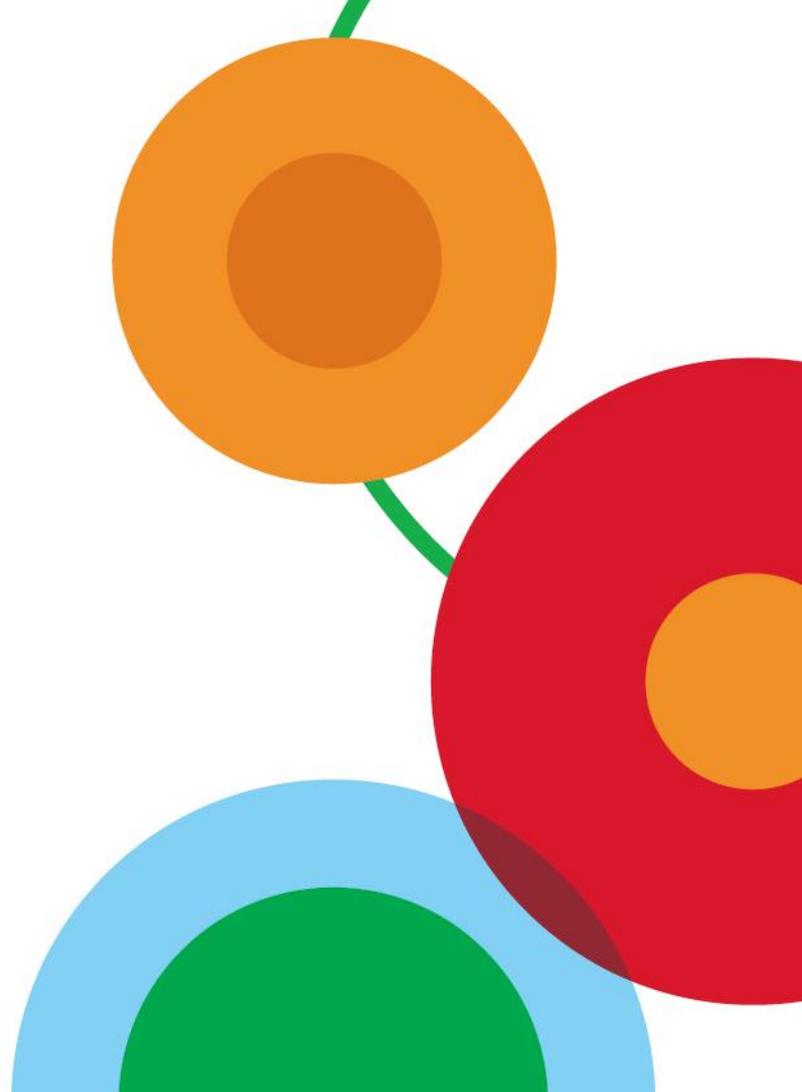


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The Happy Marriage of SPSS and TM1 at Australia Post

- **Armand Mizan**
- **Australia Post**



In This Session...You Will See...

- How the case for forecasting can be made
- How to integrate SPSS and TM1
- The solution overview and architecture for Australia Post
- The relative strengths of each product
- That thinking solutions, not products, is key to a great outcome



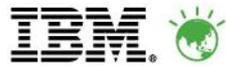
First, a bit about Australia Post



- The first letter to arrive in Australia was addressed to Governor Phillip in 1788.
- About 17 per cent of the Australian population changes their address each year.
- Over 10 million delivery points are serviced by Australia Post. Of these, more than 2.8 million are in rural areas, the outback, or on islands!
- Australia Post operates one of the world's longest mail runs, of **3,000 km**! It stretches from Port Augusta in South Australia to south-central Queensland, but delivers mail to only 88 addresses on that run.



First, a bit about Australia Post



- Street posting boxes were introduced in Australia in 1844.
- Stamps were not needed. The person who received the letter had to pay
- There are over 15,000 street posting boxes around Australia
- The most isolated post box is located on a dive platform on the [Great Barrier Reef](#).



Street posting boxes were first introduced in France in 1653 but were discontinued because of attacks by mice and vandals. .

Street posting boxes were introduced in Australia in 1844.



- **“Post boxes blown up, mail destroyed**
- **Updated June 10, 2009 17:04:00 “**
- Australia Post says 13 of its Canberra street posting boxes were vandalised over the long weekend.
- Australia Post's Scott McIntyre says mail in the boxes was damaged or destroyed in the "explosions".

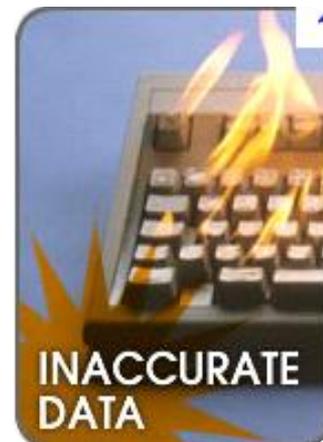


The Business Objective at Australia Post

- Accurately forecast Australia Post's massive cash flows on a daily basis in order to maximise investment returns

Historically...

- Monthly Cash Flow forecast was relatively accurate
- Inaccurate and time consuming daily cash flow model
- Not the same as monthly forecast forecasting
- Forecasting “to the wall” i.e. limited to end of the current year
- Managed and stored in excel files
- No visibility around gross movement of Agency cash flows, which could fluctuate by tens of millions of dollars each day.

