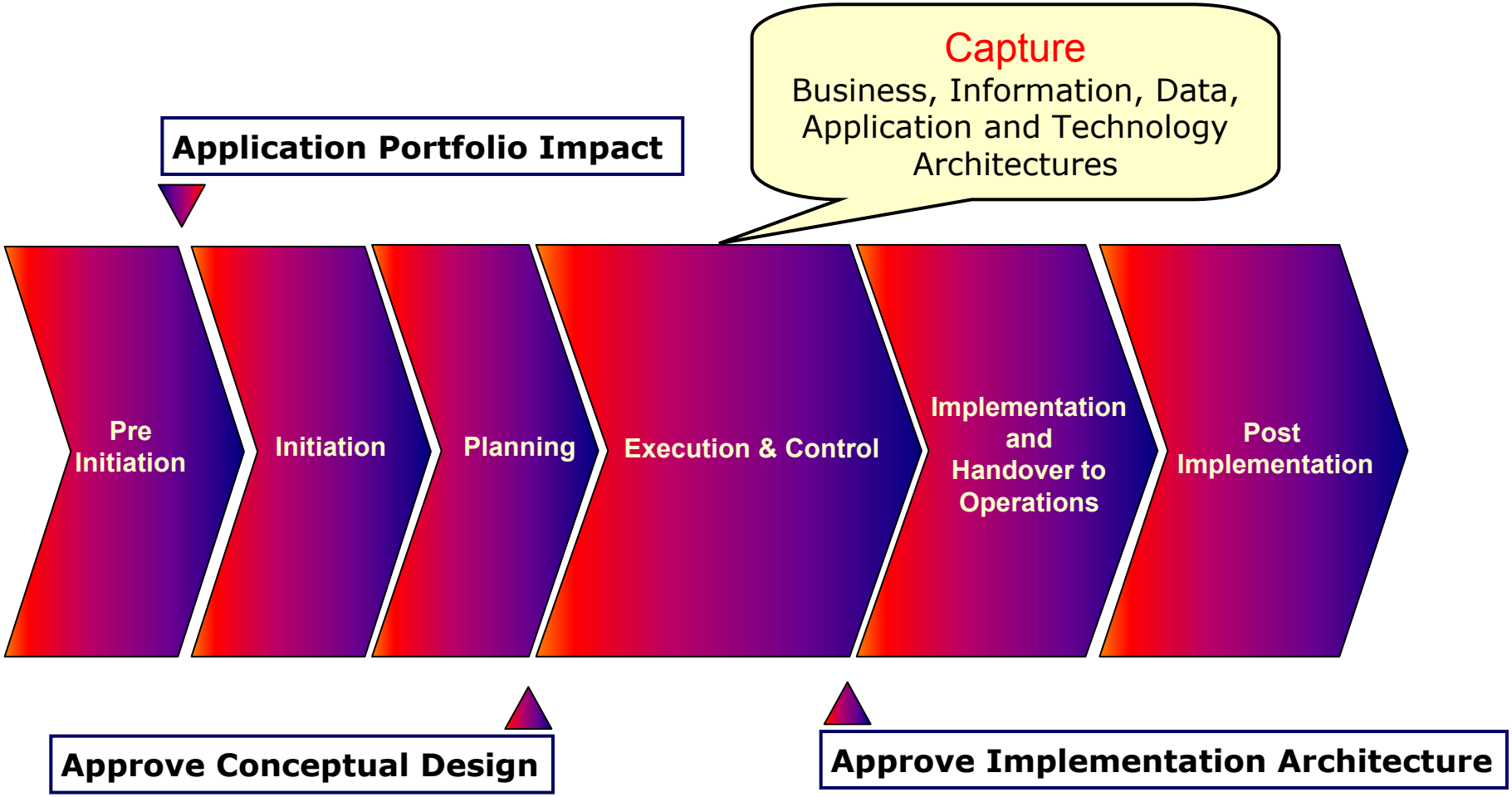
Project Life Cycle – Stage Gates



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The Way Forward - Governance

Architectural Requirements per Project

1. Complete level 3,4 and 5 sub-process, activities and work-steps as appropriate
2. Capture Information requirements per process
3. Capture application architecture and link to data, information and processes as appropriate
4. Capture technology architecture required to support the application and link to applications as appropriate

