

Master Data Management (MDM) Summit Singapore 2010

Achieving Industry-wide Data Quality – Two Interactive Case Studies



Presenters: Dr. John Brudenell & Ms. Margaret Dine

Wednesday 13th October, 2010

Interactive Session Outline

- Case Study Objectives
- UTelco Systems Group Overview
- What is Master Data Management (MDM)?
- What is Data Management?
- Enterprise Approach to Data Management
- Setting the Scene – OneSolution for Enterprise, Industry & Acquisitions
- Interactive Case Study
- Mobile Number Portability – Enterprise & Industry-wide
- Product Master Data Management – Enterprise & Acquisitions
- Case Study Outcomes
- Next Steps

UTelco Systems Group Overview

- Operating as UTelco since 1998
- Enterprise Data Management foundation
- Information Management specialisation
- Providing Specialist Industry Consulting since 1989
- Providing EDW/EBI Strategy & Implementation since 1998
- Developing and Enhancing IP for over 25 years
- National & International Focus
 - Melbourne (AU Head Office)
 - Sydney
 - Brisbane
 - Singapore (APAC Head Office)
 - Further Offices in APAC Region Planned

Case Study Objectives

- Provide understanding of Value of Enterprise Data Management Approach in managing Master Data
- Provide 'know-how' in using approach to achieve successful implementation
 - Industry-wide Master Data & Data Quality Management
 - Product Master Data & Data Quality Management - Enterprise & Acquisitions
- Provide 'know-how' to solve your organisation's Master Data Management & Data Quality issues
- Provide foundation to Mastering your Data Quality Management
 - Across your Enterprise, your Industry & recent Acquisitions

What is Master Data Management (MDM)?

- **What is Master Data?**

- “Data held by an organisation that describes the entities that are both independent and fundamental for an enterprise, that it needs to reference in order to perform its transactions” (ISO 8000-110)
- Term recalls concept of master file from early computing era

- **What is MDM?**

- **MDM** is a Life-cycle strategy for creating, managing & maintaining the data assets across the enterprise
- **MDM** comprises processes & tools that consistently defines & manages non-transactional data entities of an organisation (aka reference data)
- **MDM** objective is to provide processes for collecting, aggregating, matching, consolidating, quality-assuring, persisting & distributing such data throughout an organisation to ensure consistency & control in use of this information

What is Data Management?

- **Data Management** comprises all disciplines related to managing data as a valuable corporate resource
 - Data includes all meta-data
 - Function
 - Entity Type
 - Attribute Type
 - Association Type
 - Table
 - Computer Program
 - MDM is subset of Meta-data
 - E.g. Product, Customer, Supplier, Location

Enterprise Approach to Data Management

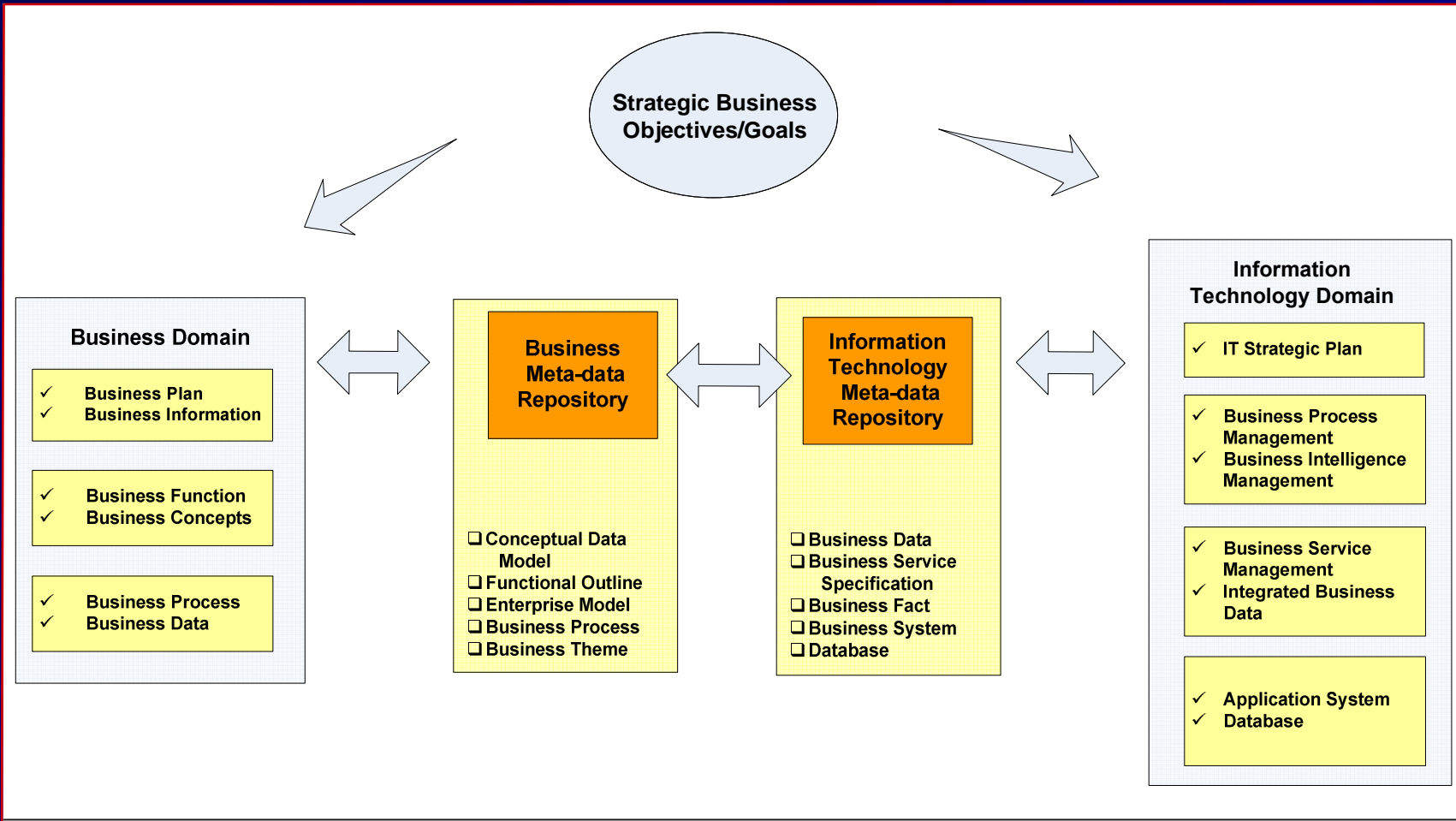
- **Enterprise Business Blueprint**
 - Single specification for all data management requirements
 - Enterprise Services Model specifying all business services
 - Removes dependence on individual's industry knowledge
 - Functional, Data & Information Flow / Sharing perspectives
 - Addresses management of data in context of business functions & business rules
 - Understand context of data
 - Implementation decisions are driven from all business units' perspective
 - Guarantees sharing & reuse
 - ISO Standards Compliant (Conceptual Schema)
 - Based on latest Enterprise Business Systems Integration research