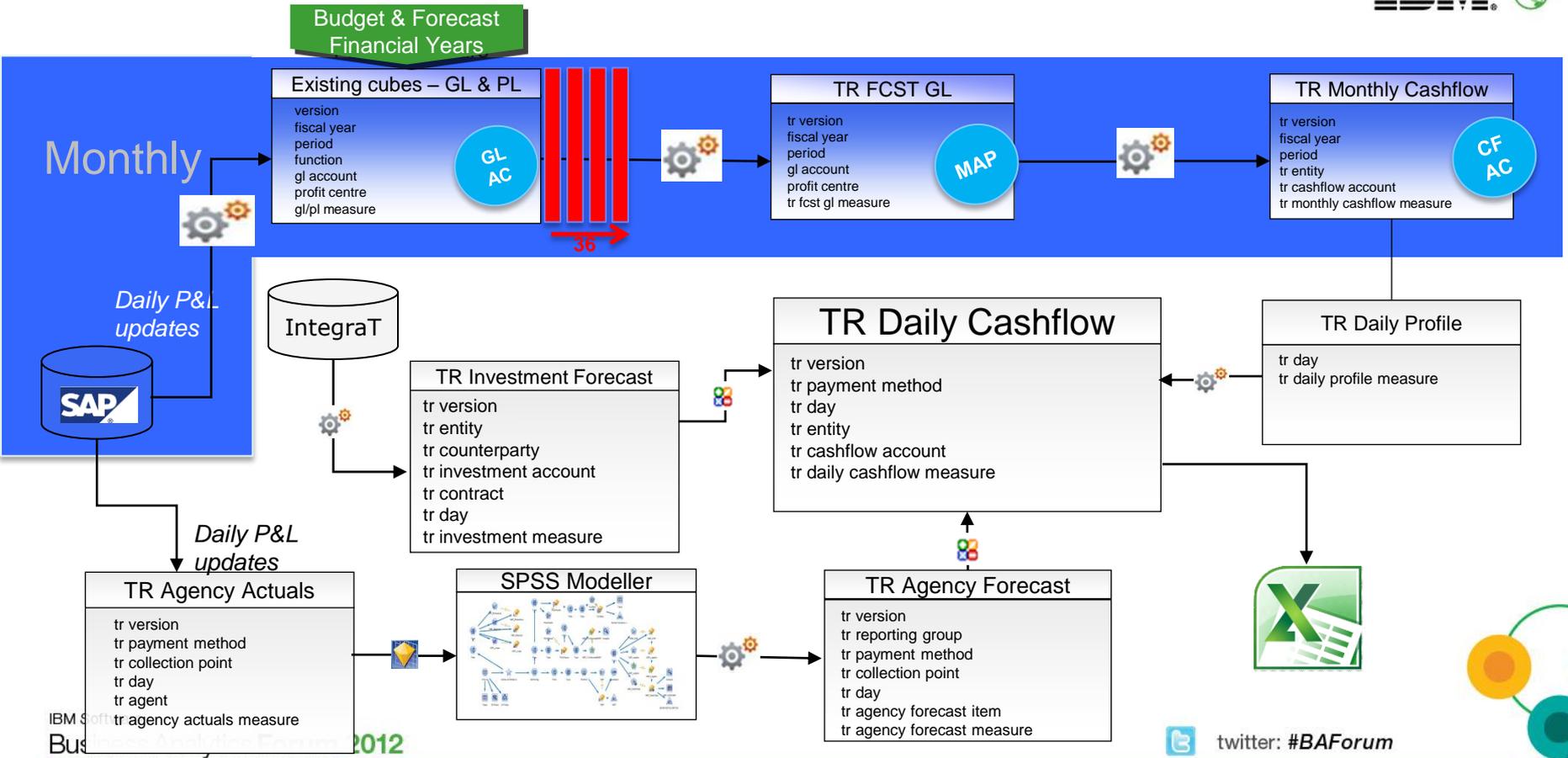


DATA INACCURATE



The Solution Overview

Australia Post - Treasury Cashflow



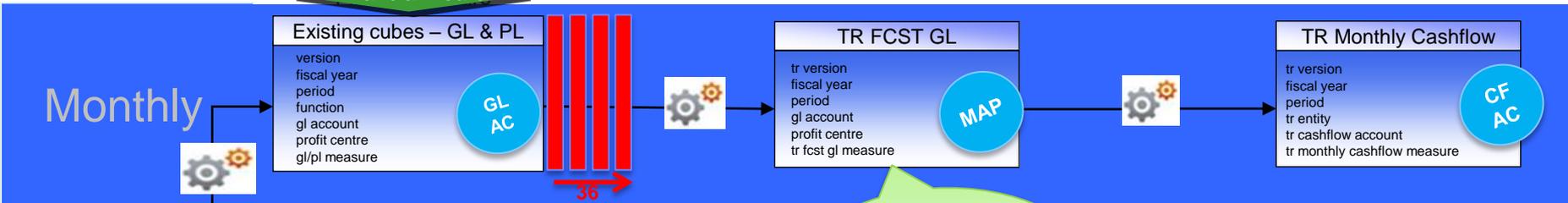
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Monthly Treasury Cash Flow Forecasting Model



Budget & Forecast
Financial Years



Existing GL Cubes used to bring in actuals and forecasts into a new Forecast cube.