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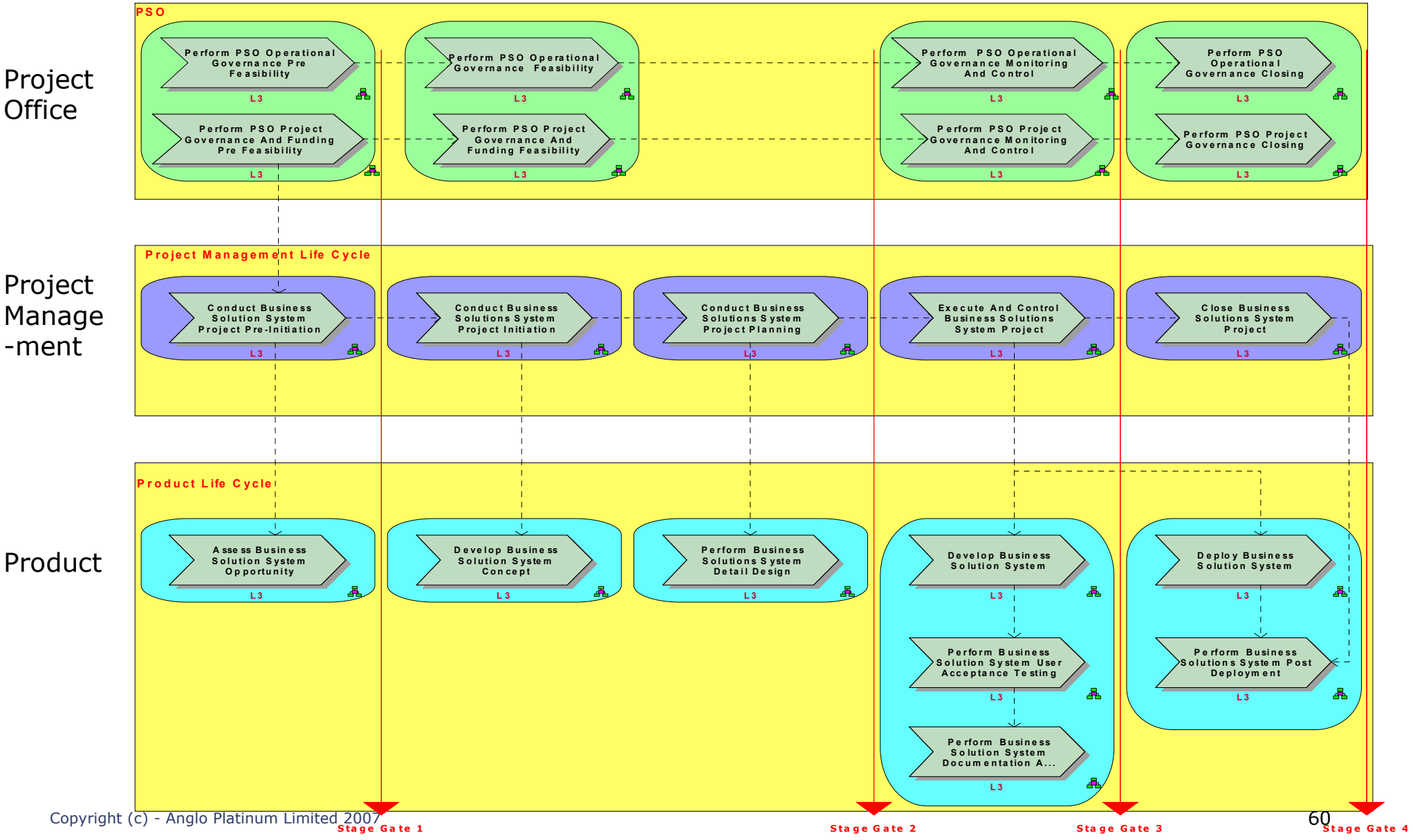
Project Process Model



