



Project Controls Expo – 16th Nov 2016

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The Evolution of the Next Generation of Cost Management Tools in Jaguar Land Rover

Tim Brogan

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- ❑ I left BAE Systems Land Systems (Telford) in May 2013 to become Parametric Estimating Manager at Jaguar Land Rover at Whitley in Coventry. Since then I have worked on the development and implementation of a new parametric estimating tool-set to support new model programmes, estimating on-board vehicle software costs, and on the project described in today's presentation, “Next Generation Redbook” (NGR) a totally updated tool to support the costing of New Product offerings now and in the future.

The Next Generation of Cost Management at JLR

- As we expand our manufacturing operations across the globe we needed a state of the art cost management tool to ensure that accurate, timely and clear cost information for all of our current and future model programmes is available at their fingertips of all our employees.
- The project requirement of a “hands-off solution that interfaces with current tools and processes which can deliver the information to over 8,000 of our employees overnight”, was fulfilled by NGR, which delivers that capability, and much more.

Jaguar Land Rover's business is growing...

11 Vehicle Lines – with ambitious plans to extend product offerings

Over **500,000** vehicles sales in Fiscal 2016 – more than double that of 2009

Nearly **40,000** people globally – headcount has almost **doubled** over the last five years

Plants in China, India and Brazil – soon with a new plant in Slovakia and contract manufacture in Austria



Sales network in 154 countries – with over **2,720** retailers

3 UK vehicle assembly plants, with **2** UK design and engineering sites



Nature of the Issues We Found



The Nature of our Decisions are Changing...



Day to day decisions are becoming increasingly more complex, but less **understood**



The number of **stakeholders** involved in each decision is **growing**



The **volume of data** that needs analysing is **ever expanding**



Delayed decisions have even greater potential to **impact our competitiveness**



The JLR Global Business Challenges...

BUSINESS CHALLENGES



EXPANDED PRODUCT PORTFOLIO



Improve speed and quality of product launch

VOLUME AND FOOTPRINT



Grow volume profitably and reduce break-even point

MANUFACTURING FOOTPRINT



Potential to assemble product overseas where economics dictate

CASH FLOW



Reduction in component inventories and finished vehicle inventories

ENVIRONMENT



Focus on meeting CO2 and regulatory requirements

SUPPLIER PARTNERS

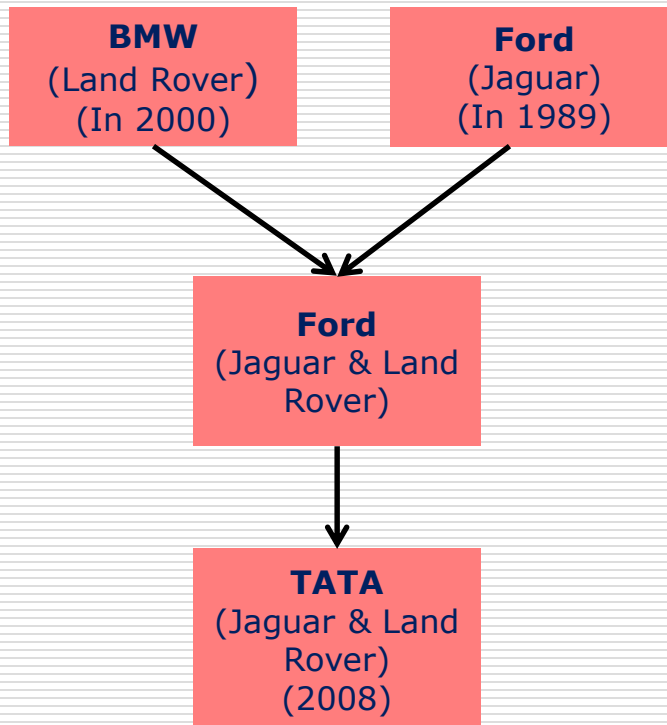


Demonstrate leadership, to be an entrepreneur in making the business flexible and agile

Jaguar Land Rover Corporate Presentation

The Genesis of JLR- The Legacy of Systems

Both brands were previously in one group under British Leyland until mid 1984



Everything Begins from Creating a Solid Data Foundation...

