

BI Delivery – Dashboards , Prompts & Reporting Design



Prepared By

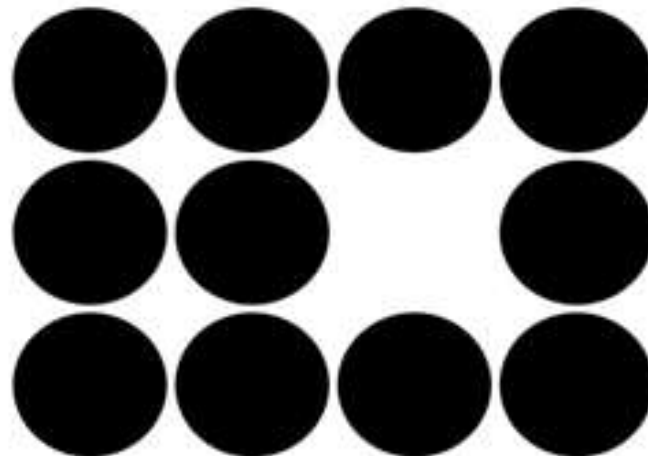
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Prepared for

IBM® Business Analytics User Group
Meeting

8th December 2011



Agenda

- **Lend Lease:**
 - Business Overview
 - BI Environment – Quick Facts
- **Dashboards:**
 - Delivery
 - Design Principles
 - Blocking & Scrolling
 - Controls
 - Performance
- **Thinking Outside the Square:**
 - Packs & SDK
 - Job Control
 - Report Prompts
 - MDM / Mapping



**Technical info:
Look out for the
Geek**

Lend Lease Business Overview – Quick Facts



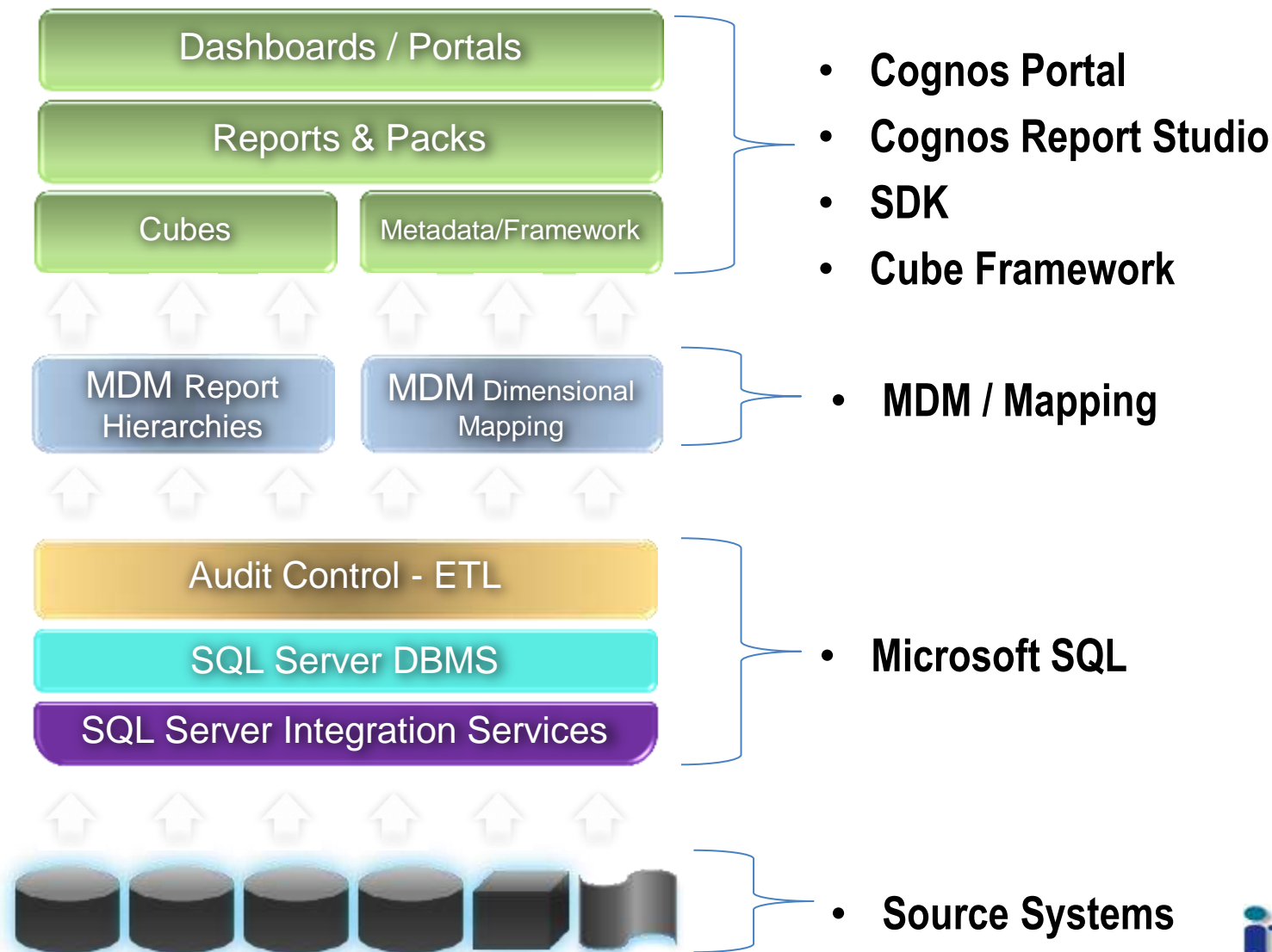
Retirement Living (RL) & Aged Care (AC)

- Largest owner operator of senior living within Aust.
- Locations: Aust & NZ
- Employees: 3000
- RL: Villages: 70, Units 12,740
- AC: Villages 30, Residents 2,318

Lend Lease (world wide)

- Construction & Projects
- Locations: World Wide
- Employees 17,000
- Projects: 10k
- Funds Under Management: \$12.9b

Lend Lease BI Environment



DASHBOARDS

Successful BI Team Requires

1. Technology Team: Technology Facing (Focus on DW & Reports)
2. Delivery Team: Customer Facing

Approach:

- Push Strategy for Dashboards (in your face).
- Launch reports & Apps Dashboards
- Common Staging platform
- Error Logs: prompt follow-up to resolve issues
- User Approach:
 - Train all users up front
 - Utilise online iDocs (Documents Measures & Business Rules)