Automated calculation of 36 month balance sheet

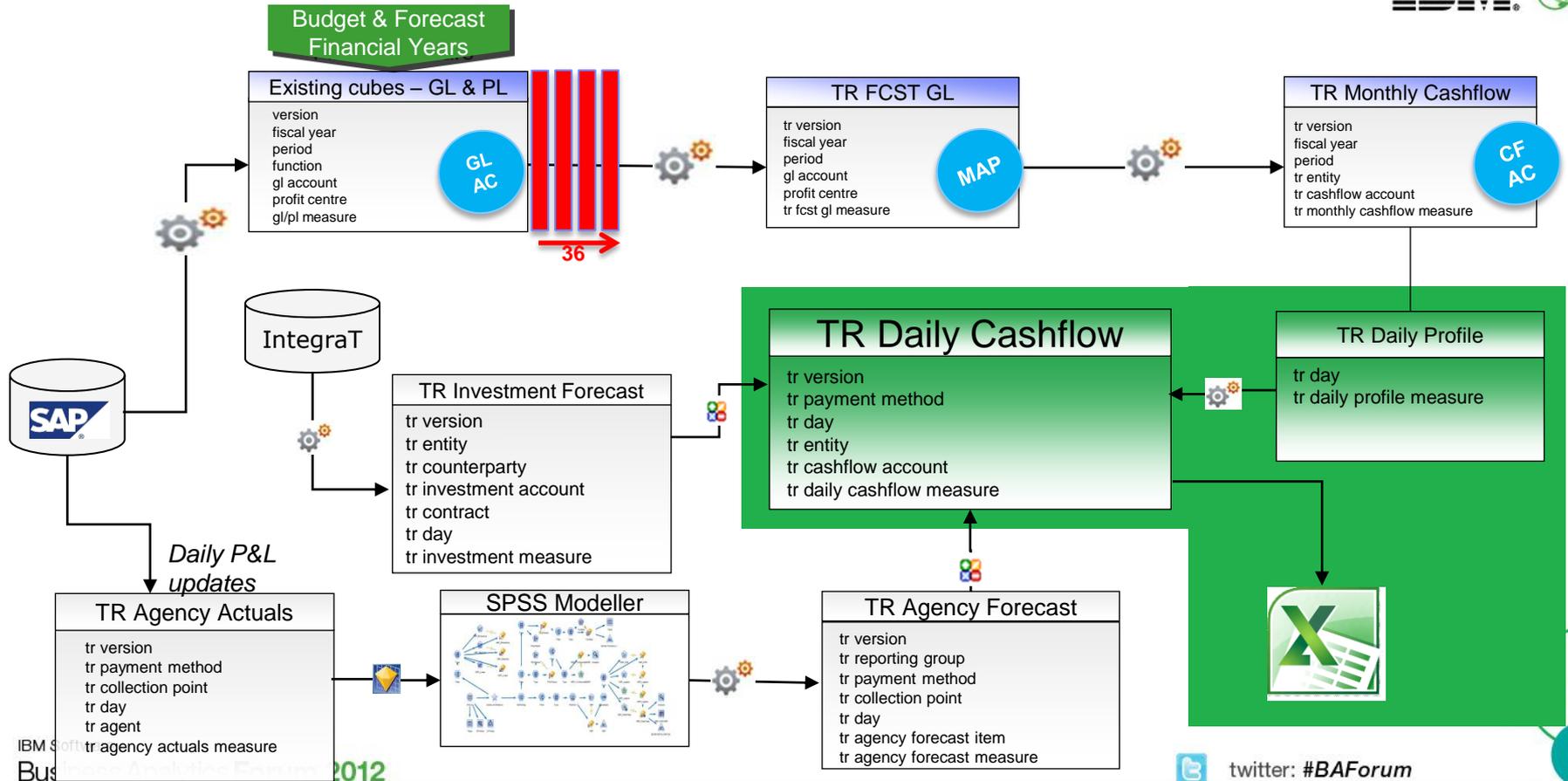
Translation to Cash Flow Measures

Monthly Cash flows generated and loaded into a Monthly Cashflow cube



The Solution Overview

Australia Post - Treasury Cashflow



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 2012

The Solution Overview

Australia Post - Treasury Cashflow



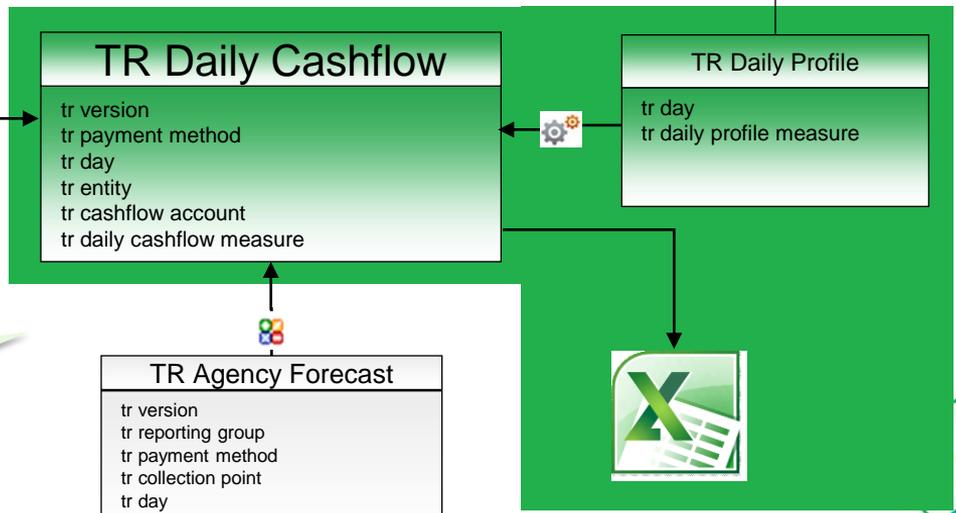
A base daily cash flow forecast is generated by profiling the monthly cash flows

Actual daily cash flow generated using the same mappings as the monthly cash flow model.

