



Management
& Technology
Consultants

Building a Comprehensive Strategy for Enterprise Data Management

An Executive Overview

Introducing MIKE2.0

An Open Source Methodology for Information Development

<http://www.openmethodology.org>

Building an Enterprise Data Management Strategy

Agenda

- Defining Enterprise Data Management (EDM)
- Business Drivers for taking an Enterprise approach to Data Management
- Defining an EDM Strategy
 - Challenges
 - Benefits
 - Different Techniques for Defining a EDM Strategy
 - Guiding Principles for a comprehensive EDM Strategy
- MIKE2.0 Methodology
 - Strategy Activities Overview
 - Example Task Outputs from Strategy Activities
- Lessons Learned



Enterprise Data Management

How we define Enterprise Data Management



There many types of projects where having a well defined approach to managing data is the key to success

- Data Governance
- Data Investigation and Re-Engineering
- Data Integration
- Data Migration (once-off batch migration and parallel runs)
- Data Warehousing (traditional)
- Data Warehousing (real-time, services-oriented)
- Data Mart Consolidation
- Application-specific warehouses or migrations
- Master Data Management
- Data Convergence
- IT Transformation

In addition, for many projects that are not classified as "data projects", the approach to Data Management is a key factor in their success. Because of these commonalities and the complexity of the issue, it is necessary to have an **Enterprise** approach to Data Management.

Executive Business Drivers for Data Management

Data Management Issues are Driving our Priorities

CIO



- **CIOs are faced with both sides of the business;** needs for growth and expansion and cost justification for each IT project
- **Institutions are spending Millions each year on IT** but feel they have reached the limits that enable them to contain costs yet enable large-scale acquisitions

CFO



- **In the post Sarbanes-Oxley environment** where CFOs are asked to sign off on financial statements, the quality of data and the systems that produce that data are being scrutinized now more than ever before
- **Growth can only come with efficient architectures** and synergistic investments in technology

CRO



- **Risk compliance in financial institutions** has become more complicated by a number of regulations such as Basel II accord and USA Patriot act
- **A siloed approach to compliance is no longer valid**, significant savings can be found in the pooling of initiatives around risk

CMO



- **In an environment where CMOs are being asked to grow revenues** with less manpower than ever before, new regulations are getting in their way of being effective
- **Privacy policies, and opt out policies are destroying pre existing databases** and making it hard to cross sell and up sell existing customers

Challenges in Defining an EDM Strategy

Meeting these Challenges is the Key to Success



Building an EDM Strategy that can accommodate:

- **Continuous development** through increment-based delivery
- **Changing business requirements** over a multi-year programme
- **Delivery** of tactical projects in the context of long-term strategic initiatives
- **Progressive changes** to technology with vendor releases

Aligning the EDM strategy with other strategic initiatives:

- Provide deliverables with **consistent definitions** of "blueprints", "roadmaps", and "frameworks"
- **Ensure consistent leveling** – re-factor deliverables that are too high-level or too detailed
- Make sure the strategy is **in touch with organisational culture** and their ability to change
- Define a delivery approach that **allows for parallel activities** and avoids serial bottlenecks
- Ensure **delivery is focused on high-risk** areas of Data Management
- **Improve Operational Efficiency** through reuse of common work products

Building an improved competency in Data Management across the organisation:

- **Deliver through a systematic process** that you follow from a data management perspective – within IT, the overall business and across departments
- Integrate **Data Management performance metrics** into all your activities
- **Build a framework to reuse content** at a detailed technical level
- Provide solutions that **integrate at the conceptual, logical and physical level** to be insulated from vendor changes

EDM Strategy

Drivers and Benefits

Achieve

- Assurance that common data reconciles across all systems
- Improved data quality across the enterprise environment
- Reduced complexity in the information management environment through data standards
- The ability to trace the flow of information across all systems in the architecture
- Can scale to meet future business volume growth
- Meets the needs of any initiating project and can also be extended across the wider enterprise environment



Avoid

- Ingrained information processes that lead to data quality issues
- Unnecessary duplication of effort related to integrated and information management
- Inconsistent information management processes that lead to data reconciliation issues
- Inefficient software development process that increases cost and slows delivery
- Unknown handoffs between projects sharing common information
- Inflexible systems and lock-in to specific technologies
- Unnecessary duplication of technology spend

Change Drivers

Market, Serve & Know the Customer Better

Improve Competitive Position

Reduce Technical Complexity & Cost

Meet Regulatory Requirements

MIKE2.0 views 3 viable methods to define an EDM Strategy

Blueprinting Approach

- The comprehensive Blueprinting approach goes across people, process, organisation and technology
- The goal is to form a comprehensive Information Development Organisation
- Follows all activities in the first 2 phases of MIKE2.0
- The Roadmap aspect of the strategy is executed for each increment

The Metadata-Driven Approach

- Focuses on building a reference model of the organisation that includes not just a data dictionary, but the complete enterprise information management environment
- The metadata-driven approach is more than common data definition – includes transformation, governance rules
- Incorporated into Blueprinting approach although often starts during the Roadmap aspect of the strategy (Phase 3)
- Data Investigation can help populate the metadata-driven approach

The Investigative Approach

- Data Profiling is conducted to quantitatively understand data quality issue of the current environment
- Helps remove the uncertainty and assumptions regarding the current information environment Often uses a tools-based approach
- Allows for fact-based decisions to be made about the Information Management Strategy

EDM Strategy

Guiding Principles of an EDM Strategy

People



- Formally establish **Executive Sponsorship** from the onset
- Designate **Data Stewards** for relevant data subject areas. A **Data Governance Leader** is assigned to guide the overall effort
- **Enabled staff** with the right skills to build and manage new information systems and create a culture of information excellence
- Change staff behavior to **architect solutions** as opposed to merely building them

Process



- Explicitly design enterprise-wide initiatives
- Establish a **methodological approach** that can be used from Strategy to Operations
- Define enterprise-wide **standards, policies and procedures**
- Avoid a "collaboration maze" through a Blueprint that enables **continuous communication and implementation**
- Establish an overall vision that aligns **Business to Technology** and **strategic to the tactical**
- Doesn't go into too much detail – establish the vision and then focus on **'the next right thing'**

Organisation



- Build an **Information Management Organisation** that is structured in the most efficient manner to deliver solutions for the business
- **Model the enterprise** at 3 levels and put a heightened focus on information and infrastructure
- Move to **Centre of Excellence** Delivery Models for Information and Infrastructure Development
- Establish a **balance of power** across Architecture, Delivery and Leadership

Technology



- Drive **technology selection** from well-defined and comprehensive strategic requirements
- Focused on greatly improved **flexibility and re-use** as part of the strategic framework
- Choose technologies and design the implementation based on use of **open and common standards**
- Get **foundation capabilities** in place from the onset and prioritise these as early activities during each implementation phase

The MIKE2.0 Methodology

An Open Source Methodology for Information Development

What is MIKE2.0?