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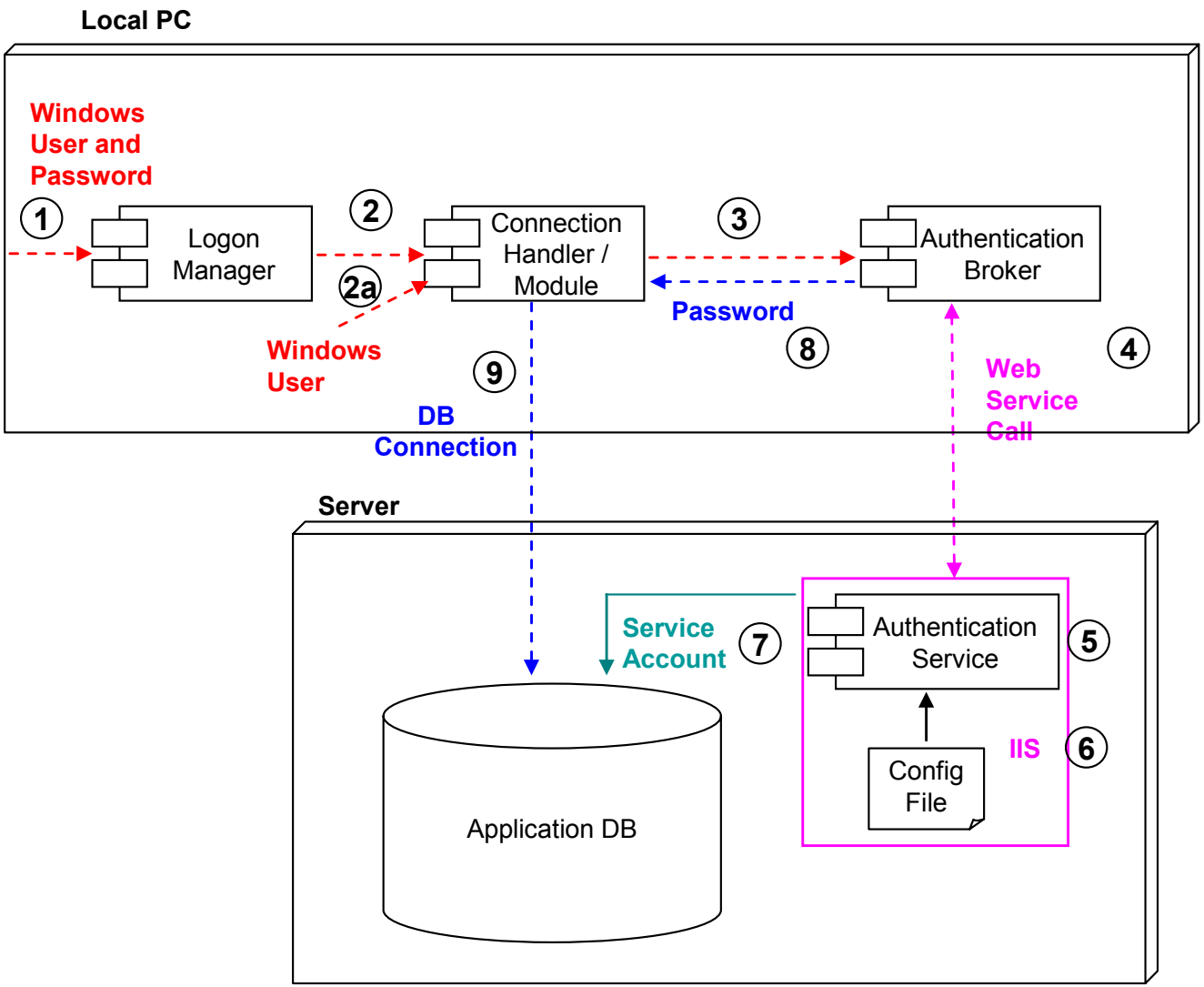
Project Example – Generic User Authentication