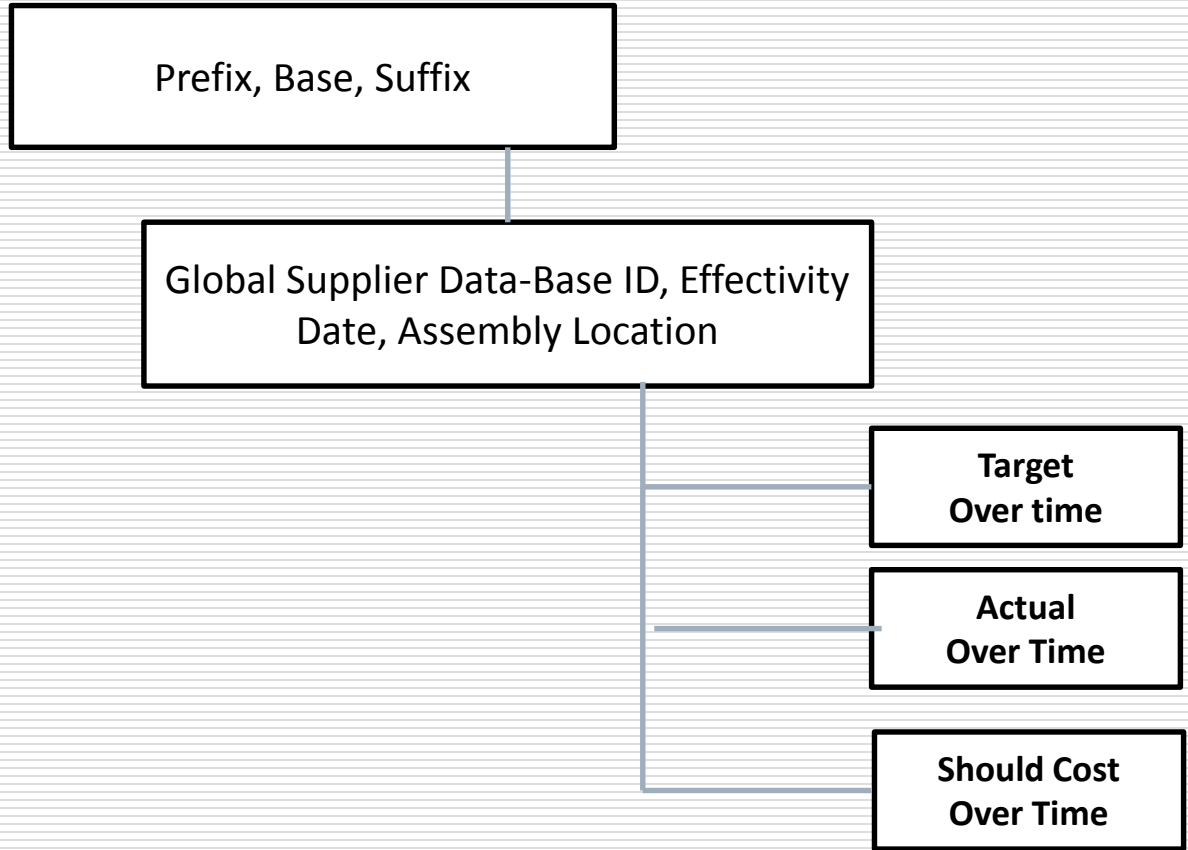
Jaguar Land Rover is currently going through a **major transform of its IT systems** – it has never been more important for us to **focus on the data**

Like any large organisation we have data challenges—understanding these is an important part of not carrying forward ‘mistakes of the past’

Significant effort has been spent on getting the data integration right – without this teams’ will not use the information, however good it may look on the screen



Managing The Part Data Relationships



Issues We Found During Implementation

- Multiple data formats
- Data that should have been removed from the database is still active
- Missing data
- Incorrect data
- Data in the wrong place
- Inconsistent data
- Risks and Opportunities not easily visible between New Model Programmes
- Target Management not consistent
- Cross company aligned data view not possible.