Why have an Enterprise Approach to Data Management?

- **Data is a Corporate Resource & must be managed as such**
- **Data is shared across business functions, applications & business units**
 - Silo approach cannot provide effective management of data
- **Data does not “fall out of the sky” – it does not simply exist in isolation**
 - Data is created & used by Business Functions
- **Data Management must incorporate all meta-data & data management principles must be applied to all meta-data**
 - For instance, data security & privacy including access controls must be managed from enterprise perspective
 - ‘Whole of Customer’ must consider all perspectives within an enterprise, including data security & privacy

Enterprise Integration Framework

A Meta-Data-Based SOA for Enterprise Integration



Setting the Scene – One Solution for Enterprise, Industry & Acquisitions

- Case Study 1 – Enterprise & Industry Integration
 - Mobile Number Portability addressing Data Integration, Data Management, Business Intelligence & Data Quality with One Solution
 - Enterprise-wide data
 - Industry players data
- Case Study 2 – Enterprise & Acquisition Integration
 - Product Master Data Management addressing Data Integration, Data Management, Data Conversion & Migration, Business Intelligence & Data Quality with One Solution
 - Enterprise-wide data
 - Recently Acquired company's data – still in transition / earn-out period
 - Integrated into Enterprise Transformation Programme

Setting the Scene – Case Study 1: One Solution for Enterprise & Industry

- Mobile Number Portability
 - Introduced into Australian Telecommunications industry in September 2001
 - Mandatory regulatory business processes for all industry players, Network Providers (aka Carriers) & Service Providers
 - Regulated management of mobile service number movement among industry players in real-time
 - Included mandatory business processes, business concepts, business rules & business scenarios
 - Enterprise compliance & Industry compliance required
 - Industry-level SLAs demanded real-time enforcement of business rules to guarantee highest level of data quality

Case Study 1 – MNP Industry Functional Scope

- Manage Industry & Regulatory Environment
 - Manage Regulatory Strategy
 - Manage Regulatory Communication
 - Manage Regulatory-Product Movement Rules
 - Manage Regulatory-Product Movement
 - Capture Regulatory-Product Movement Request
 - Validate Regulatory-Product Movement
 - Process Regulatory-Product Movement
 - Monitor Regulatory-Product Movement Progress
 - Monitor Regulatory-Product Movement Impact
 - Take Regulatory-Product Movement Impact Minimisation Measures
 - Manage Regulatory-Product Movement Compliance

Case Study 1 - Key Master Data Concepts

- Service Provider
 - Manages relationship with end-user customer
- Network Provider (aka Carrier)
 - Manages relationship with Service Providers & other Network Providers
- Network Address - (Service Number)
 - Mobile Service Number (MSISDN)
- End-User Customer
 - Legal lessee of network subscription
- Involved party
 - Industry player involved in service number movement