- **MIKE** stands for **M**ethod for an **I**ntegrated **K**nowledge **E**nvironment
- MIKE2.0 is our comprehensive methodology for Enterprise Information Management
- MIKE2.0 brings together important concepts around Open Source and Web 2.0
- The open source version of MIKE2.0 is available at: <http://www.openmethodology.org>

Key Constructs within MIKE2.0

- **SAFE** (Strategic **A**rchitecture for the **F**ederated **E**nterprise) is the architecture framework for the MIKE2.0 Methodology
- **Information Development** is the key conceptual construct for MIKE2.0 – develop your information just like applications

MIKE2.0 provides a Comprehensive, Modern Approach

- Scope covers Enterprise Information Management, but goes into detail in areas to be used for more tactical projects
- Architecturally-driven approach that starts at the strategic conceptual level, goes to solution architecture
- A comprehensive approach to Data Governance, Architecture and strategic Information Management

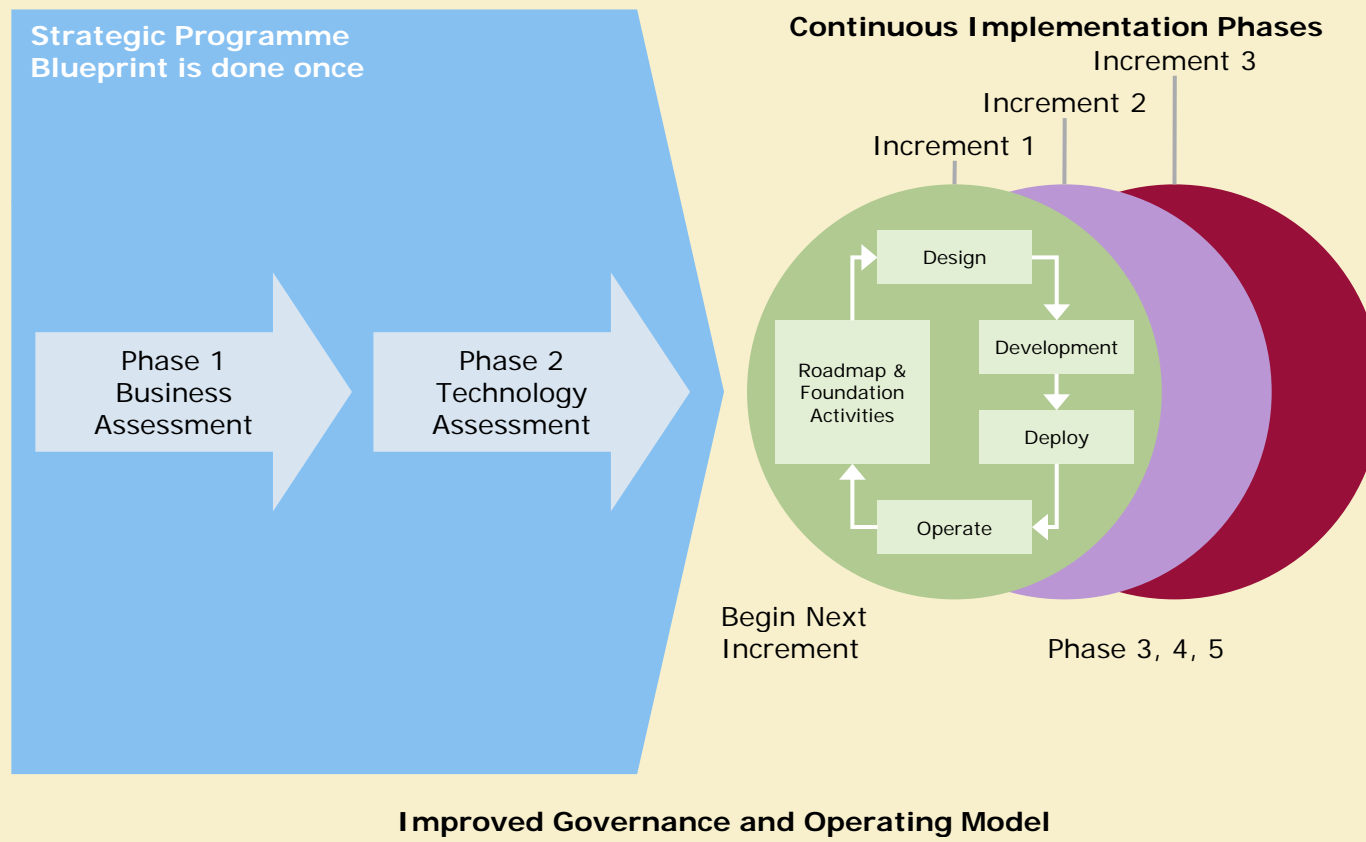
MIKE2.0 provides a Collaborative, Open Source Methodology for Information Development

- Balances adding new content with release stability through a method that is easier to navigate and understand
- Allows non-BearingPoint users to contribute
- Links into BearingPoint's existing project assets on our internal knowledge management systems
- Unique approach, we would like to make this "the standard" in the new area of Information Development