□ **What have we done about it?**



The Journey to Date

□ DATA CLEANSING

- All New Model Programmes built using the NGR System will have been validated against the JLR Engineering and Purchasing master data.
- This has entailed checking that the cost models have been built against the desired “features” (i.e 4 door) that have been agreed for each model and territory.
- That the parts have been released in the Engineering system for use on that vehicle
- Part number combinations are correct, i.e, prefix, base and suffix elements are valid in the combination specified
- That there are no missing or additional parts
- That the part costs are valid for use at the start of vehicle manufacture



The JLR Data Quality Journey



The Teams Demand Better Access to Their Information...



We are now **embracing new technologies** in our **factories and offices** to help turn our mountain of **data into information** that our teams can act on

Imagine If

... Data from multiple systems (including PLM and SAP) was displayed in one application



The introduction of **Business Intelligence** tools are helping to deliver a **new level of insight** at a **speed** not previously possible

Imagine If

... Changes to the cost model gave clear visual indicators in a single dashboard



Information is tailored to meet the needs of **different business users** whilst pulling from a **common data core**

Imagine If

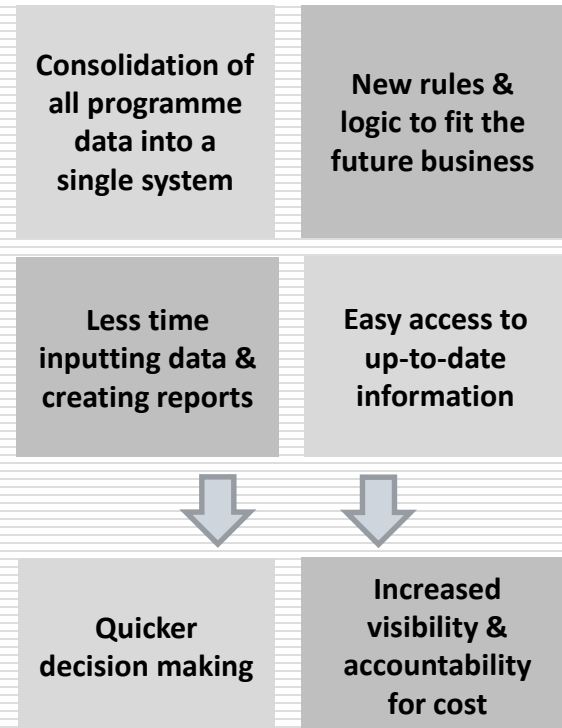
... The user could drill down to component parts intuitively



What is Next Generation Redbook...?

- A **New Cost Management Information tool** that will replace the Excel & SQL Redbooks currently run by the Programme Finance teams
- Providing a **'single source of the truth'** for cost across new model programmes that can be used by the cross functional **Module Team**
- Built using a **collaborative development approach** with input from across the Business (Finance, Purchasing, Engineering, Programmes)
- **Future plans** to expand scope to deliver Cost Management Information across the **Life Cycle and for all production**

- How is going to help...