TM1 profiles created and assigned to individual cash flows

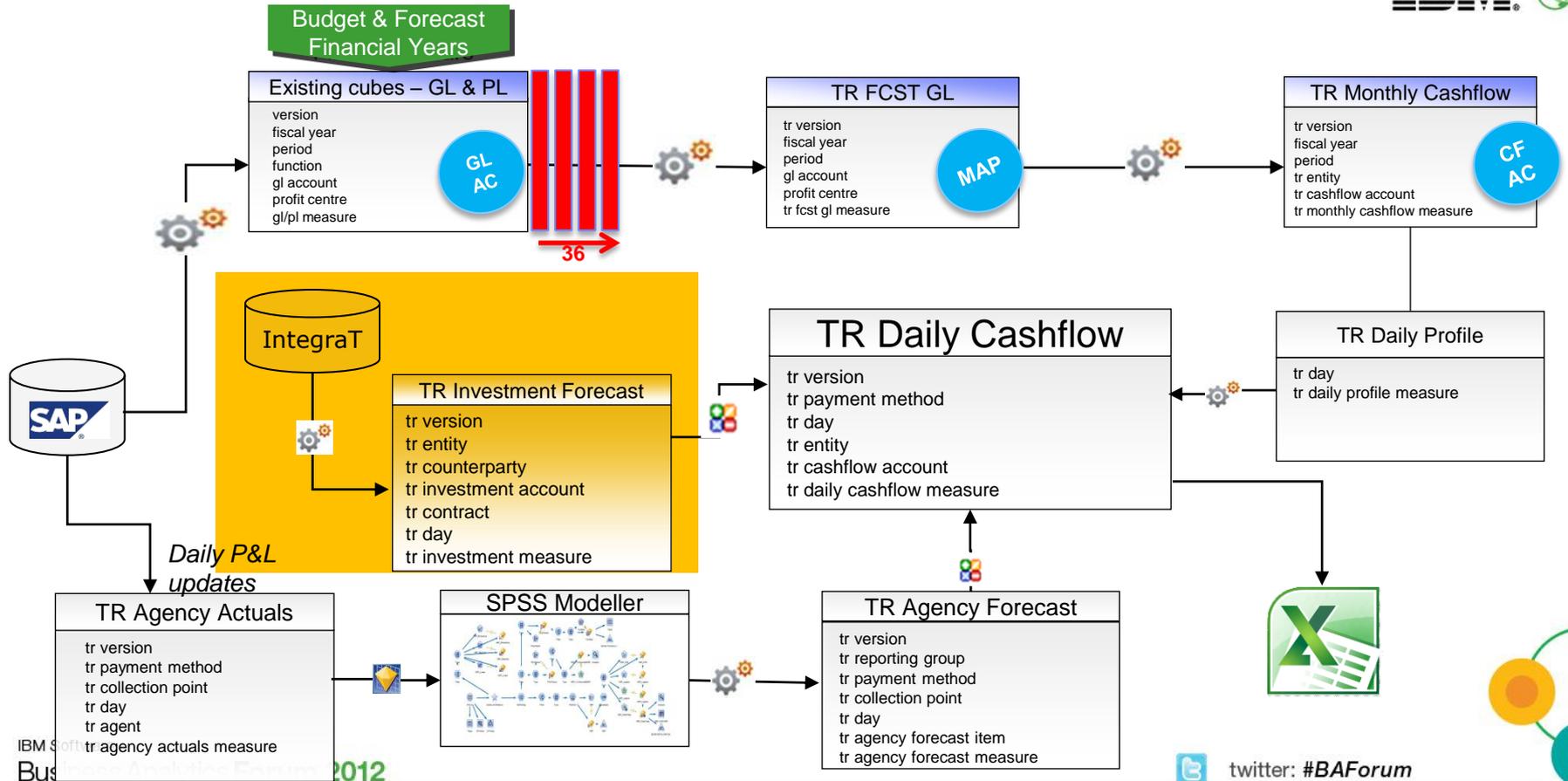
The base actuals and forecasts are overlaid with additional agency and investment information

TR Monthly Cashflow	
tr version	CF AC
fiscal year	
period	
tr entity	
tr cashflow account	
tr monthly cashflow measure	



The Solution Overview

Australia Post - Treasury Cashflow



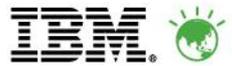
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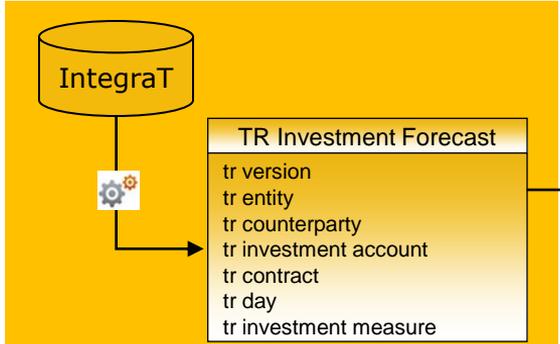
Investments Cash Flow Forecasting Model