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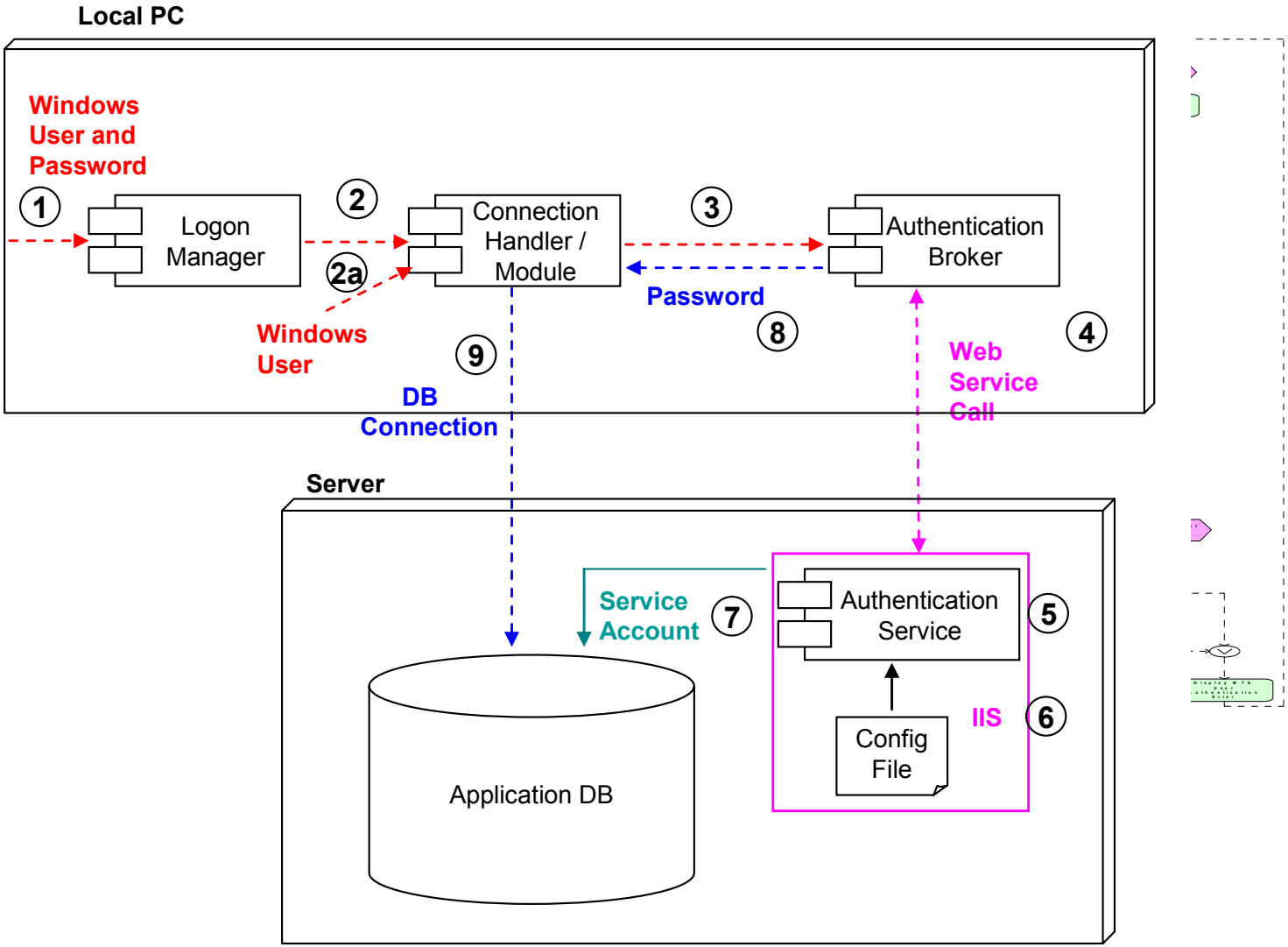
Generic User Authentication captured as Model