Case Study 1 - Key Transactional Data Concepts

- Service (aka Network Customer Subscription)
 - Registered Subscriber on a Network
- Service Movement
 - Movement of service among one or more industry players
- Service Number Movement
 - Movement of service number among one or more industry players
- Service number movement rule
- Service number movement performance measurement rule
- Involved party service number movement progress
- Service number movement progress performance measure

Case Study 1 - MNP Key Business Objectives

- Provide strategic management information
- Eliminate regulatory reporting problems
- Guarantee full proactive regulatory compliance
- Provide monitoring, measurement & reporting of SLA metrics in real-time
- Increase business process automation levels
- Provide guaranteed continuity of service to all mobile customers
 - Provide seamless customer experience
- Each objective required information
 - Timely
 - Integrated
 - Of an exceptionally high quality

Case Study 1 - MNP Solution Architecture Drivers

- Centrality & simplicity of business architecture
- Relentless pursuit of data quality
- Provision of real-time, pro-active Business Intelligence (BI)
- Robustness & flexibility

Case Study 1 - MNP Solution Architecture Drivers

- Centrality of business architecture
 - Independence from source applications
 - Key Concepts sourced from 'true source'
 - Business Architecture comprised of
 - Enterprise Services Model (ESM)
 - Defines & specifies key business service details
 - Enterprise Ontology (business semantic layer)
 - Highly-refined, semantically-rich logical data model
 - Key cross-functional business processes
 - Customer-impact focus
 - Business Architecture required to report key metrics such as
 - Automation rates
 - MNP SLAs within 3 minutes of business transaction initiation

Case Study 1 - MNP Solution Architecture Drivers

- Relentless pursuit of data quality
 - Business required data fit for any purpose
 - Achieved if data is correct, complete & consistent
 - Fully implemented Enterprise Ontology complete with business rules enforcement
 - Cross-domain with internal & external agreement
 - Non-compliant business transactions rejected
 - No requirement for cubes & datamarts – one fact in one place
 - Real-time enforcement of business rules – no data profiling required after the event
 - Fully auditable data

Case Study 1 - MNP Solution Architecture Drivers

- Provision of real-time, pro-active Business Intelligence (BI)
 - Real-time data in – accepting, processing & loading source data in real-time while identifying enterprise ontology violations
 - Real-time data out – BI tool capable of querying, aggregating & reporting in real-time
 - SLA violations trigger immediate management notification

Case Study 1 – MNP Solution Architecture Drivers

- Robustness & flexibility
 - Cater for changes in business rules
 - Perform configuration rather than customisation
 - Identify, define & implement SOA-based reusable services
 - MNP industry services fully reused for past 9 years

Case Study 1 - MNP Business Impact

- Detailed reconcilable data prevented
 - Multimillion dollar litigation by industry players
 - Hefty fines for regulatory non-compliance
 - Massive cost savings
- Identification of specification & SLA non-compliance by 60% industry players
- Use of solution by regulator to clean up industry
- Enabled efficient & effective business operations
 - Provision of Real-time high quality data - Day One
- Cost reduction & increased revenue
 - Improved customer service
 - Internal process efficiency

Case Study 1 – Mastering MNP Data with One Solution

- One Solution caters for
 - Data Management – Master & Transaction
 - Data Quality – Real-time management of business rule violations
 - Enterprise Business Intelligence requirements – reporting, analytics & data mining
 - Enterprise & Industry Data Integration – single repository of enterprise & industry data
- One Solution means
 - Massive capital cost savings – Build once & reuse for many purposes
 - Massive operation cost savings
 - No ongoing cost of changes to business questions – cater for all business questions upfront – known & unknown

Setting the Scene – Case Study 2: One Solution for Enterprise & Acquisitions

- Product Master Data Management
 - 4 - 5 year Enterprise Transformation Programme launched with 16+ disparate product 'masters'
 - No integration of recently acquired companies still in 'earn-out' period
 - 8+ disparate product 'masters' within acquired companies
 - Recognition of poor data quality in each legacy product master
 - Inability to map legacy product 'masters' to ERP product 'master'
 - No confidence in any proposed product master solution
 - Heavy reliance on 'trusting' product vendors
 - High risk of Transformation Programme delays & associated cost impacts
 - No visibility of ERP product 'master' fit

Case Study 2 – Product Master Data Management Scope

- Provide Product Master Solution Architecture catering for
 - 3 - 5 year Business Transformation Programme immediate & subsequent phase requirements
 - Acquisitions' product requirements
 - Single Product Master integrating all product characteristics, structured and unstructured data
 - Full retail & manufacturing product life-cycle including all links into enterprise operations
 - Clean up all Product Master Data providing one true source of product data, including
 - Division, Business Unit, Departmental and acquired business views
 - Map all legacy and new application product views
 - Minimisation of throw-away & re-work