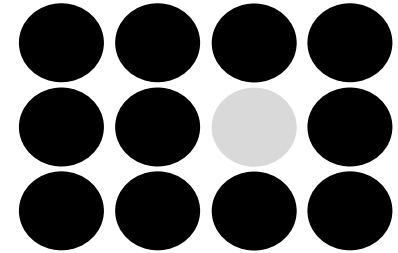
Dashboards: Design Principles

Design Approach:

- ✓ Less is more
- ✓ Arrange carefully
- ✓ Use Simple objects
- ✓ Limit colours
- ✓ Tell a story with data (past present future)
- ✓ Drill Thru where possible

✓ Performance Goals:

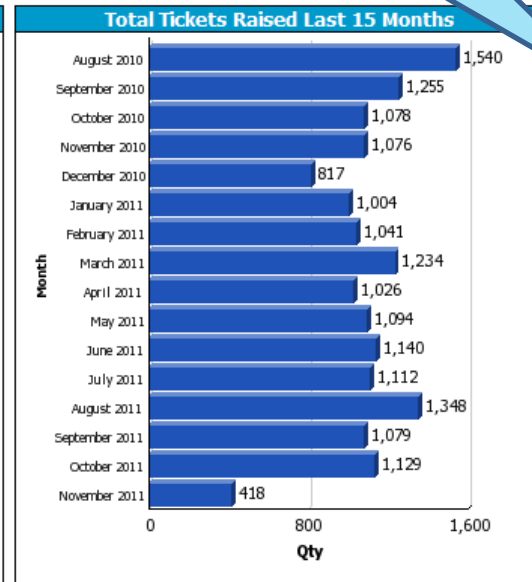
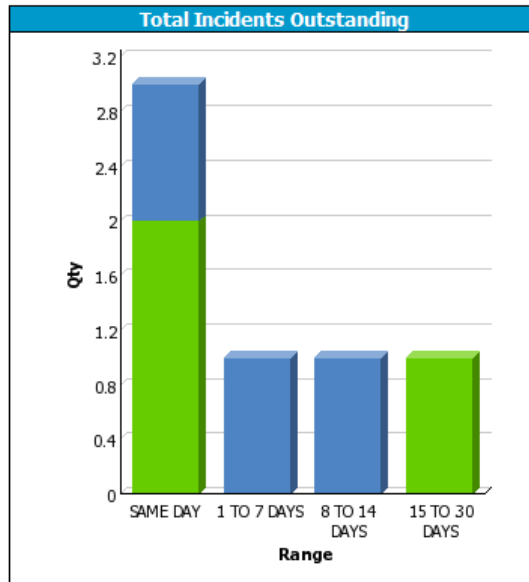
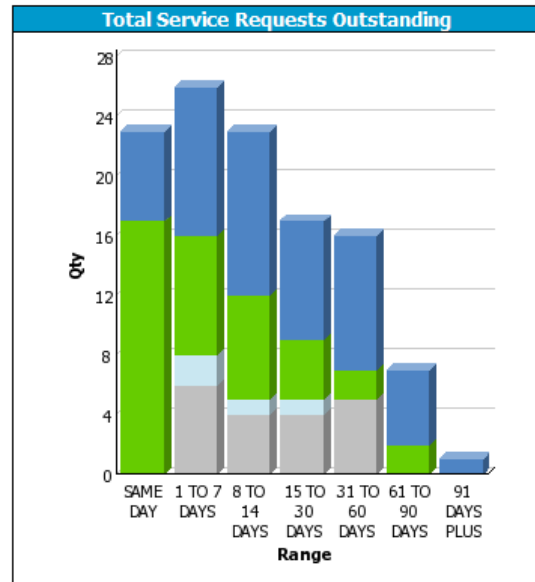
- ✓ Dashboard Refresh; < 2 sec.
- ✓ Report Runtime; < 20 sec
- ✓ Data Source Single source where possible



Dashboard: Design Principles Choice of Layout

Navigation to
"Report Box" &
other Apps

ServiceDesk Dashboard



Lend Lease

- [Report Box](#)
- [Run Jobs](#)
- [PNL Report](#)
- [Management Pack](#)

Last Updated:
11/11/2011 11:06:45 AM

Tickets Unassigned
42

Incidents Outstanding
6

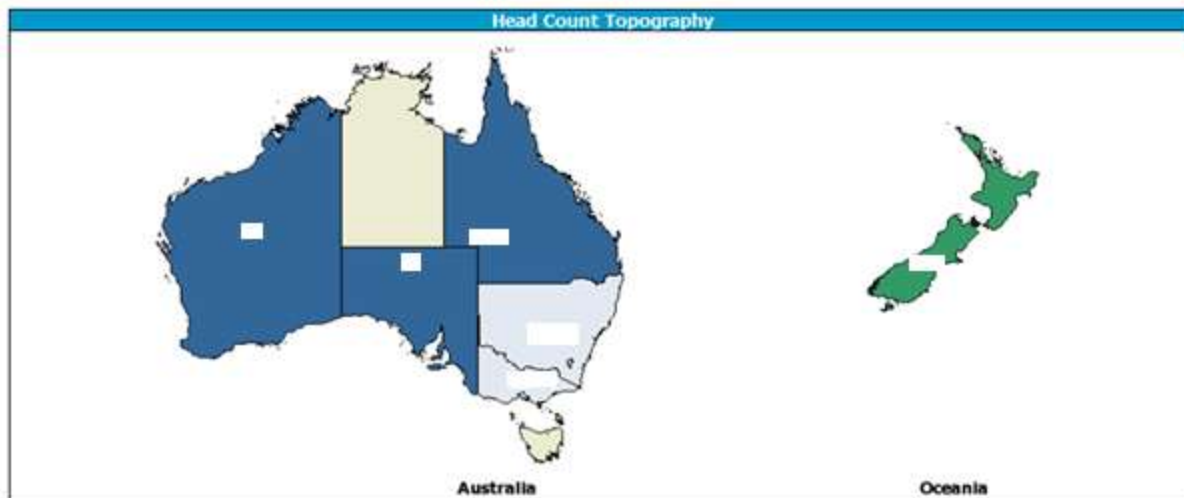
Service Requests Outstanding
113

The rule of
'three'