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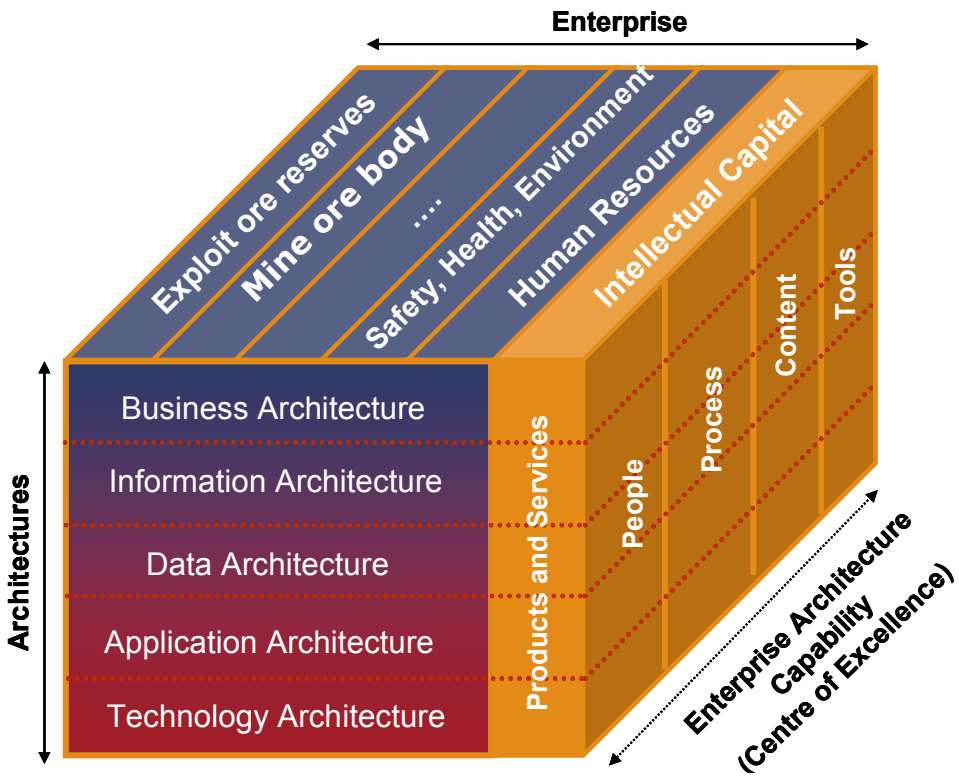
Product Focus



1. Understand who are the customers of EA
2. Customers require products not models
3. Understand what products they require from EA
4. Deliver products according to customer requirements

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Value Sells

1. Only institutionalise EA once you have proven the value thereof
2. Business will adopt approach if they can see the value
3. Opportunities will open up once there is value

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Sustain EA

1. Run a central EA office to manage the evolvement of EA in order to sustain
2. EA is an ongoing initiative – it is not a project
3. EA requires commitment and effort

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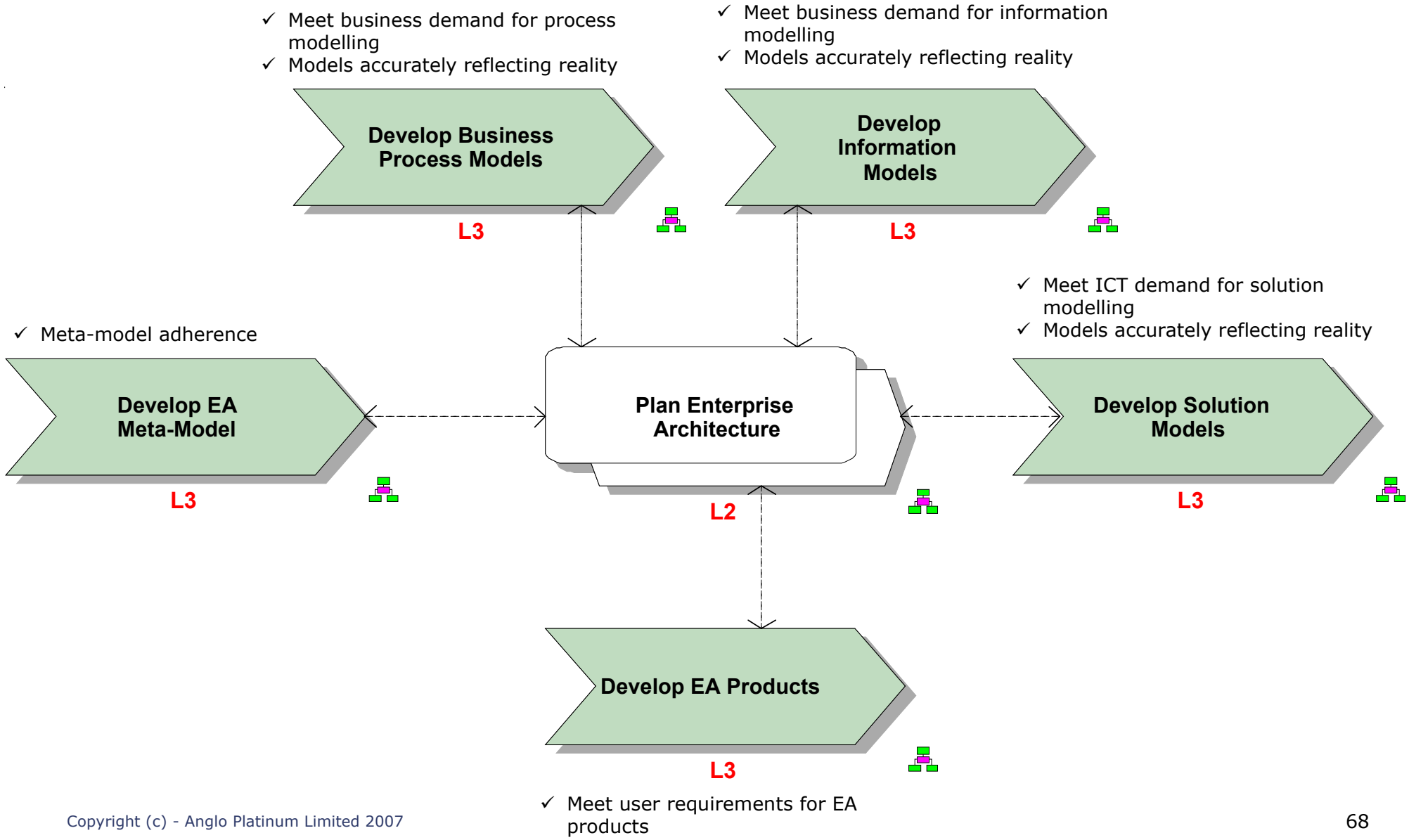
Develop Enterprise Architecture KPIs