MIKE2.0 Methodology: Phase Overview

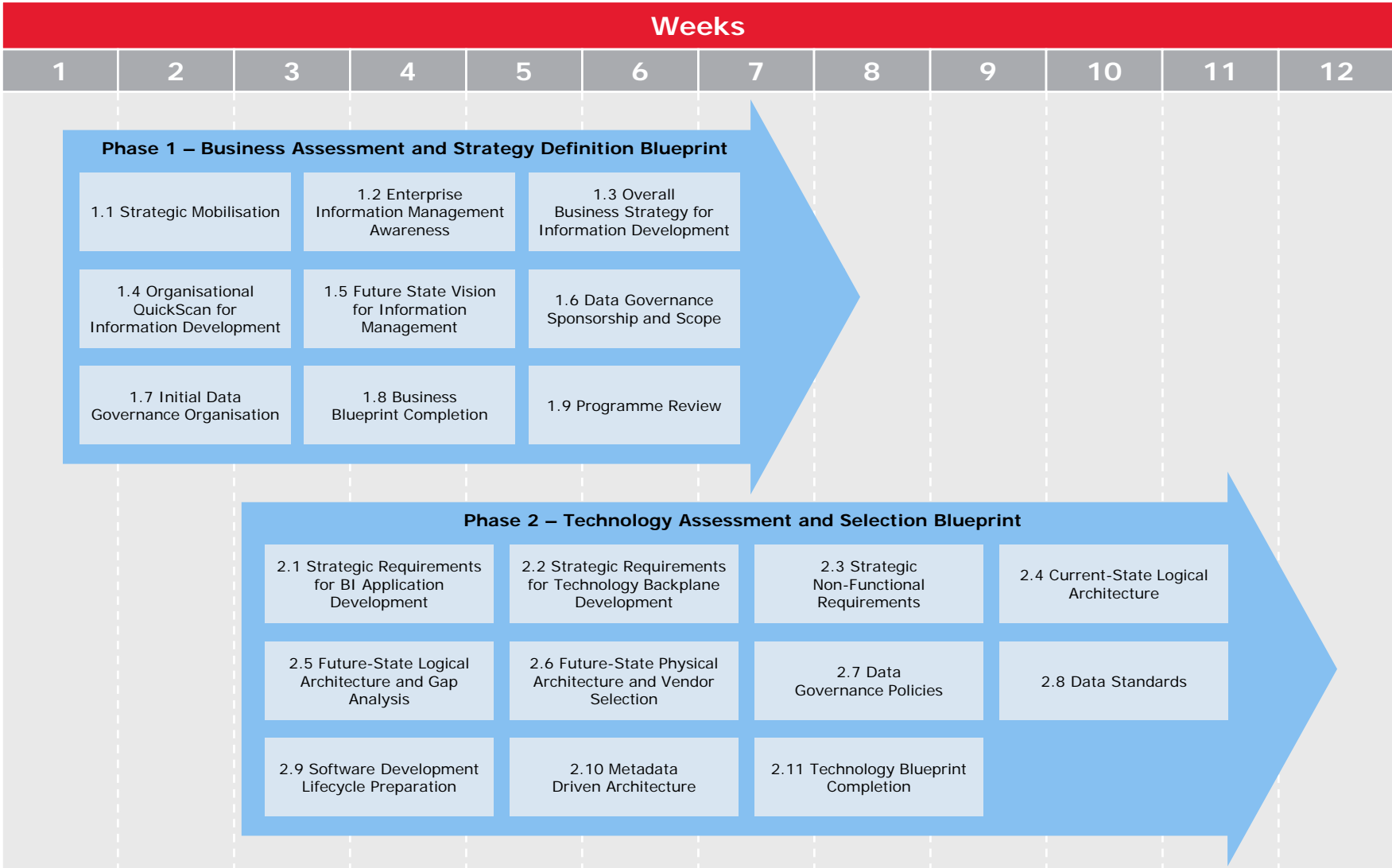
The 5 Phases of MIKE2.0

Information Development through the 5 Phases of MIKE2.0



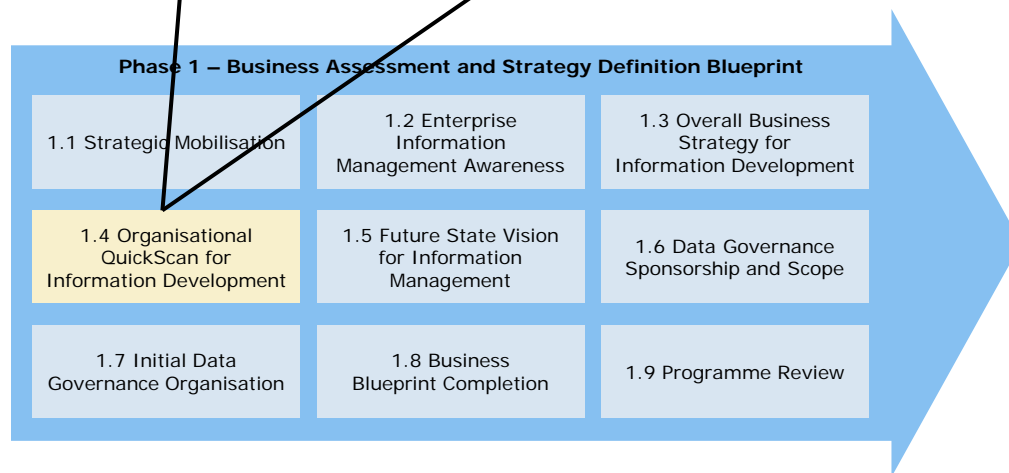
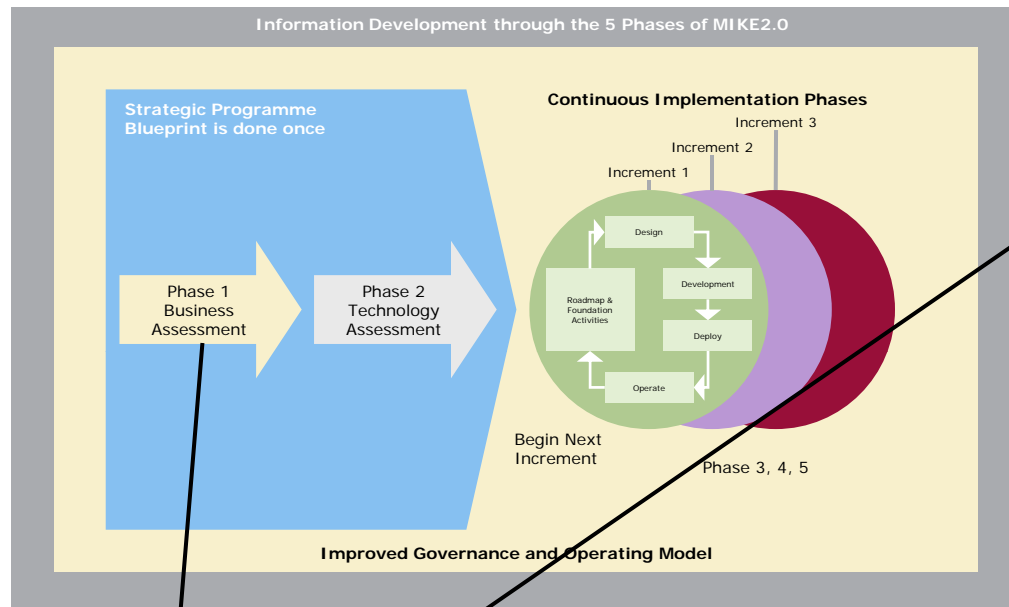
The MIKE2.0 Methodology