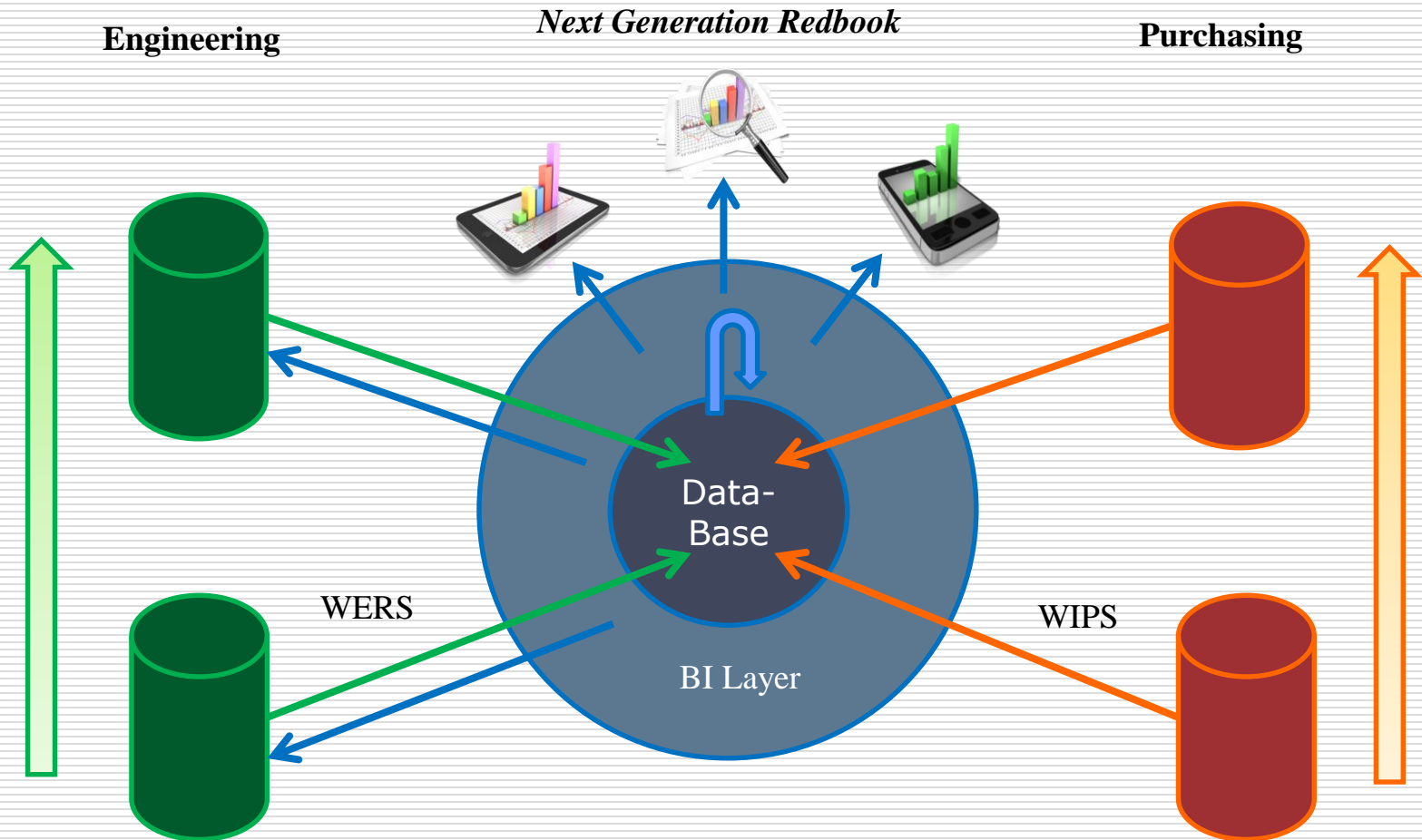
The Solution we are Implementing

□ A SYSTEM COMPRISING OF THREE ELEMENTS:

- A data upload area, a central data-base and a Business Information
- Business information is loaded into a central repository, checked and validated and then moved to a holding area ready to be uploaded at close of business each day.
- Data-base system is administered by a central admin team and is not visible or available to the general user community
- Information is uploaded and incorporated into the database, and a daily “version” is recorded.
- Updated Information is extracted to a holding area
- Information is then available to be used when a report is run by the user.