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Develop Business Process Models KPIs

KPI	Freq	Source	Green	Amber	Red
Meet business demand for process modelling	Monthly	ICT Project Plan	More than 90% of models approved and published in the production EA repository according to plan.	More than 75% of models approved and published in the production EA repository according to plan.	Less than 75% of models approved and published in the production EA repository according to plan.
Models accurately reflecting reality	Monthly	Progress Reports	Less than three approval cycles/model. Approval performed by SMEs.	Less than four approval cycles/model. Approval performed by SMEs.	More than four approval cycles/model. Approval performed by SMEs.

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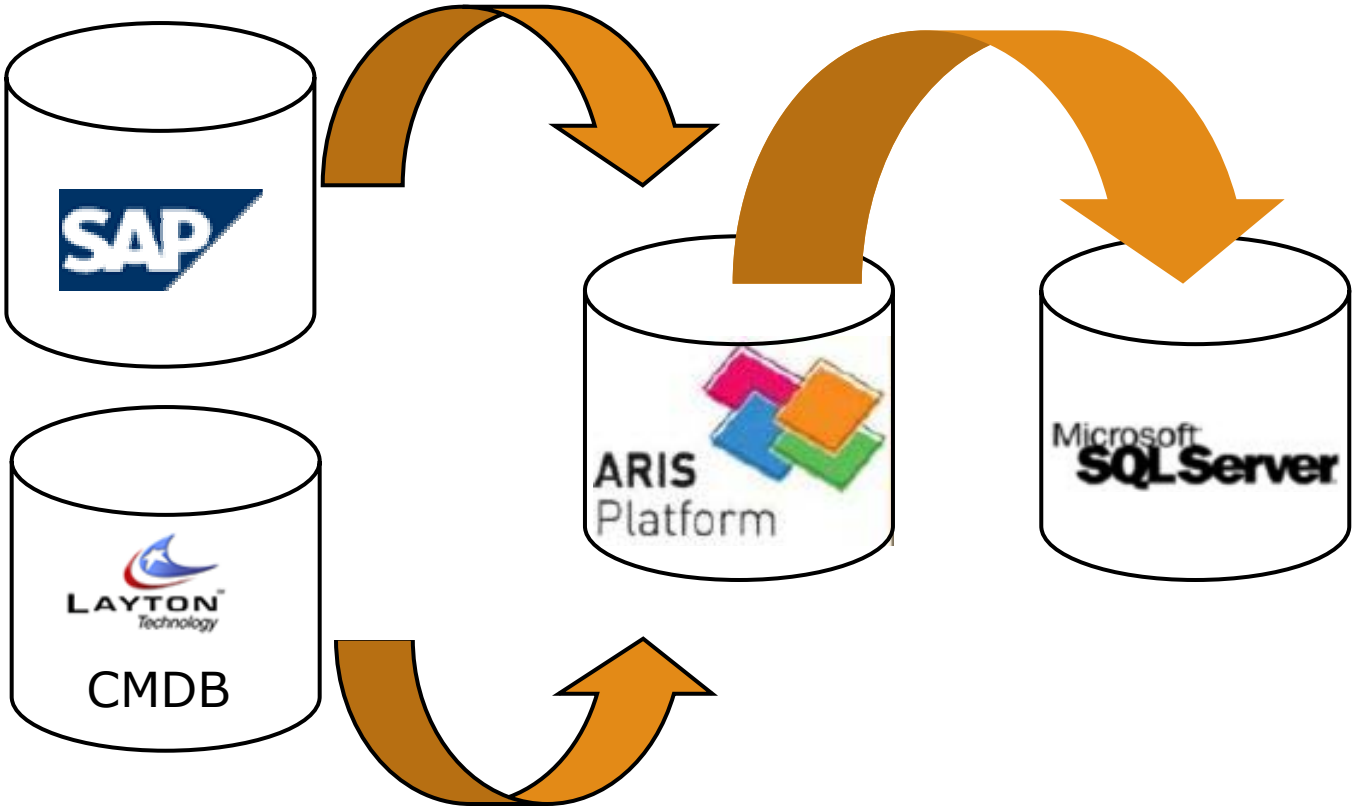
Utilities – Automated Product Interfaces