Activities and Typical Timeframes for EDM Strategy



MIKE2.0 Methodology: Task Overview

Task 1.4.3 Assess Information Maturity

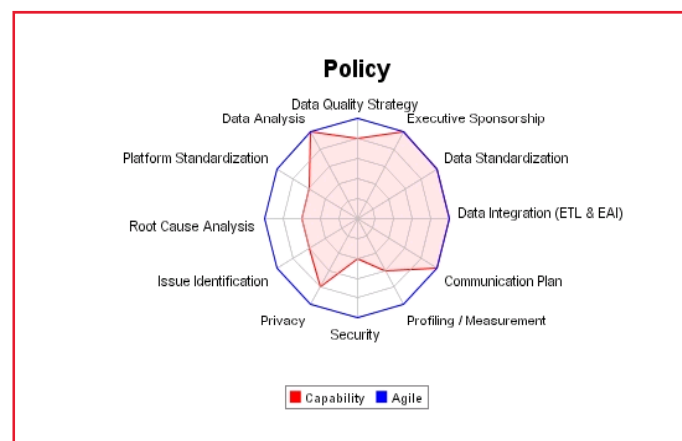
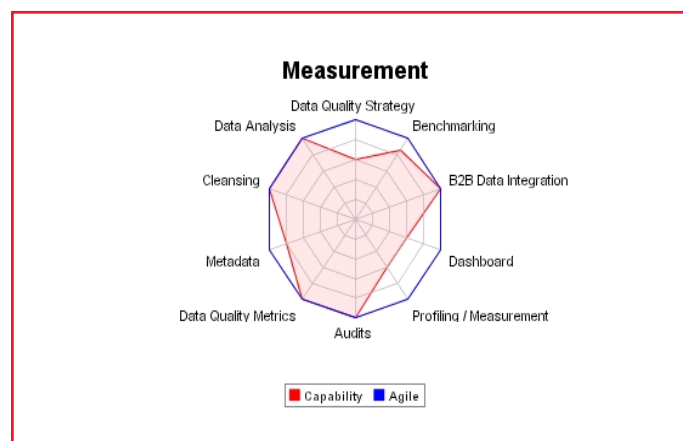
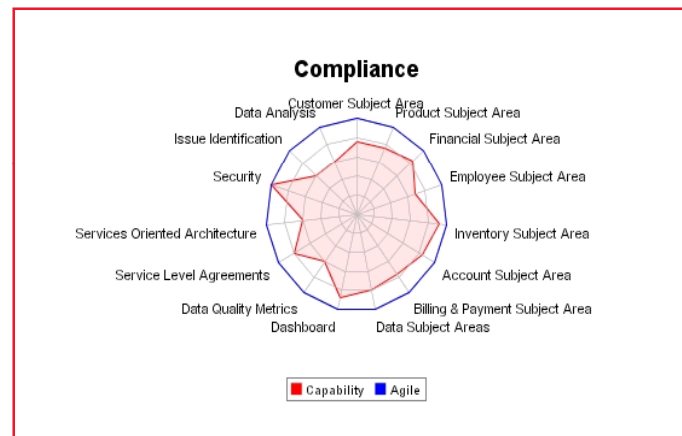
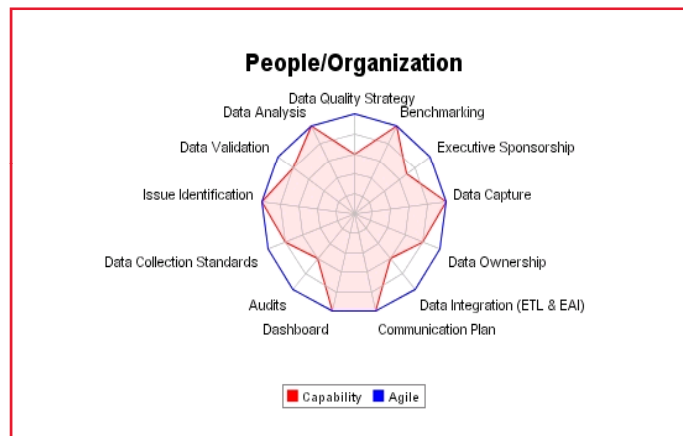


Activity 1.4 Organisational QuickScan for Information Development	Responsible	Status
Task 1.4.1 Assess Current-State Application Portfolio		
Task 1.4.2 Assess Information Maturity		
Task 1.4.3 Assess Economic Value of Information		
Task 1.4.4 Assess Infrastructure Maturity		
Task 1.4.5 Assess Key Current-State Information Processes		
Task 1.4.6 Define Current-State Conceptual Architecture		
Task 1.4.7 Assess Current-State People Skills		
Task 1.4.8 Assess Current-State Organisational Structure		
Task 1.4.9 Assemble Findings on People, Organisation and its Capabilities		

MIKE2.0 Methodology: Task Overview

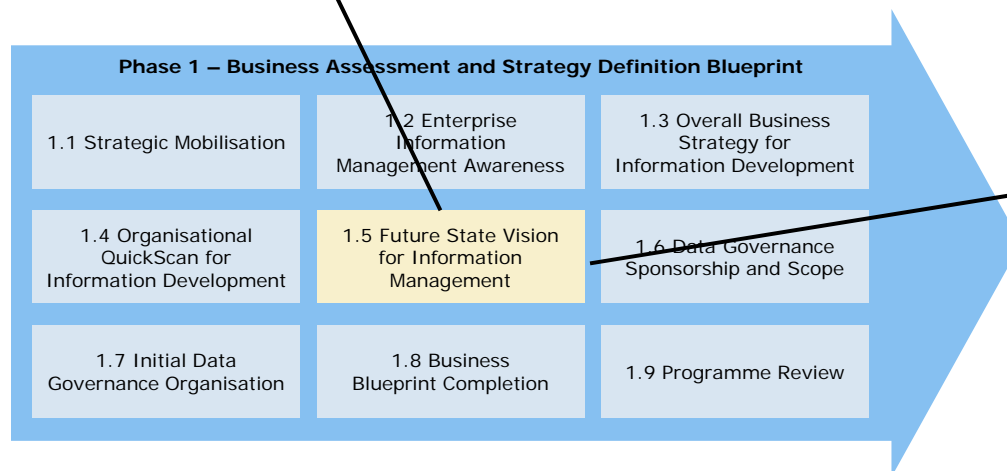
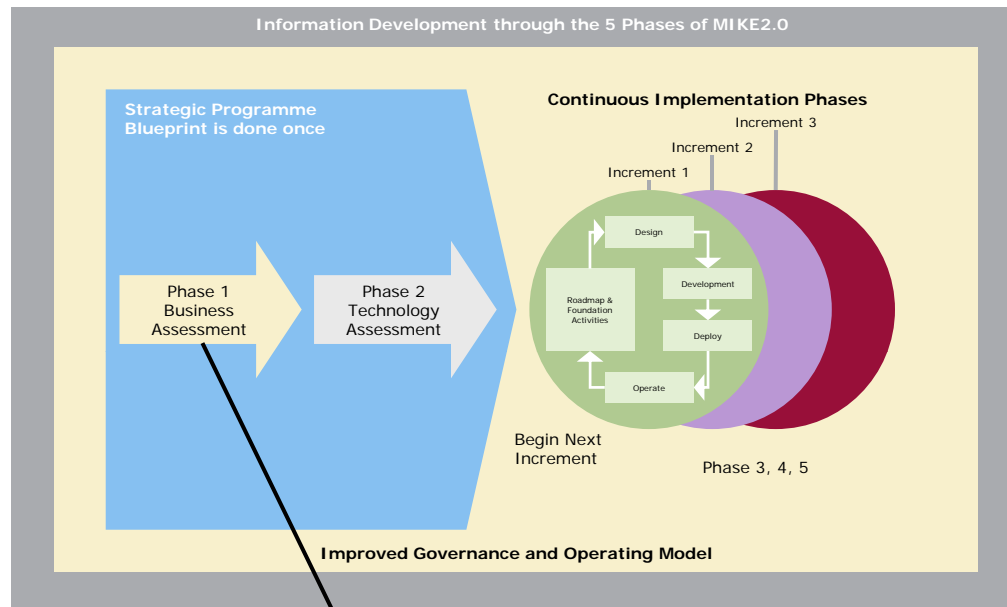
Task 1.4.3 Assess Information Maturity