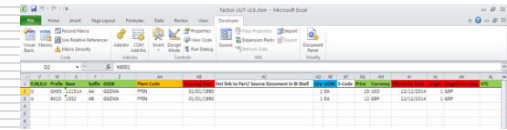
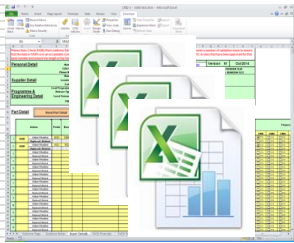


The System Environment



Getting Data into the System

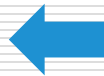
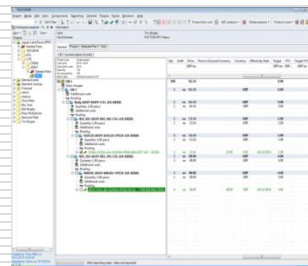
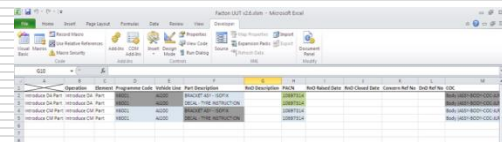
NEXT GENERATION RED BOOK – FULLY AUTOMATED



1. Data from legacy systems downloaded into central folder for processing

2. Processing macro extracts details of changes from business systems

3. Missing fields populated using data extracts from JLR systems -e-Tracker, WIPS Adhoc & WERS DIY or using defaults



6. Changes visible in reports & dashboards the following day

5. Changes loaded into Data-base during over-night batch run

4. Once data is complete, it is automatically feed into universal upload template

The Payback for Cross-functional Teams....



Single source of the truth to work from that all the team can use – no more time wasted on discussing whose data is right



Less time crunching data & more time acting on information – allows teams to deliver more



Opens up a new level of insight not previously possible – allows team to make not just faster decisions, but better informed decisions



Dashboards and Reporting

- The front end to NGR is web based making it much easier to provide access to those that need it
- It can be accessed through a Google site which will also act as a new knowledge portal for Redbook - providing training guides, system access info, updates & comms
- The landing page for NGR is made up of a number of tiles that group together similar reports & dashboards
- Access to information in NGR will be controlled by role and BoM alignment



An Example Reporting Screen

- Dashboards in NGR make it quicker for users to get to the information that they need
- Using a set of predefined filters to easily slice through large data sets
- Allowing users to bring together data from one or more programme for side-by-side comparison

Cost

Here you can launch reports related to Cost

Please select your filters using the buttons on the left. Then run a report, subject to ALL of these filters, by using the buttons on the right.