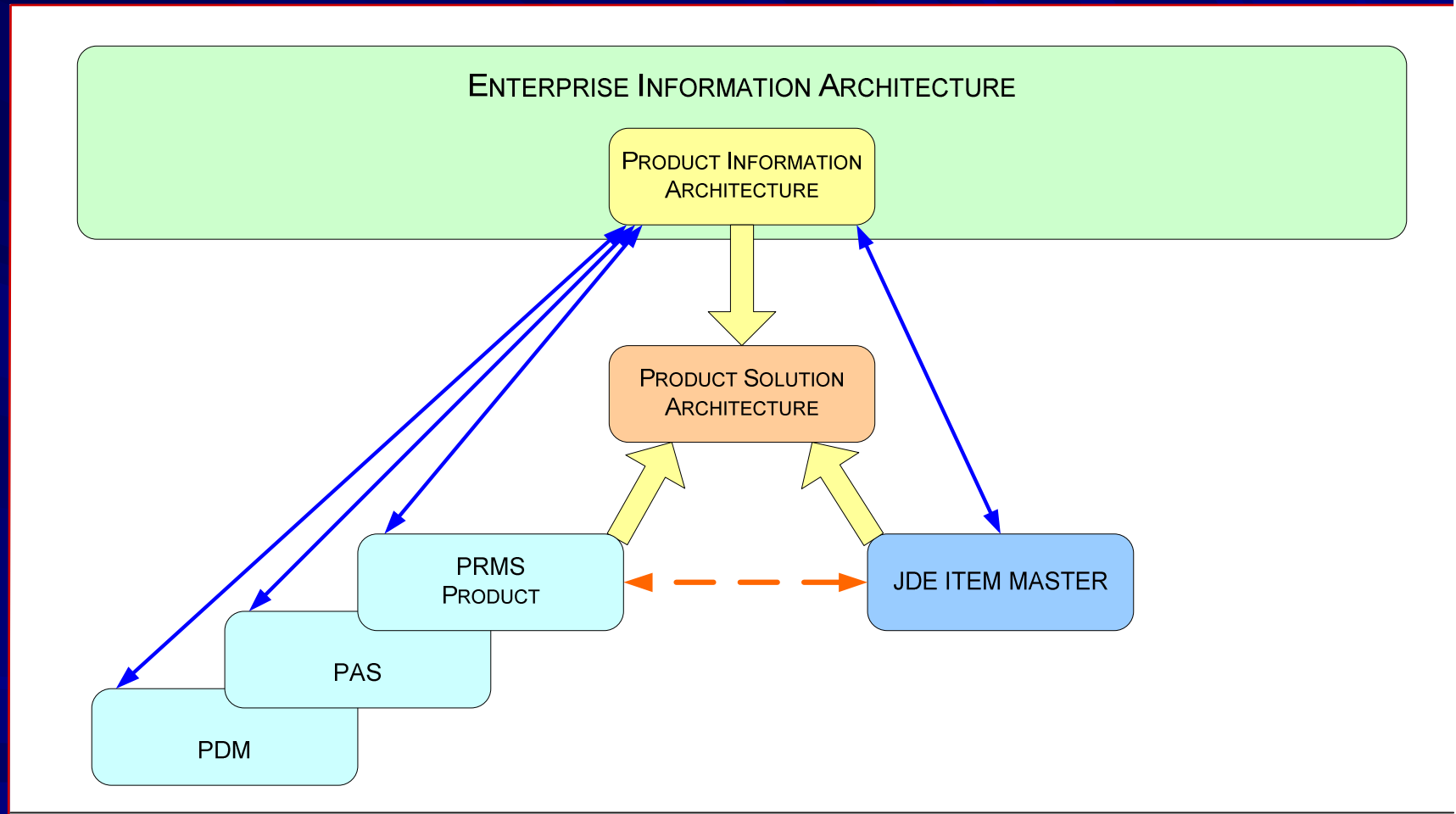
Case Study 2 – Product Master Business Impact

- Provision of correct, complete & consistent product data to end-to-end manufacturing process
 - What you see is what you REALLY get
- One true source of product data used by all aspects of enterprise including transitional acquired businesses
- Detailed reconcilable data provides
 - Full Business confidence in all aspects of product data
 - Massive cost savings
 - Use of solution to clean up all product data
- Mitigates risk of significant gap in knowledge transfer for acquired businesses in earn-out transition periods