Show below is the sample output from Information Maturity (IM) QuickScan. IM QuickScan is used as the first step in assessing Data Governance levels across an organisation at an Enterprise level.



MIKE2.0 Methodology: Task Overview

Task 1.5.10 High Level Solution Architecture Options



Activity 1.5 Future-State Vision for Information Management	Responsible	Status
1.5.1 Introduce Leading Business Practices for Information Management		
1.5.2 Define Future-State Business Alternatives		
1.5.3 Define Information Management Guiding Principles		
1.5.4 Define Technology Architecture Guiding Principles		
1.5.5 Define IT Guiding Principles (Technology Backplane Delivery Principles)		
1.5.6 Define Future-State Information Process Model		
1.5.7 Define Future-State Conceptual Data Model		
1.5.8 Define Future-State Conceptual Architecture		
1.5.9 Define Source-to-Target Matrix		
1.5.10 Define High-Level Recommendations for Solution Architecture		

MIKE2.0 Methodology: Task Overview

Task 1.5.10 High Level Solution Architecture Options

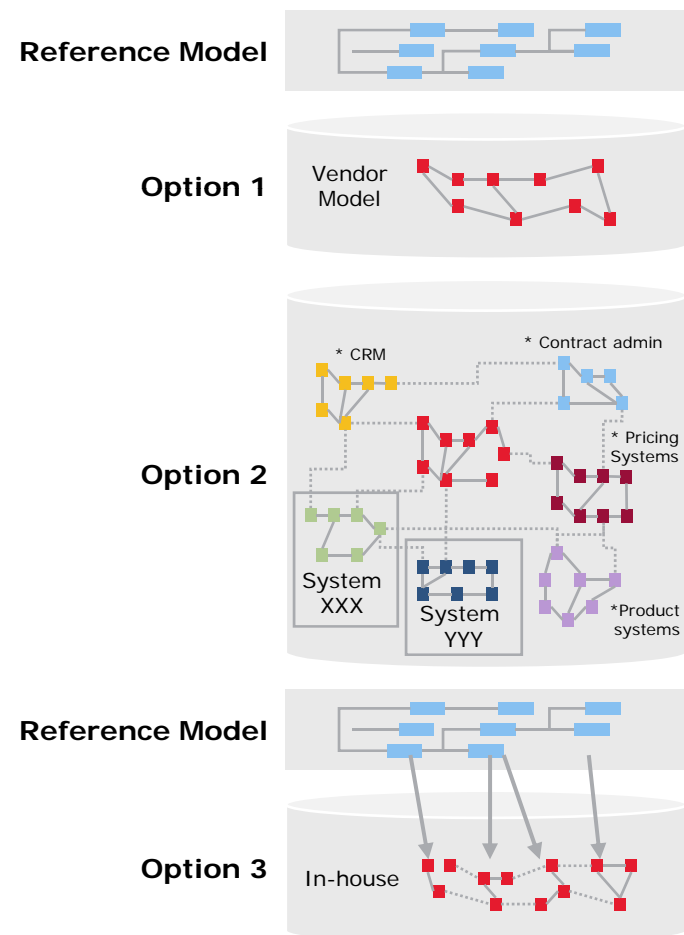
Show below are sample outputs of high-level Solution Architecture options at the level they would be produced for this task. Typically, there will be a few architecture models with supporting text.

This proposed solution includes 3 viable options:

- Use a **Vendor model** as the base logical data model for integrated Operational Data Store, going through a map-and-gap exercise to complete the model. This model is closely aligned to the existing data classification/taxonomy model that has been adopted organisation-wide

- **Develop & build a hybrid data model** consisting of existing data models used across the organisation from existing systems.. These base models will need to be supplemented and integrated with other models currently used in enterprise applications

- **Develop and build** a logical, normalised data model **in-house** for the, based on the existing data classification/taxonomy model that has been adopted organisation-wide and a well-defined set of user requirements



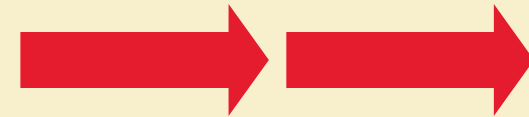
MIKE2.0 Methodology: Task Overview

Task 1.5.10 High Level Solution Architecture Options

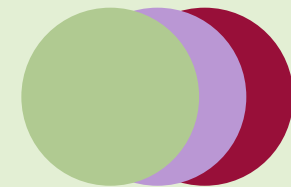


Defining High Level Solution Architecture is just part of the overall architectural approach

1. Revise overall architecture models if required Initial assessments of current-state and vision
2. Definition of Guiding Principles
3. Create Strategic Conceptual Architecture
4. Define High Level Solution Architecture Options
5. Gathering of Strategic Requirements for Integration and Information
6. Definition of the Logical Architecture to understand what capabilities are needed from products
7. Map Logical Architecture to Physical Architecture to pick vendors