Favorites

View Selected Filters

Select Programme

Select Supplier

Select Engineering Hierarchy

Select Purchasing Hierarchy

Reset

Home

Programmes

Suppliers

Engineering Hierarchy

Purchasing Hierarchy

Select Report to Run

Target vs Status vs SwRM

Engineering View - Single Measure

Engineering View - All Measures

Purchasing View - Single Measure

Purchasing View - All Measures

Top N

Cost in Local Currency

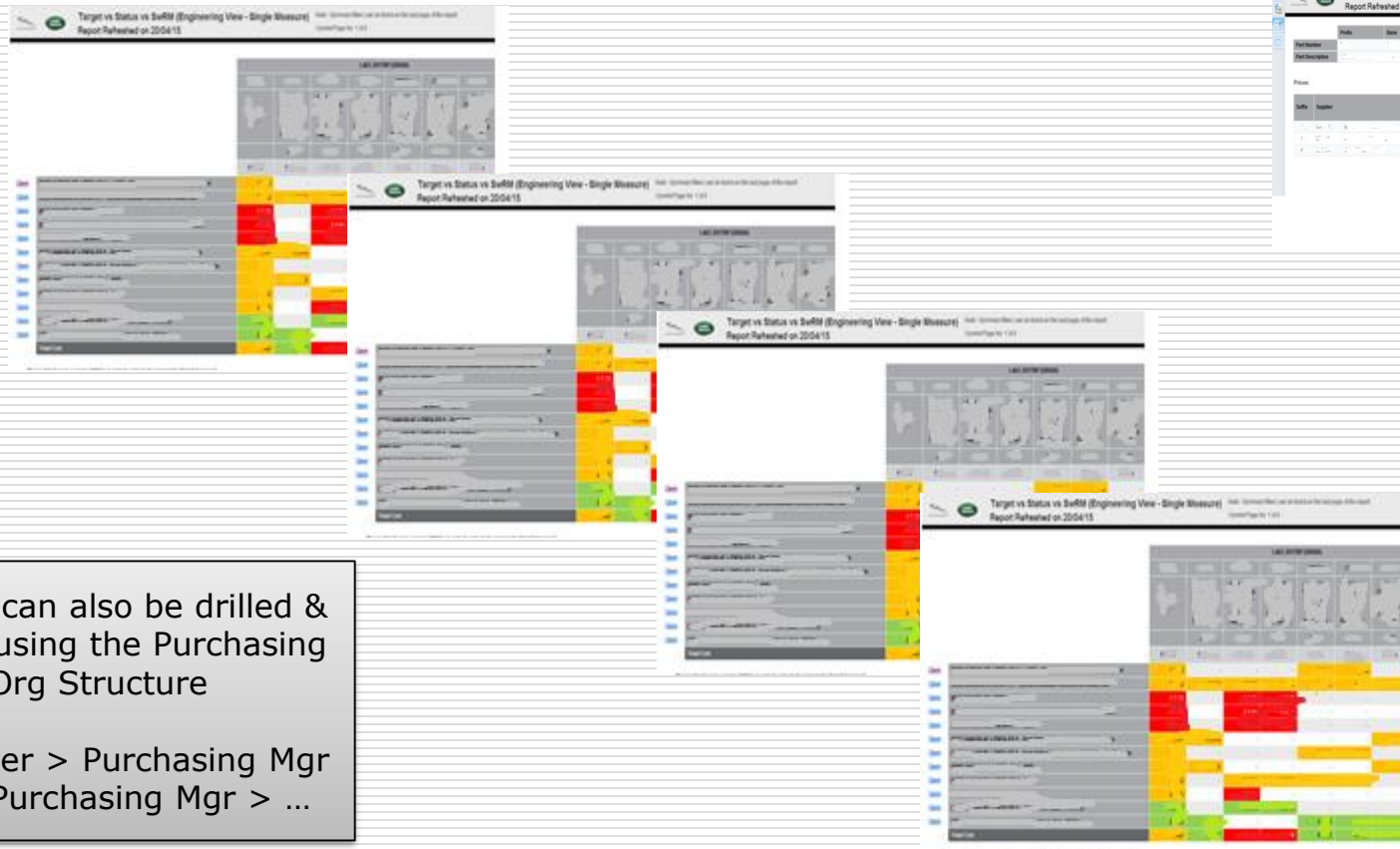
Parts Missing Target

User configurable 'Favourites' & ability to set defaults

4 ways to filter data in reports which can be used independently or in combination

List of available reports that can be ran based on filter criteria (plus *i* link to training material)