Exception on
drill thru

Dashboard: Design Principles Choice of Objects

Human Resources



Overtime Worked

Business Unit	Overtime %
AGED CARE	
DEVELOPMENT	
HEAD OFFICE	
MANAGEMENT SERVICES	
NZ	
RETIREMENT VILLAGES	

- Lend Lease**
- #### Head Count Reports
- [By Business Units](#)
 - [Movements](#)
 - [Organisation Structure](#)
 - [Physical Location](#)
 - [Payroll Leave Liability](#)
 - [Dimension Manager](#)

Head Count by Organisation Structure

Data as at the end of: October

Level 1	Emp Type	Head Count FTE							FTE Home
		Head Count	Full Time	Part Time	Casual	Parental	Fixed Term	Other	
AC	SALARY								
	WAGES								
CORPORATE	SALARY								
	WAGES								
DEVELOPMENT	SALARY								
	WAGES								
NEW ZEALAND	SALARY								
	WAGES								
VO	SALARY								
	WAGES								
	SALARY								
	WAGES								
Summary									

Workforce Ratios

FT Ratio	%
PT Ratio	%
Casual Ratio	%
Wages Ratio	%
Salary Ratio	%

Last Updated:
10/11/2011 7:52:12 AM



Dashboard: Design Principles

Use of Standards



















Last Updated
Details

iDocs Help
Buttons

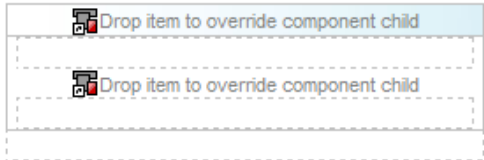
Images added
sparingly

CRM DASHBOARD

Last Updated : Nov 11, 2011 1:06:34 AM

	Information	NEW SALES					
		LW	WTD	MTD	YTD	LY	
	Inbound Calls	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	
	Outbound Calls						
	Initial Enquiries						
	Gross Reservations						
	Expressions of Interest						
	Contracts UnConditional						
	Contracts Conditional						
	Actual Settlements						
	Cancellations - Gross Reservations						
	Cancellations - Expressions of Interest						