Actual and forecasted cash flows generated by investment type

Expected interest on bank account calculated

Results of forecast overlayed in the daily cash flow model

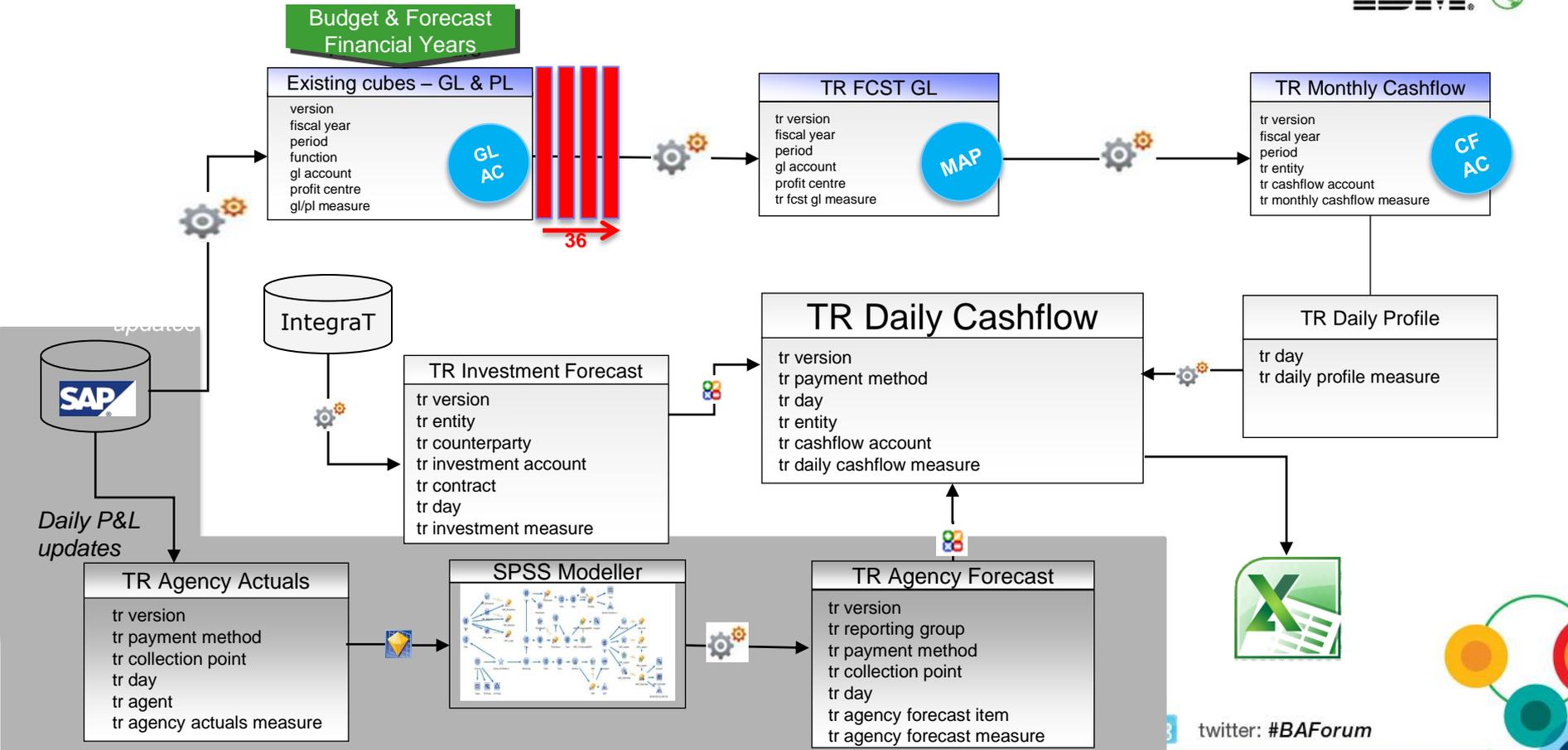


Scenario modelling



The Solution Overview

Australia Post - Treasury Cashflow



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Agency Cash Flow Forecasting Model

SAP Agency data imported into TM1

Weekly SPSS forecasting running each of the Time Series, CART and Neural Network models

Export data from TM1 to SPSS Modeller.

Import the results of the SPSS forecasts into TM1



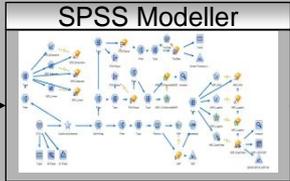
Daily P&L updates

TR Agency Actuals

- tr version
- tr payment method
- tr collection point
- tr day
- tr agent
- tr agency actuals measure