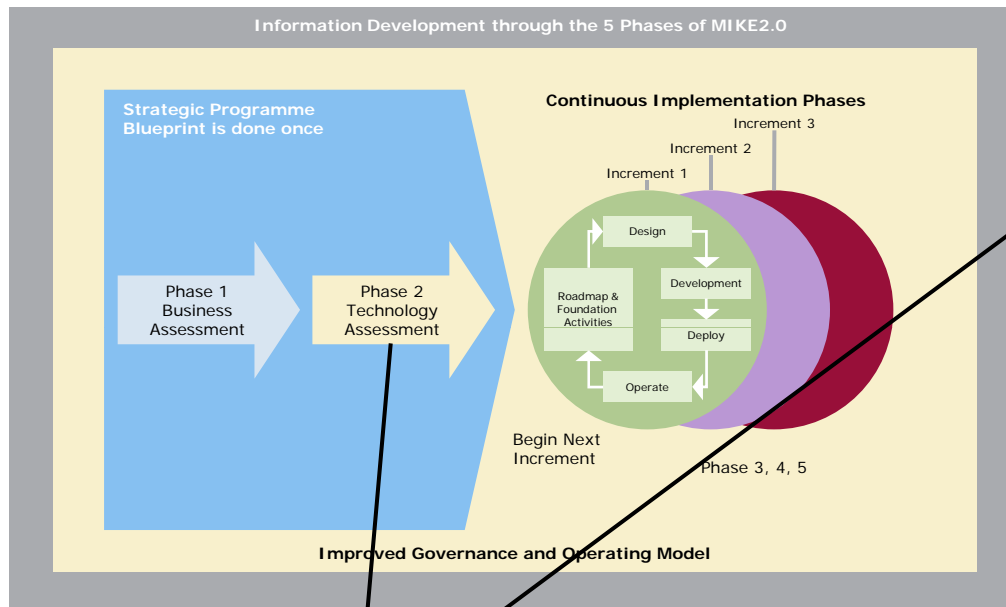
1. Gather Detailed Business Requirements
2. Solution Architecture Definition/Revision
3. Technical and Implementation Architecture



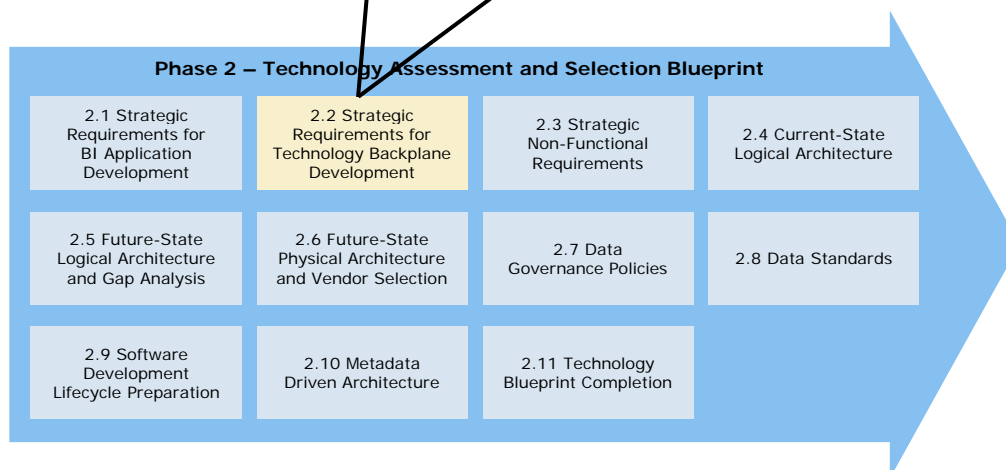
Strategic Business and Technology Architecture activities are done once, more detailed activities are done for each delivery increment

MIKE2.0 Task Overview: Task Overview

Task 2.2.2 Define Foundation Capabilities for Infrastructure



Activity 2.2 Strategic Requirements for Technology Backplane Development	Responsible	Status
2.2.1 Define Foundation Capabilities for Information Development		
2.2.2 Define Foundation Capabilities for Infrastructure Development		
2.2.3 Define Advanced Capabilities for Information Development		
2.2.4 Define Advanced Capabilities for Infrastructure Development		



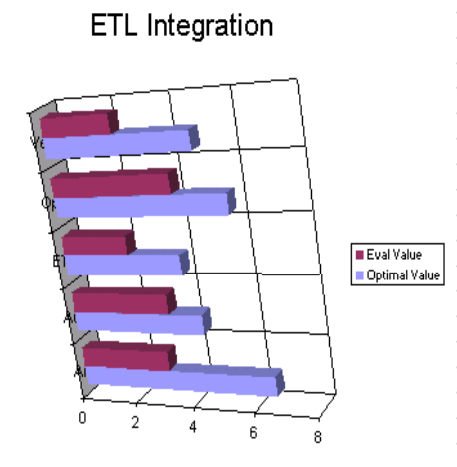
MIKE2.0 Task Overview: Task Overview

Task 2.2.2 Define Foundation Capabilities for Infrastructure

Show below is the sample output from Technology QuickScan. Technology QuickScan is a simple model that can be used as a starting point for defining strategic capabilities across the Technology Backplane. These strategic capabilities can then be used to feed into a vendor selection process in Activity 2.6

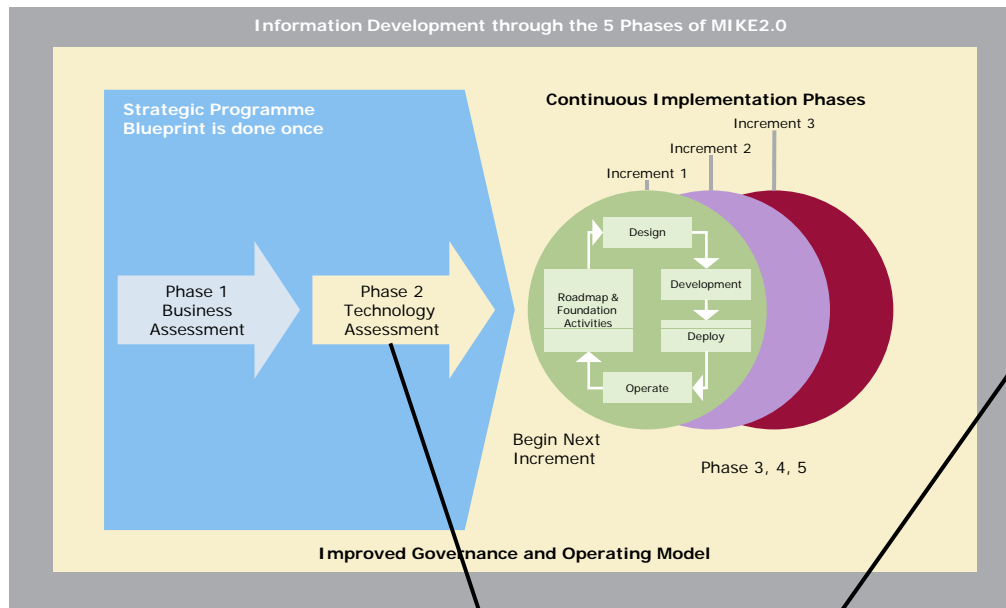
Factors	Categories	Criteria
Architecture	Access	Does the tool handle concurrent usage on overlapping data sets?
	Access	Does the tool function in a c/s fashion using a shared repository?
	Access	Does the tool allow repository access by 3rd party products?
	Convergence	Can the outputs of data profiling be used directly in the tool?
	Convergence	Do outputs feed directly into a metadata repository?
	Convergence	What is the level of integration to a data re-engineering tool?
	Convergence	Can jobs be componentised to be used by interfacing systems?
	Convergence	Is the tool integrated with other integration products (e.g. BRE)?
	Standards	Does the tool support using open standards (e.g. XML and J2EE)?
	Standards	Does the tool support web services interfaces?
	Scalability	Does the tool offer support for parallel processing?
	Scalability	Does the tool support parallel processing by running a single job across multiple CPUs on a server?
	Scalability	Does the tool support parallel processing by running a single job across multiple nodes in a cluster or grid?
	Scalability	Can the tool support projected 3-year business growth volumes?