Global Templates
used via layout
components



Drill Thru's

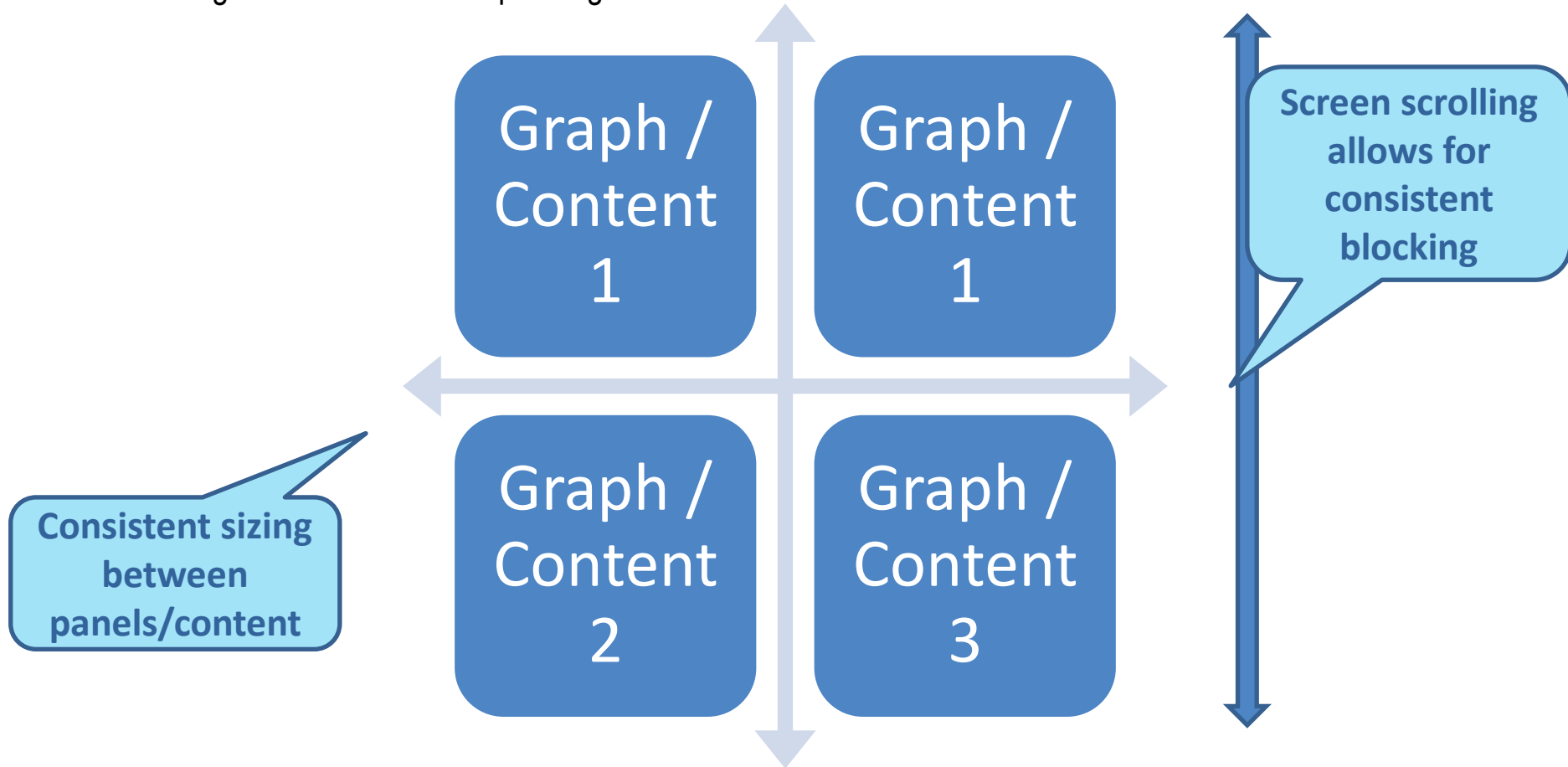
Access to pre
created cube
views

Dashboard Scrolling & Blocking

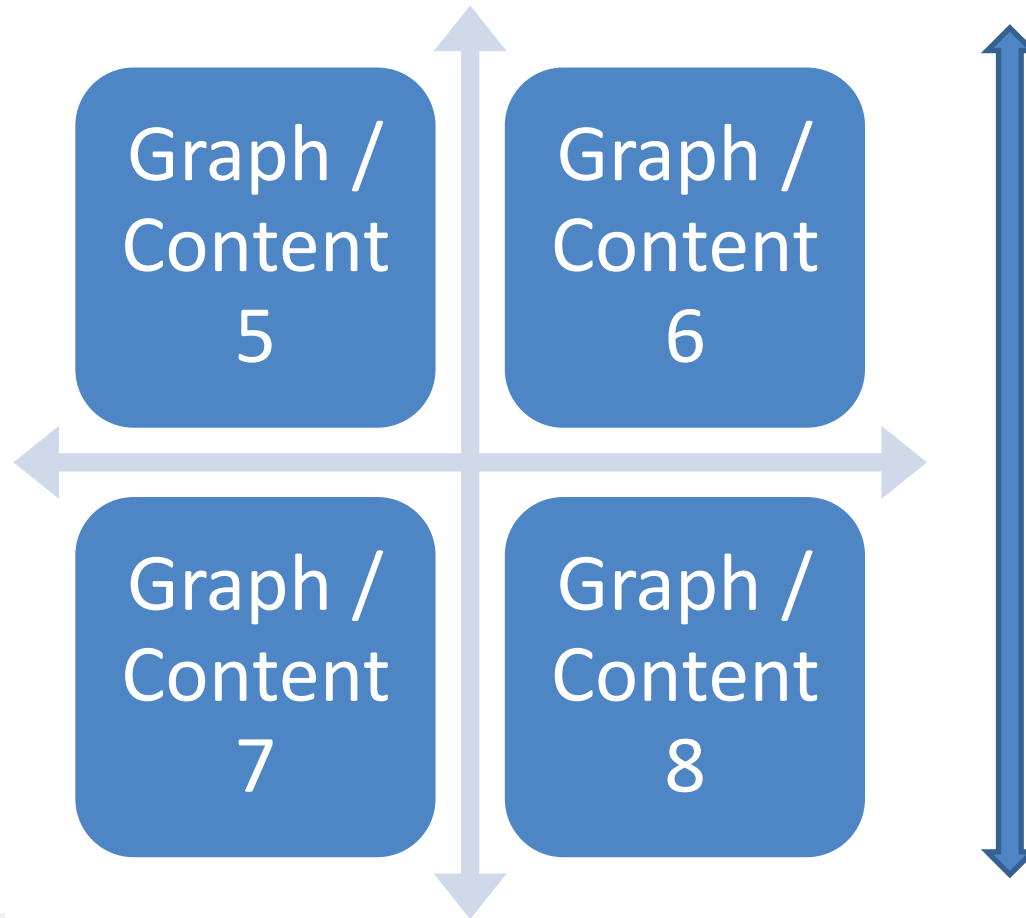
Screen Real Estate - "Blocking"

When the users scroll all dashboards are designed so sections are grouped together and form a screen panel.

Vertical navigation over horizontal panning works best



Dashboard Scrolling & Blocking



Background Color	
Foreground Color	
Font & Text	
Font	
Horizontal Alignment	Center
Vertical Alignment	Middle
White Space	
Spacing & Breaking	
Text Flow & Justification	

The average screen size is a thing of the past so test on multiply monitors and resolutions that are common within your business.

Dashboard: Example of Controls

Add functionality

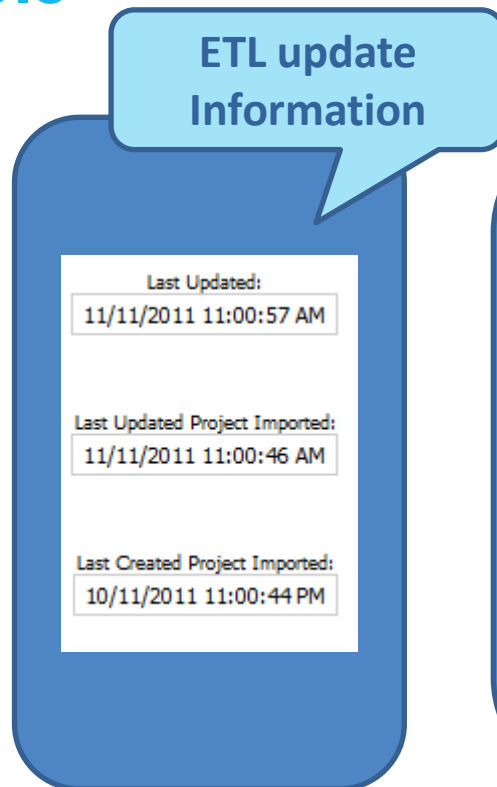


Lend Lease

Head Count Reports

- [By Business Units](#)
- [Movements](#)
- [Organisation Structure](#)
- [Physical Location](#)
- [Payroll Leave Liability](#)
- [Dimension Manager](#)

HTML buttons to "key" reports



ETL update Information

Last Updated:
11/11/2011 11:00:57 AM

Last Updated Project Imported:
11/11/2011 11:00:46 AM

Last Created Project Imported:
10/11/2011 11:00:44 PM



Finance - Development

Report Box

Name
User Reports
Info Guide - Running Reports
12 Month Financial Cashflow Statement
12 Month Financial Summary (Actual Forecast & Budget)
12 Month Financial Summary (Actual Forecast & Budget) With Period
12 Month Financial Summary (Budgets)
Account Transaction
Development Marketing Report
Jobpac Trial Balance Variance
Monthly Income & Expenditure (PnL) - Development

Enterprise Planning 8.4

Name	Actions
Development Applications(Testing)	More...
Documentation	More...
Training	More...
Planning - Aged Care	More...
Planning - Corporate	More...
Planning - Development	More...
Planning - Retirement Villages	More...
Planning - Retirement Villages Operations	More...
Planning - Sales	More...