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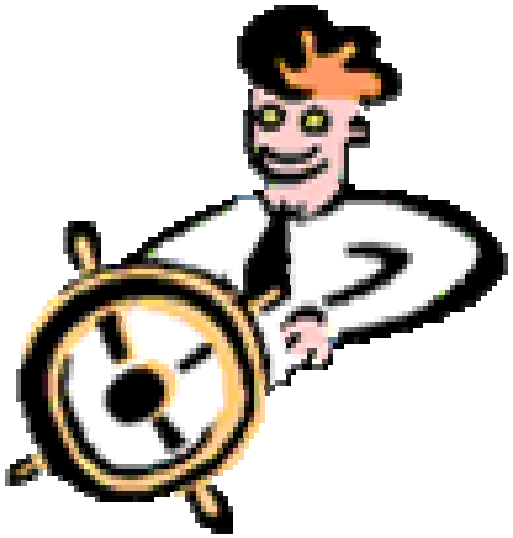
Way Forward

Projects

1. Supply Chain SAP Functional Design Document
2. FI & PP SAP Functional Design Document
3. Supply Chain Intelligence
4. Procurement & Capital Management
5. Talent Management



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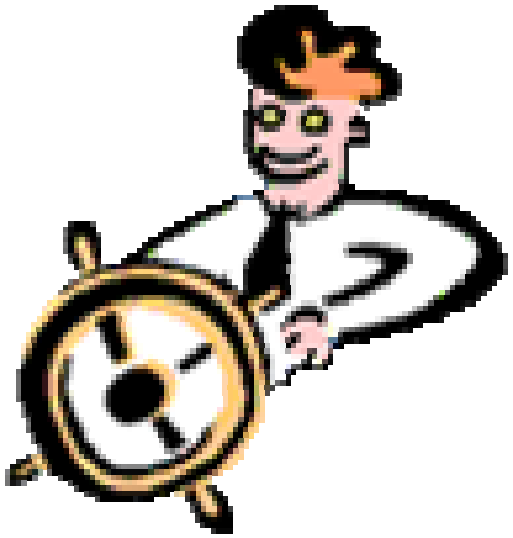
Way Forward

More Projects

1. BI Processes
2. Master Data Management key to support Data Quality and hence to provide quality Information e.g. SAP MDM
3. Process Control Technology Architecture
4. Underground Mining measurement and control networks
5. Add tools and reports e.g.
   - Application Portfolio Management
   - Information Architecture modeling



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Enterprise Architecture Practitioners Conference

March 11-13, 2007
Arabella Sheraton Grand Hotel, Cape Town, South Africa

Thank you

Enterprise Architecture at
Anglo Platinum
-
One Year Later

Presented by:
Steve Rasmussen
CTO Anglo Platinum

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