Evaluation Categories	Optimal Value	Eval Value
Architecture	6.607142857	3.107143
Automation	4.5	3.4
ETL Integration	4.0625	2.3125
Operations	5.882352941	4.117647
Vendor	5	2.416667

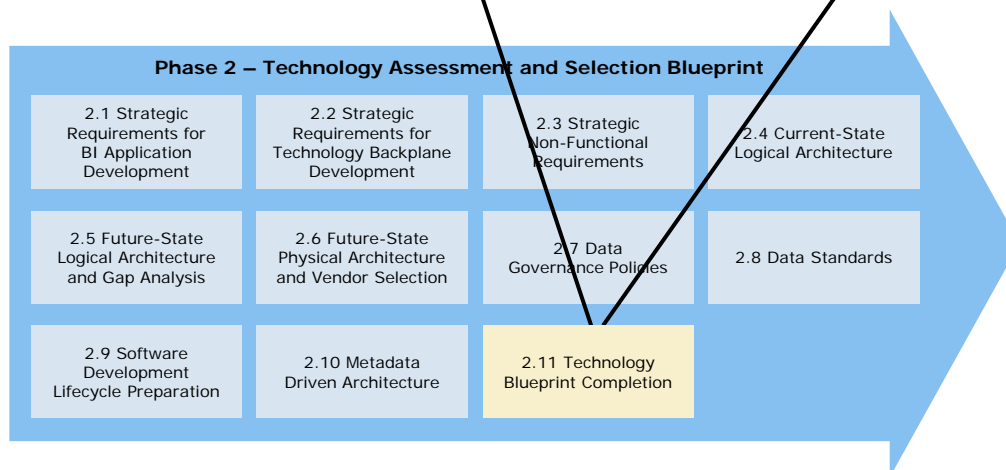


MIKE2.0 Task Overview: Task Overview

Task 2.11.3 Define Capability Deployment Timeline

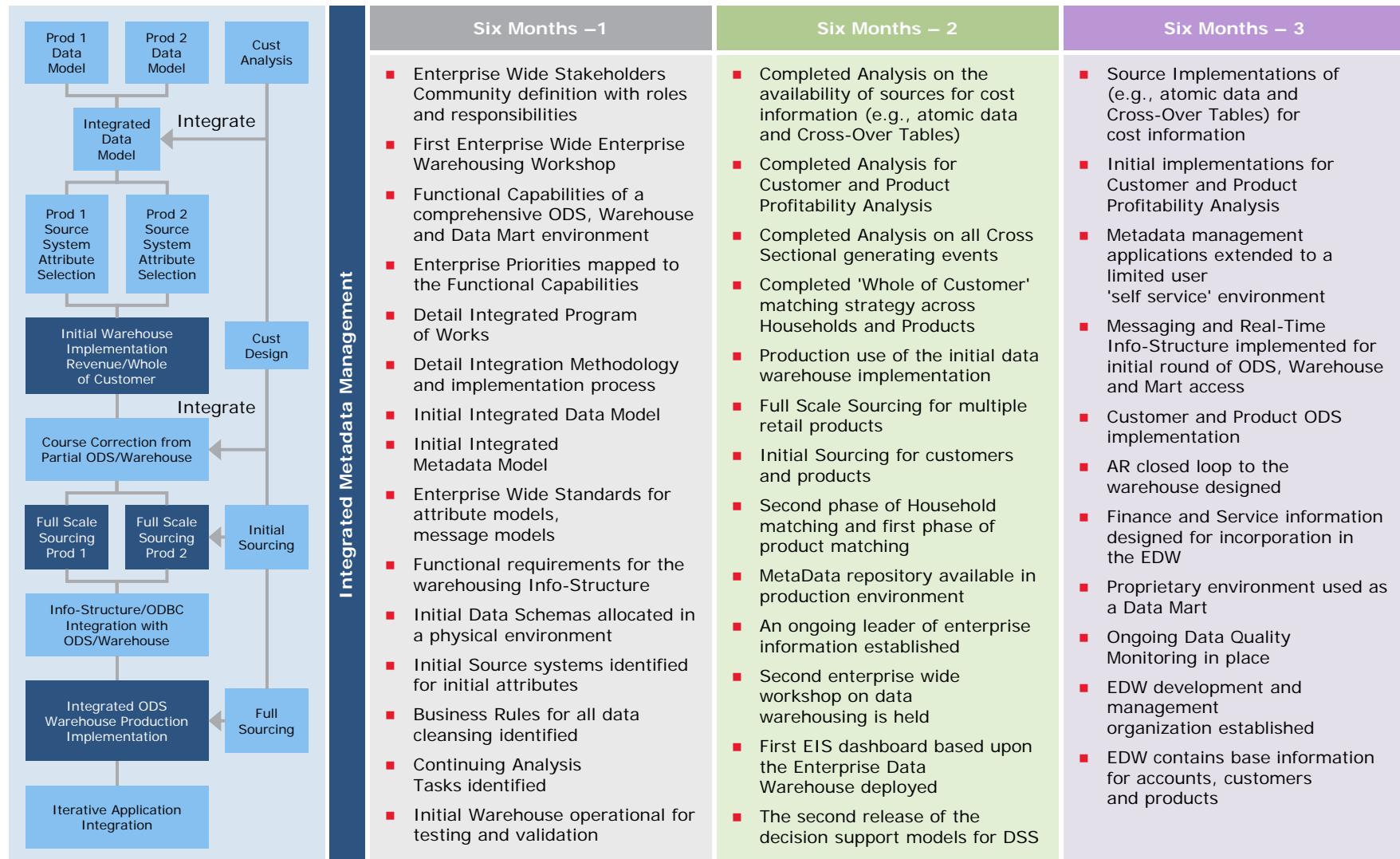


Activity 2.2 Strategic Requirements for Technology Backplane Development	Responsible	Status
Task 2.11.1 Revise Blueprint Architecture Models		
Task 2.11.2 Define Major Technology Risks and Constraints		
Task 2.11.3 Define Business and Technology Capability Deployment Timeline		
Task 2.11.4 Revise Business Case		
Task 2.11.5 Define Roadmap Mission Statements		
Task 2.11.6 Assemble Key Messages to Complete Technology Blueprint		



MIKE2.0 Task Overview: Task Overview

Task 2.11.3 Define Capability Deployment Timeline



MIKE2.0 Task Overview: Task Overview

Task 2.11.3 Define Capability Deployment Timeline

Whole of Customer Revenue View – The focus of this component is on bringing together the 'Whole of Customer' for Product 1 and Product 2 from the perspective of Revenue. Initial matching of customers will begin; however, this will not limit product operational systems from using the information from their own perspectives.