User Guides

HTML buttons to "key" reports

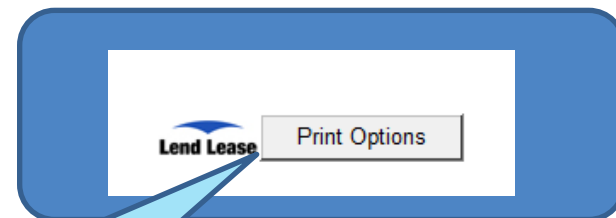
Public Folders Restricted



Lend Lease

[Report Box](#)

Public Folders Restricted



Lend Lease

Print Options

Allow Dashboards to be printed

Dashboard: Design Principles

- Past, Present & Future
- Show data that can be acted upon within the current period

Actual vs Budget							Today	Schedule vs Budget						
WED 30/11	THU 1/12	FRI 2/12	SAT 3/12	SUN 4/12	MON 5/12	TUE 6/12	WED 7/12	THU 8/12	FRI 9/12	SAT 10/12	SUN 11/12	MON 12/12	TUE 13/12	WED 14/12
104%	105%	104%	89%	110%	99%	100%	101%	101%	102%	100%	100%	100%	99%	100%
136	85	68	52	67	111	48	6							
100%	100%	100%	100%	100%	107%	107%	107%	106%	104%	101%	105%	102%	109%	102%
99%	100%	100%	100%	100%	95%	97%	87%	83%	102%	82%	79%	91%	85%	96%
85%	100%	100%	100%	100%	87%	99%	88%	91%	80%	83%	108%	81%	91%	80%
130%	276%	246%	241%	311%	124%	132%	101%	114%	110%	123%	114%	114%	112%	108%
101%	375%	400%	334%	381%	106%	105%	103%	104%	102%	86%	91%	96%	91%	96%
105%	169%	144%	106%	215%	99%	98%	97%	109%	112%	108%	115%	128%	129%	101%
103%	106%	122%	122%	127%	87%	87%	102%	73%	81%	92%	98%	63%	54%	75%
110%	122%	122%	55%	101%	90%	110%	97%	96%	101%	101%	103%	91%	96%	98%
111%	97%	87%	67%	82%	113%	110%	114%	124%	105%	100%	91%	112%	109%	111%
100%	81%	94%	76%	85%	92%	100%	106%	100%	98%	91%	91%	87%	94%	114%
106%	88%	91%	64%	74%	110%	97%	104%	104%	105%	101%	107%	110%	114%	111%
102%	65%	60%	43%	59%	95%	100%	90%	81%	85%	90%	90%	97%	93%	104%
148%	40%	36%	32%	38%	102%	103%	112%	117%	108%	102%	106%	96%	108%	101%
94%	27%	29%	26%	39%	92%	98%	108%	101%	105%	108%	96%	113%	110%	102%
106%	70%	65%	50%	69%	102%	104%	82%	87%	80%	84%	78%	84%	88%	93%
102%	251%	241%	203%	344%	100%	102%	101%	98%	97%	97%	105%	100%	96%	105%
103%	193%	186%	174%	278%	102%	99%	110%	97%	103%	110%	103%	96%	94%	92%
109%	198%	194%	174%	223%	97%	97%	99%	100%	95%	99%	97%	97%	102%	99%
113%	133%	129%	127%	133%	106%	105%	95%	98%	97%	108%	102%	93%	97%	97%
101%	145%	140%	125%	136%	96%	97%	102%	101%	97%	97%	99%	102%	102%	102%
104%	108%	103%	91%	114%	103%	107%	107%	107%	110%	100%	102%	108%	108%	108%
97%	101%	93%	84%	114%	97%	88%	99%	97%	91%	89%	95%	95%	95%	95%

Dashboard: Performance

- **PUSH:** Dashboards are pre-cached to return within 2 seconds
- **PULL:** Triggers allow Event Studio to refresh with data updates.

	Dashboard_ID	Dashboard_Code_Key	Dashboard_Description	LastUpdated_Date	Build_Flag
1	1	CRMDashboard	CRM Dashboard	2011-11-15 09:46:12.930	N
2	2	PayrollDashboard	Payroll Dashboard	2011-11-15 07:33:20.273	N
3	3	RosterDashboard	Roster Dashboard	2011-11-15 12:56:32.243	N
4	4	SalesPipelineDashboard	Sales Pipeline Dashboard	2011-11-15 09:46:56.190	N
5	5	CRMDashboardSalesRep	CRM Dashboard for Sales Reps	2011-11-15 09:46:35.480	Y
6	6	AgedCareDashboard	RCS Components on Aged Care Dashboard	2011-11-15 06:03:41.050	N

The screenshot shows the Event Studio interface. It features a toolbar at the top with various icons. Below the toolbar, there are two main sections: 'Event:' and 'Tasks:'. The 'Event:' section contains a task labeled '[Build_Fla...'. The 'Tasks:' section contains two tasks: 'Job : HR Dashboard ...' and 'Set : Dashboard Bui...'. Below these sections, there is a section titled 'Specify an event condition' with a sub-section 'Detail' selected. The 'Detail' section contains the text 'Use the Detail tab to create an expression that is applied to the values in the data source.' and an 'Expression:' field with the value '[Build_Flag] = 'Y''. A red circle highlights the expression field, and a blue arrow points from the 'Build_Flag' column in the table above to this field.