SPSS Modeller

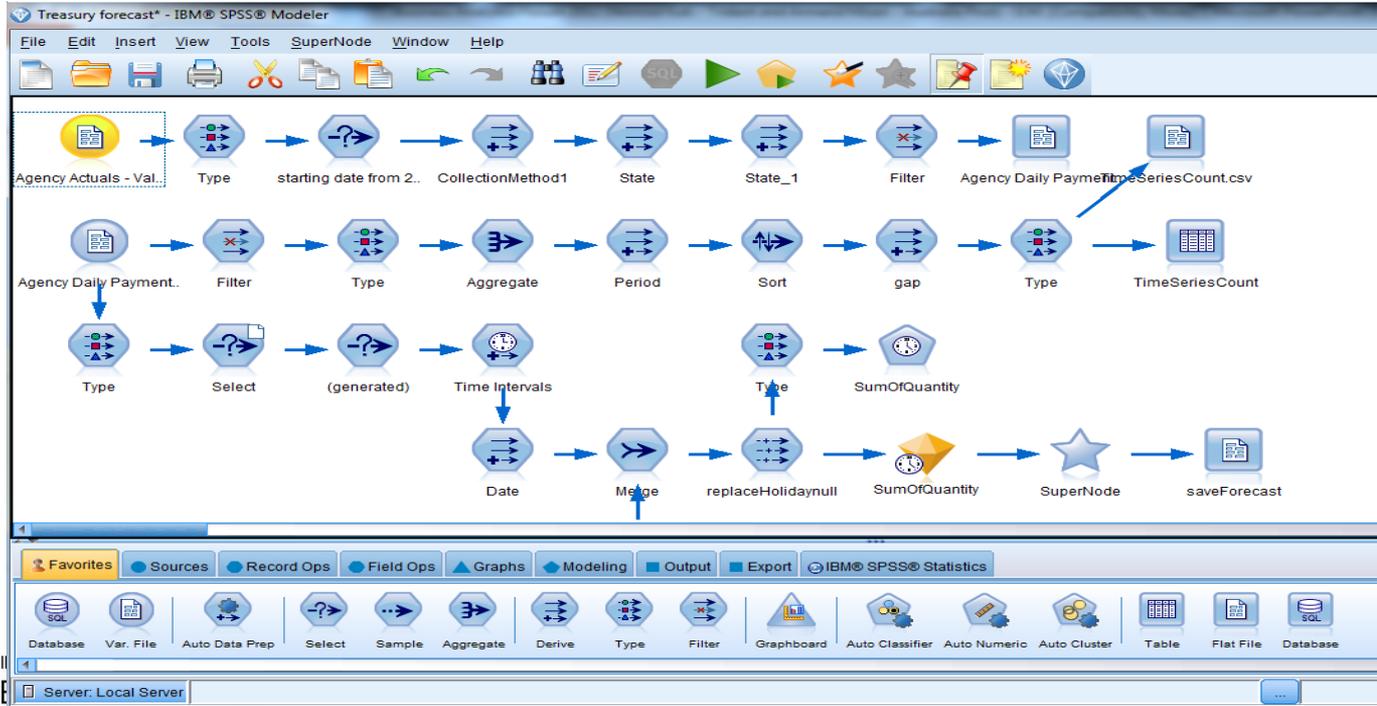


TR Agency Forecast

- tr version
- tr reporting group
- tr payment method
- tr collection point
- tr day
- tr agency forecast item
- tr agency forecast measure



Agency Cash Flow Forecasting Model



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SPSS Modeler Time Series Component

Data manipulation

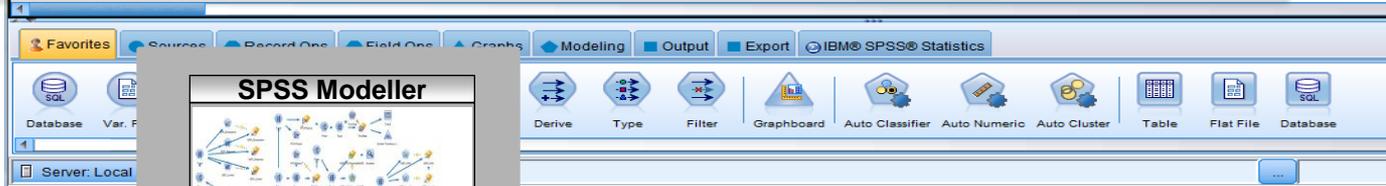
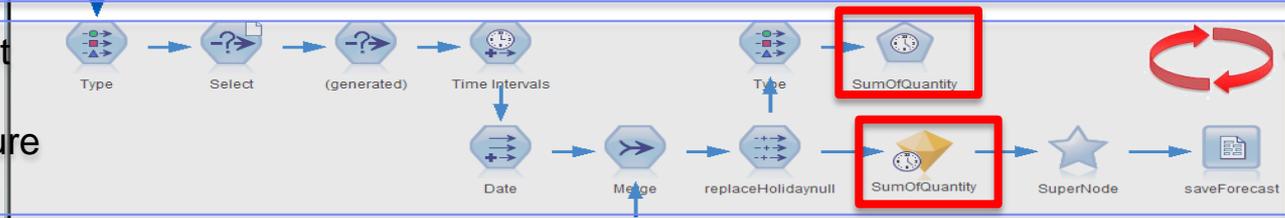