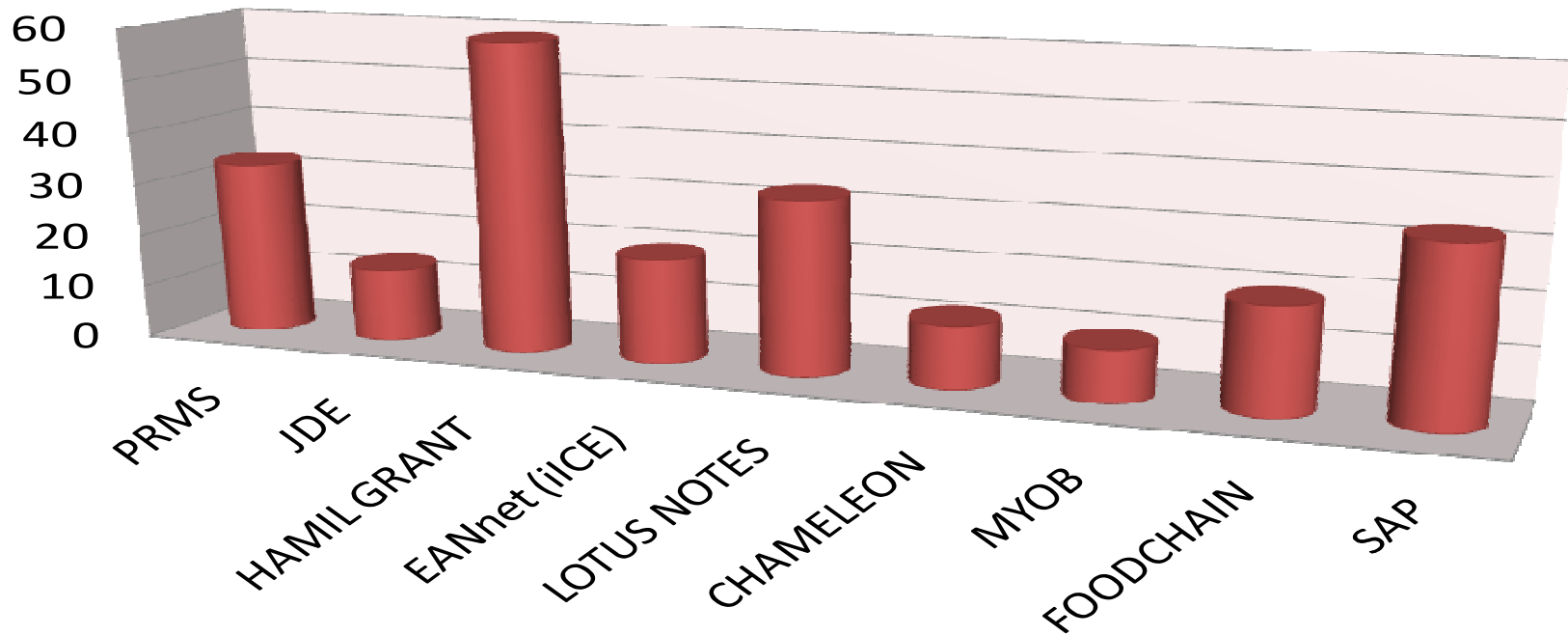
Case Study 2 – Product Master Business Impact

- Provision of legacy to new product master data mappings
 - Identification of gaps
 - Identification of potential customisation requirements
- Ability to 'look under the covers' of all potential product master data solutions

Case Study 2 – Mastering Product Data with One Solution



Case Study 2 – Product Information Architecture Fit & Data Gaps



Case Study 2 – Mastering Product Data with One Solution

- One Solution caters for
 - Data Management – Enterprise, Divisional, Business Unit & Acquired Business Data - Master & Transaction
 - Data Quality – Real-time management of business rule violations – multiple legacy & new
 - Enterprise Business Intelligence requirements – reporting, analytics & data mining
 - Enterprise & Acquired Businesses Data Integration – single repository of enterprise & individual business' product data including acquired businesses
 - Product Data Conversion & Migration from legacy to new applications – one-off & productionised conversions
 - Business Transformation immediate & subsequent phase requirements & beyond

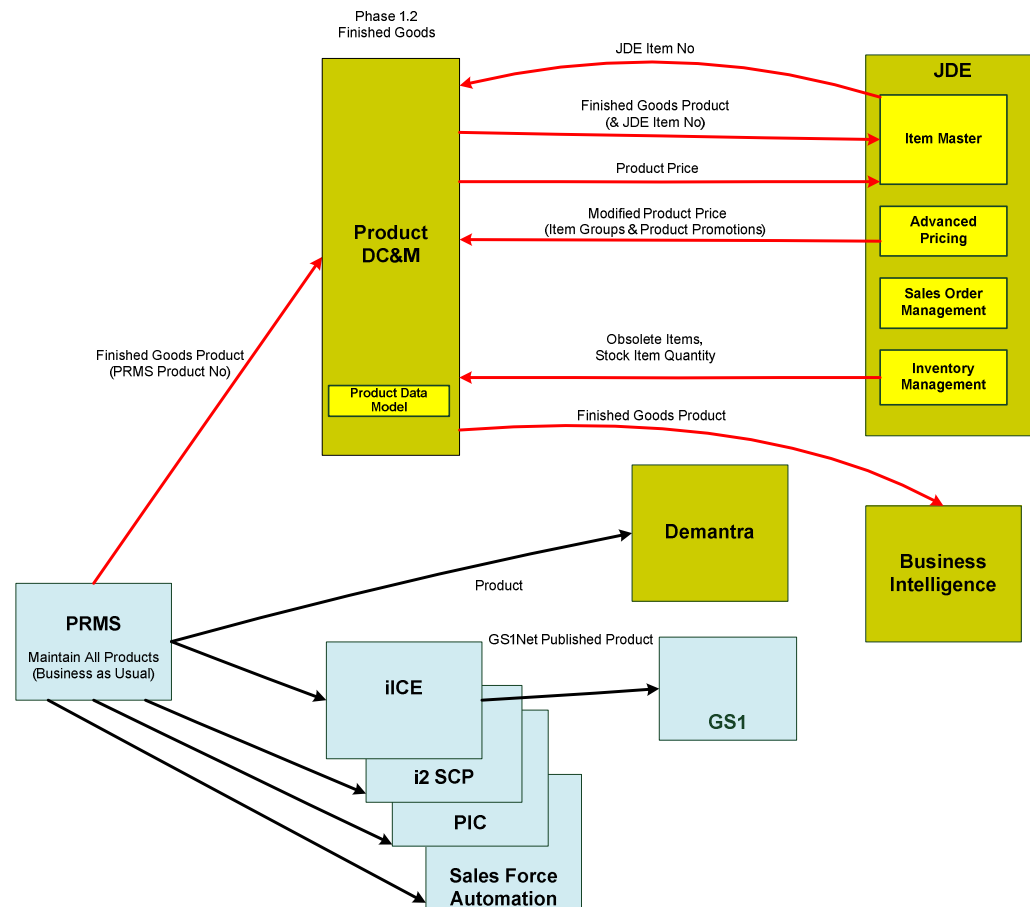
Case Study 2 – Mastering Product Data with One Solution