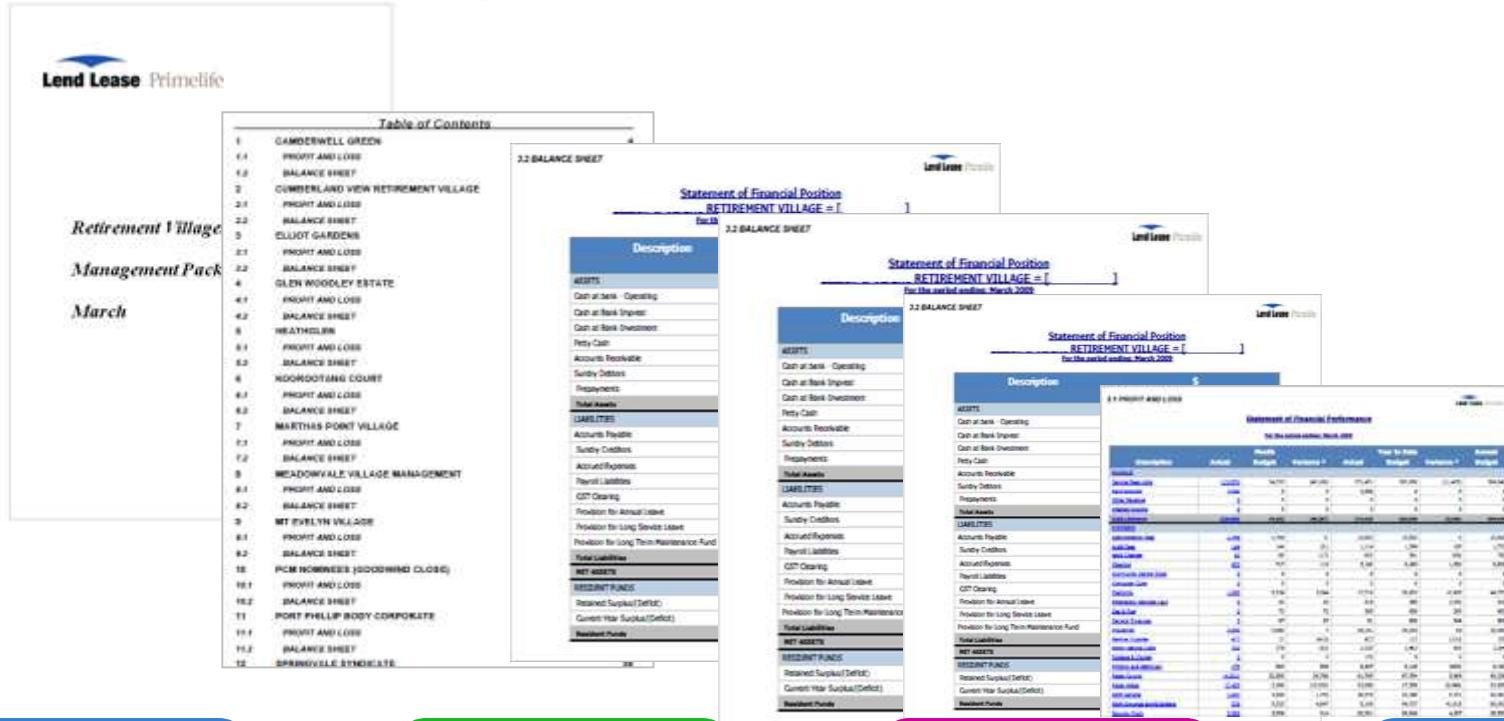


THINKING OUTSIDE

THE SQUARE

Management Packs

- The most effective piece of BI we have found



The collage shows a 'Table of Contents' for a 'Retirement Village Management Pack March' with 12 sections. It also displays several 'Statement of Financial Position' reports for 'RETIREMENT VILLAGE = []' for the period ending March 2009. The reports include sections for ASSETS, LIABILITIES, and RESIDENT FUNDS. A 'Statement of Financial Performance' report is also visible, showing columns for Actual, Budget, Variance, and Year to Date.

COLLECT

Cognos, MS Word, Excel content



RUN

Reports with Prompts via SDK



BUILD

Content into a PDF or Word Doc



DISTRIBUTE

Store using SharePoint &/or Email Pack

Management Packs Controls

- User controlled stored prompts
- Pack processes reports based on stored prompts.

PRIMETRUST SALES REPORTING PACK

These processes allow you to re-produce the PrimeTrust Sales Reporting Pack on request. There is one process which you can run:

Web - Sales RBD Sales Reporting Pack - (Approx <5 mins)

This process uses the current data within the Data Warehouse and produces the reporting pack. This process is not automatically run every night.

Reporting Period

Board Report Date Set To : 31-October-2011
Change board report date to : * Calendar_Description

Comments Pages

Comments currently : Enabled
Change comments to : Status_Label

These processes should **not** be run after 11pm, as they can clash with the normal overnight Data Warehouse updates.

[Run Jobs](#)

You will have one, or a number of jobs options to run. Please select the START button on the RHS of the sales pack option.



[Edit - View Management Pack](#)

The above link will take you to the intranet where you will see word documents like header or comments pages that might need editing. You will also view the completed pack in PDF.




Prompts

- Standard template components used
- Integrated with MDM, consumed **dynamically**


Cashflow Statement

This report uses different structures to provide a 12 summary as at a for the financial year selected.

Select The Financial Year:	Select The Division:	Report Sample:
<div style="border: 1px solid #ccc; padding: 5px;"><p>Select The Financial Year:</p><ul style="list-style-type: none"><input checked="" type="radio"/> FY 08/09FY 09/10FY 10/11FY 11/12FY 12/13FY 13/14FY 14/15FY 15/16FY 16/17FY 17/18FY 18/19</div>	<div style="border: 1px solid #ccc; padding: 5px;"><p>Select The Division:</p><ul style="list-style-type: none"><input checked="" type="radio"/> CONSOLIDATED<input checked="" type="radio"/> AGED CARERETIREMENT VILLAGESCORPORATE DEVELOPMENTMANAGEMENT SERVICES</div>	<div style="border: 1px solid #ccc; padding: 5px;"><p>Report Sample:</p></div>
<div style="border: 1px solid #ccc; padding: 5px;"><p>Select The Reporting Structure:</p><ul style="list-style-type: none"><input type="radio"/> 2009 Financial Year<input type="radio"/> 2010 Financial Year<input type="radio"/> Annual Report Consolidated<input type="radio"/> Balance Sheet Development<input type="radio"/> Balance Sheet RV<input type="radio"/> Balance Sheet RV IP Audit<input type="radio"/> Balance Sheet RV OPS National<input type="radio"/> Balance Sheet RV OPS NSW</div>	<div style="border: 1px solid #ccc; padding: 5px;"><p>Show Detail (To Account Level):</p><div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"><p><input checked="" type="radio"/> NO</p><p><input type="radio"/> YES</p><p style="text-align: right; font-size: small;">Deselect</p></div></div>	

Prompts – Date Relative

- Reports consume Date Relative Range (DDR)
- All data ranges are built daily as part of the overnight ETL process.



I want flexibility & control

Select The Report Period:

- * L14D - Last 14 Days
- LM-1TY - Last Month -1 This Year
- LMTY - Last Month This Year
- LPTY - Last Period This Year
- LQTR - Last Quarter (Financial)
- NY - Next Year
- ROLL12M - Rolling 12 Months
- ROLL15D - Rolling 15 Days
- ROLL15M - Rolling 15 Months
- ROLL24M - Rolling 24 Months
- ROLL2M - Rolling 2 Months
- ROLL36M - Rolling 36 Months
- ROLL3M - Rolling 3 Months
- ROLL48M - Rolling 48 Months
- ROLL6M - Rolling 6 Months
- ROLL7DTD-1 - Rolling 7 Days to Date -1 Day
- TMTY - This Month This Year
- TODAY - Today
- TPTY - This Period This Year
- TQTR - This Quarter (Financial)
- TYH1 - This Year - First Half Year
- TYH2 - This Year - Second Half Year
- YESTERDAY - Yesterday



Date Relative Range Prompting



- Update your SQL table via user functions that provide the 'Start' and 'End' date for the DDR used.