Time series model node

Data Segmentation



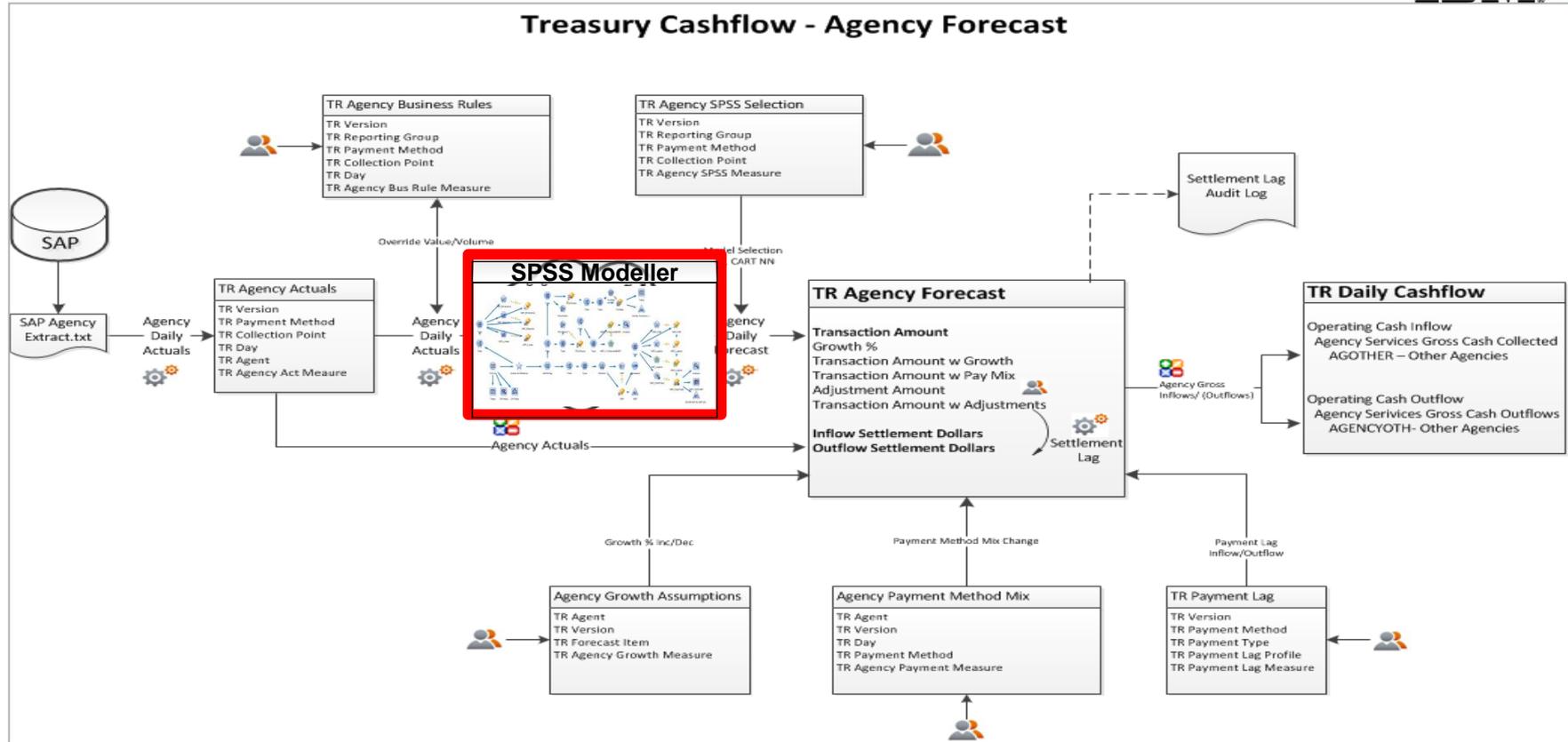
Model Development and Deployment (Repetitive Procedure using SPSS Script)



Time series model nugget (developed model)



The Agency Model (Detailed)



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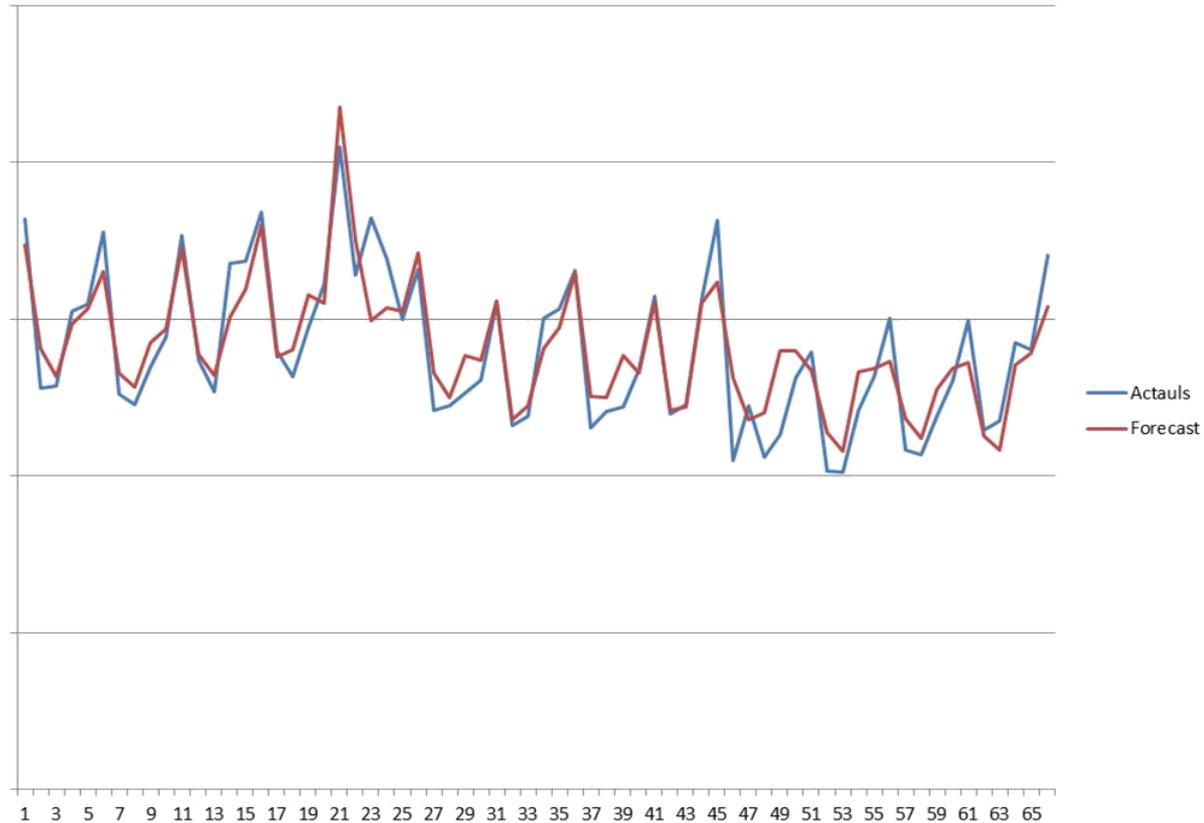
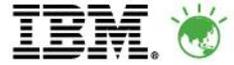
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Finding the nuggets