Whole of Product Revenue View – The focus of this component is to begin the 'Whole of Product' view. The revenue information comes from XXXXX (source: XXXX) and XXXX. Product revenue will be tracked by the current segmentation in these systems as well as the product structures in these systems.

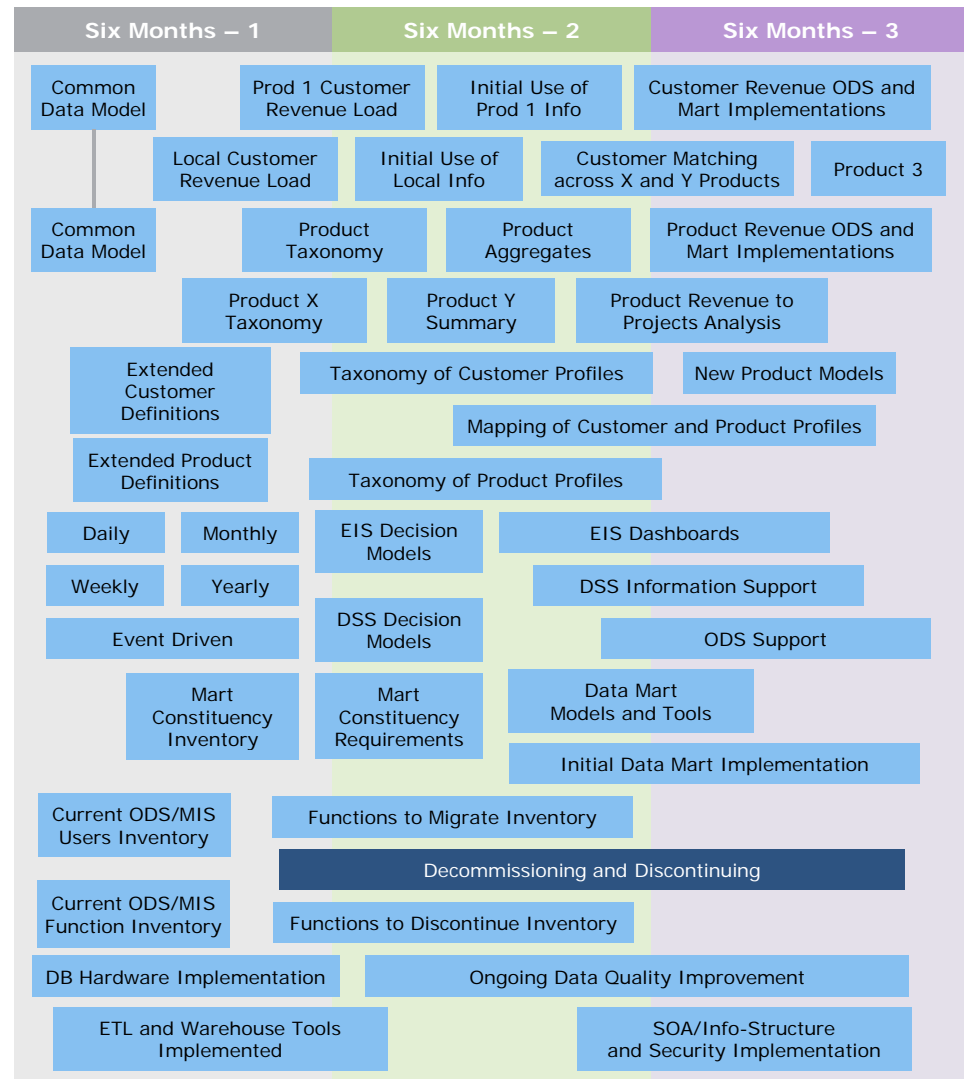
Complex Customer/Product Formulation – The focus of this effort will be to formulate some of the more complex definitions of customer and product. These activities, initially, will perform the required customer and product business analysis to enhance the warehouse data models.

Cross-Sectional Formulations – The focus of these efforts will be to establish the initial understandings of how the warehouse information must be summarized. Examples are: week, month, quarter, year, identified customer or product event.

Dependent Data Mart Formulation – The Dependent Data Marts addressed the specific business support needs of particular Enterprise business constituencies. The Marts can contain historical as well as ODS information. They will be used for a number of activities such as reporting or query as well as analytical activities.

Decommissioning – This thread of activities will focus on the decommissioning of the current high maintenance ODS/MIS implementations. The XXXXXXX, XXXXX and XXXXX and XXXXXXX Databases are key in the decommissioning process. Unneeded capabilities can be terminated while others are target for the new environment.

Common Info-Structure – This effort focuses on the hardware and network environment for the implementation and use of the Enterprise Data Warehouse Environment. ETL and EAI implementations will be key. The hardware options will address ODS, Warehouse and Mart Environments.



Defining an EDM Strategy

Lessons Learned



Define a Strategy that can be Executed

- Launch a large-scale top-down strategy with a bottom-up (narrow and detailed) engagement if necessary
- Make bottom-up engagements **quick win and quick ROI**: data quality and metadata management are typically the best opportunities
- Always define the **tactical within the strategic** and **plan for re-factoring and continuous improvement** in the overall programme plan

Design a Strategy that is Flexible and Meaningful to the Business

- **Expect business requirements to change** – Provide an infrastructure to handle a dynamic business
- Know **your risk areas** in each implementation increment – Focus on foundation activities first
- **Be aware of technology lock-in** and know the cost of "getting out" – Use an open approach
- Break through limiting factors in legacy technology – This is the opportunity to **kill the sacred cows**

Keep the Business Engaged

- Get **technology backplane capabilities "out in front"**, but also design the strategy to **deliver meaningful business value from the onset** or you will lose interest and key staff within a few months
- **Communicate continuously** on the planned approach defined in the strategy – the overall Blueprint is the communications document for the life of the programme
- Work closely with users on the value of their the data, not just on system functions – Design an approach that truly treats data with the attention it deserves



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