DateRelative_ID	DateRelative_Code	DateRelative_Description	DateRelativeStart_DateNumber	DateRelativeEnd_DateNumber
31	L14D	Last 14 Days	20111103	20111116

```
ALTER FUNCTION [dbo].[ufn_RELATIVEDATE_L14D_START]
(@DateTime DT_DATETIME)

RETURNS DT_NUMBER

AS

BEGIN
    DECLARE @DateNumber INT

    SET @DateTime = DATEADD(D, -14, @DateTime)
    SET @DateNumber = YEAR(@DateTime) * 10000 + MONTH(@DateTime) * 100 + DAY(@DateTime)

    RETURN (@DateNumber)
END
```

```
ALTER FUNCTION [dbo].[ufn_RELATIVEDATE_L14D_END]
(@DateTime DT_DATETIME)

RETURNS DT_NUMBER

AS

BEGIN
    DECLARE @DateNumber INT

    SET @DateTime = DATEADD(D, -1, @DateTime)
    SET @DateNumber = YEAR(@DateTime) * 10000 + MONTH(@DateTime) * 100 + DAY(@DateTime)

    RETURN (@DateNumber)
END
```

Note: Custom Internal data types used within DWH environment

- DateRelativeActualSettlement
- DateRelativeAvailableForSale
- DateRelativeAvailableFirst
- DateRelativeAvailableLast
- DateRelativeBuyBack
- DateRelativeCancelled
- DateRelativeClosed
- DateRelativeContractSigned
- DateRelativeDepositPaid
- DateRelativeExpectedSettlement
- DateRelativeHeld
- DateRelativeHeldExpiry
- DateRelativeLead
- DateRelativeMobile
- DateRelativeReOpened
- DateRelativeReserved
- DateRelativeReservedExpiry
- DateRelativeRoomCleared
- DateRelativeSustainability
- DateRelativeUnitEntry
- DateRelativeUnitExit

- Within Cognos framework model you will need to use a *Cartesian* Join
- A separate Date Relative Query will be required for each date field you wish to use Relative Prompting on

Incident_DateNumber >= DateRelativeInjuryIncident_Start_DateNumber AND
 Incident_DateNumber <= DateRelativeInjuryIncident_End_DateNumber



Outside the Box Job Control

Empower your users to import data from Source to warehouse using Job Control

Workflow	Enabled	Status	Type	Last Run	Duration	Steps	Active	Start
WEB - RV OPS Financial Pack - VIC and SA - Region 1	True	✓	W	17/11/2011 8:27:27 AM	155 Seconds	1		<input type="button" value="Start"/>
WEB - RV OPS Financial Pack - VIC and SA - Region 2	True	✓	W	17/11/2011 8:58:40 AM	228 Seconds	1		<input type="button" value="Start"/>
WEB - RV OPS Financial Pack - VIC and SA (Divisions)	True	✓	W	17/11/2011 9:16:37 AM	658 Seconds	1		<input type="button" value="Start"/>
WEB - RV OPS Financial Pack - WA	True	✓	W	15/11/2011 2:18:59 PM	123 Seconds	1		<input type="button" value="Start"/>
WEB - RV OPS Financial Pack - WA (Divisions)	True	✓	W	15/11/2011 1:13:37 PM	272 Seconds	1		<input type="button" value="Start"/>
WEB - RV OPS Financial Pack - WA Residents	True	✓	W	16/11/2011 11:53:51 AM	285 Seconds	1		<input type="button" value="Start"/>
Web - Sales RBD Sales Reporting Pack	True	✓	W	1/11/2011 2:18:16 PM	41 Seconds	1		<input type="button" value="Start"/>
Web - Sales Reporting Pack	True	✓	W	30/04/2010 3:01:00 PM	89 Seconds	1		<input type="button" value="Start"/>