The Result

August- October 2011 Actual Vs Forecast



Difficulties Encountered within the Project



TECHNICAL DIFFICULTIES:

1. Settlement vs. Transaction Dates

Solution:



Lags applied to transactions to estimate cash settlement dates.

2. Impact of state based Public Holidays and special events

Solution:



A calendar of state based holidays is maintained in the forecasting model.

3. Identifying different trends for Agency payments

Solution:



Use of 24 months of historical data to enable the SPSS model to pick up seasonal trends.

4. Forecasting for Agents with gaps in historical data sets.

Solution:



Consolidating agents with sparse data into groups.



Next Steps

“You don’t have to see the whole staircase, just take the first step.”

- Martin Luther King Jr



The Takeaways

Thinking solutions, not products, is key

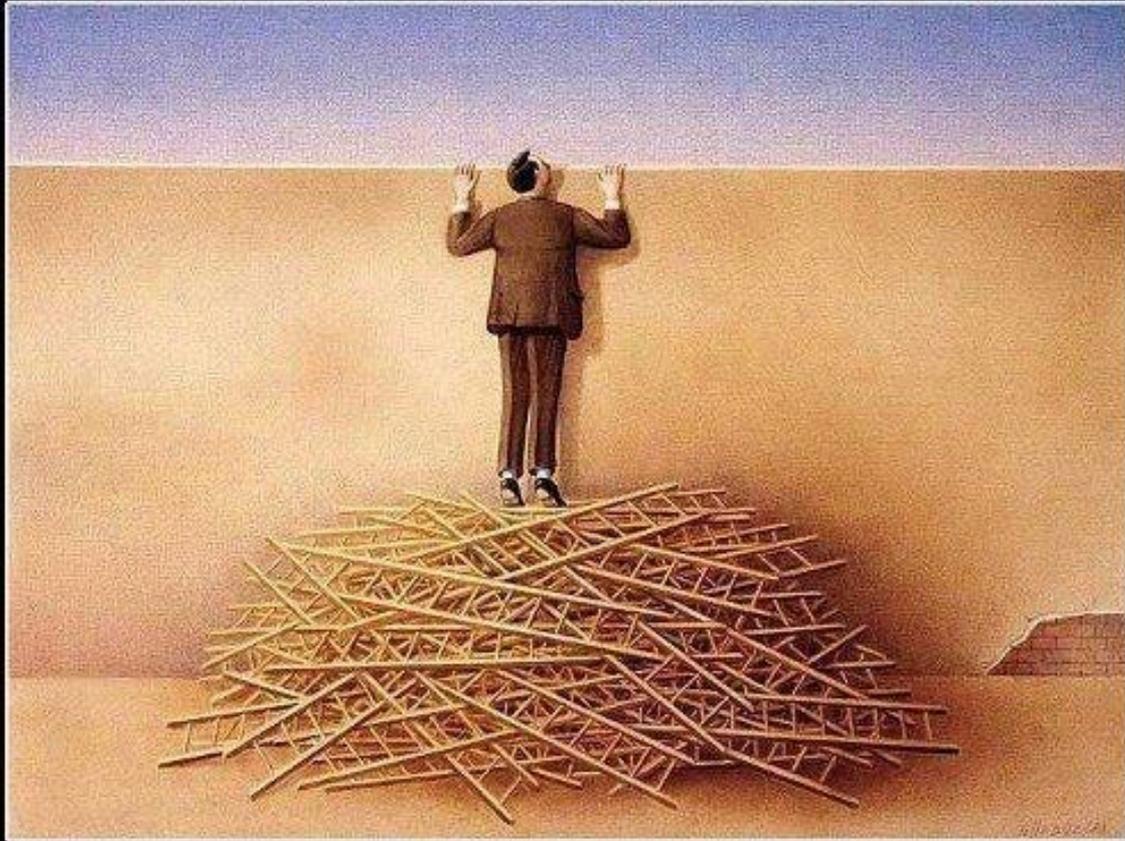
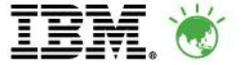
Believe it or not, TM1 cannot do everything

Leading solutions use the best tools to get the job done right

IBM's BA solutions are most potent when used in combination



It doesn't matter how many resources you have.



If you don't know how to use them,
it will never be enough.



Teamwork

- Leading Teams do leading work
- Divide, conquer & collaborate
- With thanks to team who made it a reality....
 - Martin, Louise, Mauricio (Tridant)
 - Cameron, Victor, Ronnie (IBM)
 - Armand, Catherine, Louise (Auspost)