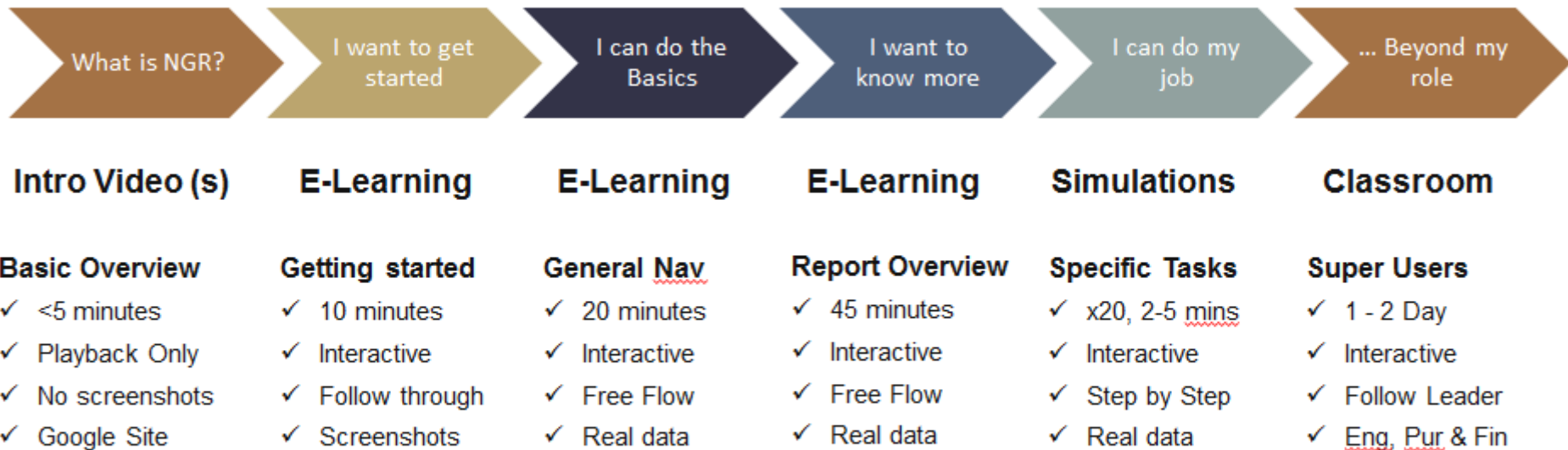
Example of a Drill-Down Report





Reports can also be drilled & filtered using the Purchasing Org Structure

e.g. Buyer > Purchasing Mgr > Snr Purchasing Mgr > ...

Training



E-Learning



NEXT GENERATION REDBOOK E-LEARNING MODULE TWO GENERAL REPORT NAVIGATION

NEXT GENERATION REDBOOK INTRODUCTION

OVERVIEW LOGIN LAUNCH FAVOURITES DRILL FILTER

WELCOME TO GETTING STARTED WITH NEXT GENERATION REDBOOK


Next Generation Redbook (NGR) is a new cost management information system being deployed across Jaguar Land Rover. It makes use of SAP Business Objects Dashboard and Web Intelligence technology to deliver web based reporting and analysis for the business.

This course is intended as a quick introduction to the basic functionality required to get started with Next Generation Redbook reports. It does not go into the detail of specific reports as this is covered in a separate e-Learning module.

COURSE OBJECTIVES
In this course you will cover:

- * How to login and launch a report
- * How to filter and drill a report to display information relevant to you
- * How to export and share a report
- * How security settings impact the data you can see in a report


Approximate runtime: 15 mins


PROGRESS 


OVERVIEW

OVERVIEW LOGIN LAUNCH FAVOURITES DRILL FILTER EXPORT SHARE SECURITY NEXT STEPS

HOVER OVER EACH OF THE TOPICS BELOW TO VIEW THE CONTENTS AND CLICK TO RUN

LOGIN		FILTER A REPORT
LAUNCH A REPORT		EXPORT A REPORT
SETUP FAVOURITES		SHARE A REPORT
DRILL A REPORT	NEXT STEPS	REPORT SECURITY

PROGRESS 



In Conclusion

□ JLR HAS STARTED THE JOURNEY WITH THE DEPLOYMENT OF NEXT GENERATION REDBOOK

- JLR have created internal resources to keep the system up to date and expandable, with low requirement for external assistance
- The system is in high demand from the areas of the business to help and assist in their requirements, i.e. Customs Duty and VAT
- Data cleansing has begun
- Initial programme teams have been engaged
- Aim of 100% coverage of programmes is being pursued
- Clarity, consistency and transparency of reporting achieved
- One Part, One Price, One Time, One Location.....a reality
- Linking to other new and legacy JLR “Pillar Systems”
- The usage of the tool has only just begun.....





THANK YOU