- One Solution means
 - Massive capital cost savings – Build once & reuse for many purposes
 - Massive operation cost savings
 - No ongoing cost of changes to business questions – cater for all business questions upfront – known & unknown
 - Guaranteed confidence in product data being cornerstone to strategic business direction

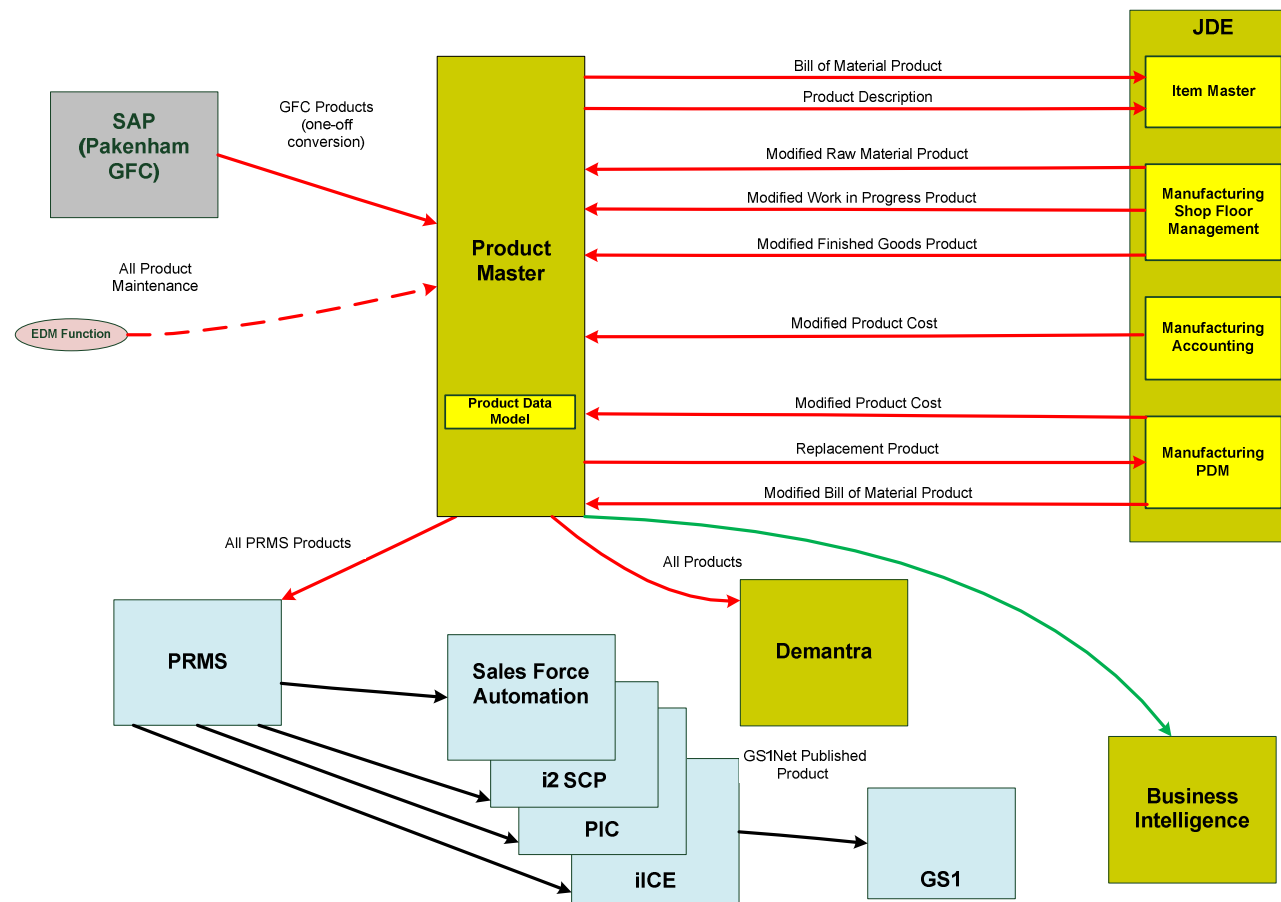
Case Study 2 – Phased Product Master Solution Architecture