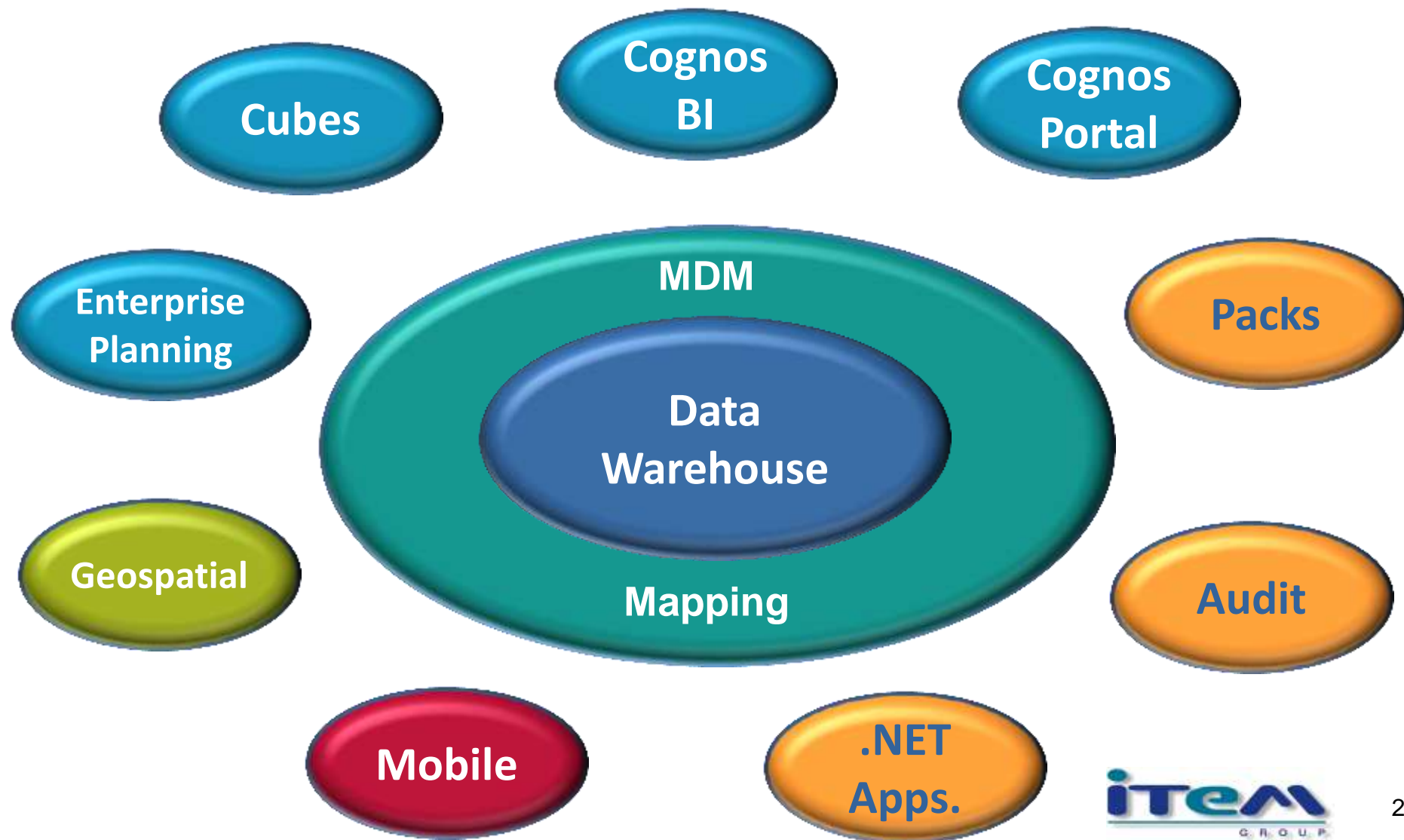


I want MY
data now

Custom .NET
screen using AD
security

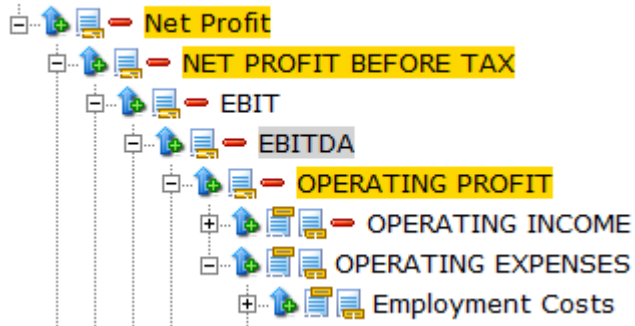
Typical MDM Components	Details	Consider
DATA MANAGEMENT		
Master Data	Centralise master dimensional data & push to applications	
Data Mapping	Roll-ups, consolidation, etc.	Consider
Hierarchy Data Mgmt	Financial Report Formats	Consider
Versioning	Versioning of master data	
Rule Based Validation	Data feed rules (not via ETL)	
Intelligence Mapping	i.e. Scrub, Match, Merge	
DATA GOVERNANCE		
Security	Dimension, data & hierarchy security	Consider
Error Logging	Controls, alerts, notifications, etc	Consider
Lifecycle/Workflow	Change management	
Issues Management	Manage issues & error logging	

MDM Consumption



MDM Hierarchical Mapping

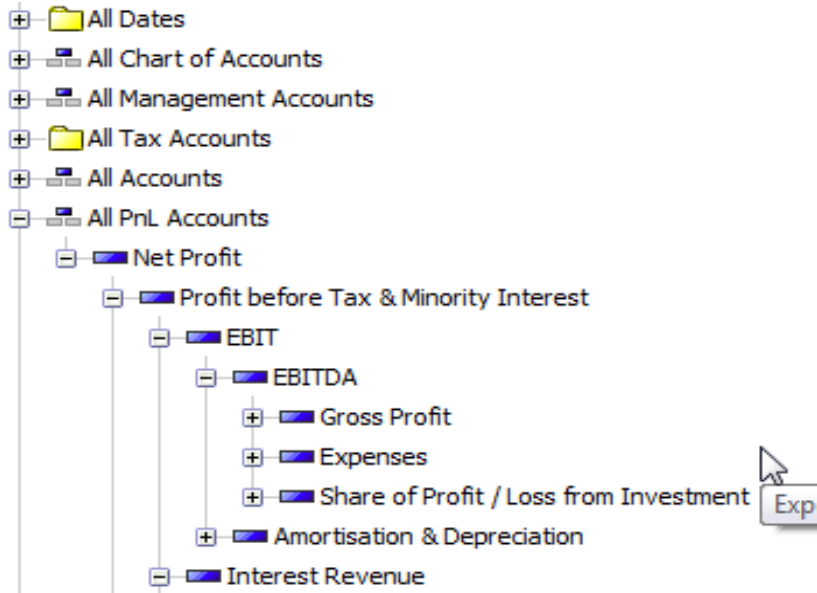
Profit And Loss Aged Care



Cognos Report

MONTH	DETAILS		YEAR TO	
Budget	Last Year		Actual	Budget
		<u>OPERATING INCOME</u>		
508,907	8,935,041	<u>Government Funding</u>	36,609,426	37,54
261,922	3,206,691	<u>Service Fees</u>	12,794,442	12,87
219,290	208,801	<u>Bond Retentions</u>	817,093	86
45,277	186,112	<u>Sundry Income</u>	446,372	18
35,396	12,536,644	<u>OPERATING INCOME</u>	50,667,333	51,471
		<u>OPERATING EXPENSES</u>		
681,466	7,427,593	<u>Facility Employment Costs</u>	34,771,382	33,22
545,536	548,124	<u>Catering Costs</u>	2,274,068	2,15
268,101	260,132	<u>Cleaning & Laundry Costs</u>	1,005,235	1,06
184,994	153,080	<u>Medical Supplies</u>	737,611	73
207,863	232,899	<u>Utilities</u>	922,538	83
440,433	346,148	<u>Repairs & Maintenance</u>	1,731,039	1,76
443,931	382,792	<u>Administration</u>	1,695,357	1,77
62,926	78,452	<u>Internal Costs</u>	197,438	25
35,250	9,429,219	<u>OPERATING EXPENSES</u>	43,334,668	41,795
100,146	3,107,425	<u>OPERATING PROFIT</u>	7,332,665	9,671
27,865	28,573	<u>Lease Payments For Investor</u>	113,653	11
		<u>Bond Association</u>		

Cognos Cube



Wrap up

- **Dashboards:**
 - Style:
 - Keep it simple
 - Limit colours & choice of objects
 - Performance: consider caching
- **Packs:**
 - Drives report usage
 - Top down drives BI usage
- **Prompts:**
 - Consider a standard format
 - Use mapping (MDM) as prompts
- **Process Management:**
 - Allow users to run DW updates
- **MDM:**
 - Consider, it's better than you may think



Questions



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