- Solution Architecture aligned to Business Transformation Programme
 - Caters for Transformation phases including integration of 8 newly-acquired companies
 - Single Product Master maintained throughout phased implementation
 - Solution Architecture defined for each phase
 - Real-time clean-up of Product data
 - Incremental decommissioning of legacy applications

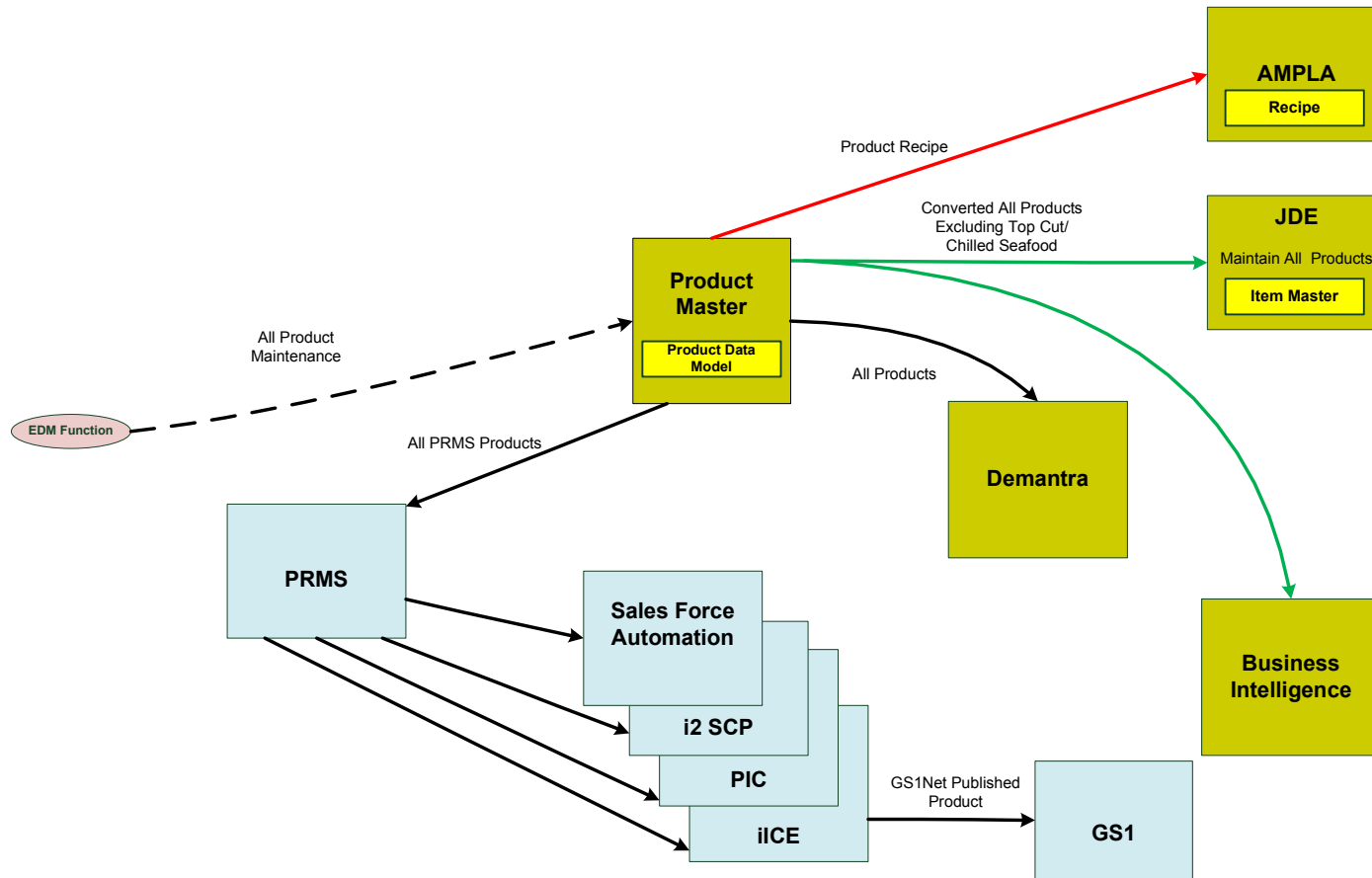
Case Study 2 – Product Master Solution Architecture – Phase 1.2



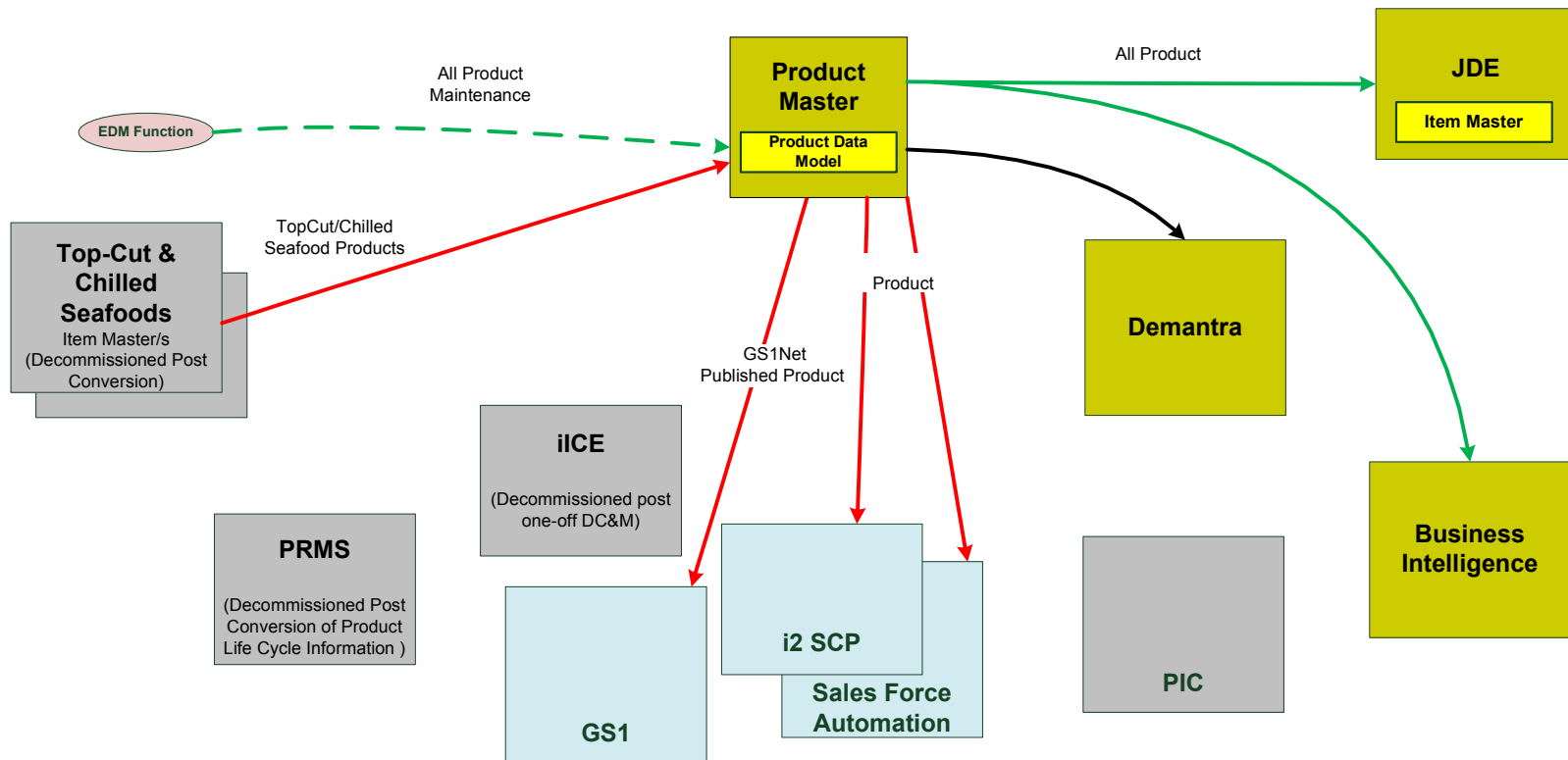
Case Study 2 – Product Master Solution Architecture – Phase 1.3



Case Study 2 – Product Master Solution Architecture – Phase 1.4



Case Study 2 – Product Master Solution Architecture – Phase 2



Case Study Outcomes

- **Understand Value of UTelco's Enterprise Data Management Approach to Master Data Management**
 - Same solution applies to all data, not just Master Data
 - Same solution can be used for Data Conversion & Migration
 - Same solution can be used for Enterprise Business Intelligence / Enterprise Data Warehousing
 - Cost reduction in Overheads
 - Cost reduction in Upfront Effort
 - Minimises Data Security & Privacy breaches
- **Provide Application Independent 'know-how' in a complex business environment**
- **Provide basis of tactical & strategic solutions**
- **Achieve industry-wide Data Quality using an Enterprise Business Blueprint**

Next Steps

- Visit the UTelco Systems Booth in the Exhibition Hall
- Contact Director of Global Marketing & Sales
 - Michael Brudenell – michael.brudenell@utelcosystems.com
- Consultants Available
 - Dr John Brudenell – CEO & Consulting Director
 - Margaret Dine – CEO & Technical Director
 - Stuart Marshall – Head of Enterprise Architecture
- Website - www.utelcosystems.com
- Email - info@utelcosystems.com