Better Business Intelligence through an Information Development Approach
A Management Overview

Introducing MIKE2.0
An Open Source Methodology for Information Development
http://www.openmethodology.org
Better Business Intelligence through an Information Development Approach

**Agenda**

- **Better Business Intelligence**
  - The Keys to Better Business Intelligence
  - Business Drivers for Better Business Intelligence
  - Guiding Principles for Better Business Intelligence

- **MIKE2.0 Methodology**
  - 5 phased-approach to Better Business Intelligence
  - Example Task Outputs from Strategy Activities

- Lessons Learned
EDM is the Enabler for Better Business Intelligence
Scope within BearingPoint's IM Solution Suite

Information Management Solution Suite
Delivered through a Collaborative Approach with the IM Profession and our Alliance Vendors

Enterprise Information Management
Supported by Solution Capabilities that provide a foundation for Suite Delivery

BI and EPM
Information Asset Management
Access, Search and Content Delivery

Enterprise Data Management
Enterprise Content Management

Information Strategy, Architecture and Governance

Sets the new standard for Information Development through an Open Source Offering

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Business Intelligence refers to a set of techniques and technologies that are used to gather information from a repository through reports and analytical tools.

- Reporting and Analytics can be considered the "front end" of the Business Intelligence environment.
- Reporting and analytics involve a combination of automated and user-driven steps.

Business Intelligence typically involves accessing repositories where data is brought together from many different systems across the organisation.

- Can be considered the "back-end" of the Business Intelligence environment.
- The back-end is generally an automated process.

The delivery approach for Business Intelligence projects is different than functional or infrastructure-related projects.

- Seen as more of a "journey" than more functionally-oriented development – the focus is on incremental delivery.
- Testing can be challenging – it is inherently more difficult to simulate all user cases.
In the past many Business Intelligence initiatives have failed:

- Most failures were typically due to the "back-end" or the SDLC process
- Organisations want a better Business Intelligence environment more than ever – and the capabilities they need today are even more sophisticated

**Back-end issues** have primarily been related to:

- Data Integration
- Metadata Management
- Data Quality Management
- Data Modelling

**Delivery approach** issues were primarily related to:

- Lack of a strategic vision that allowed for incremental delivery
- Poorly defined requirements
- Inadequate testing
- Architectural flexibility

In order to move to a reliable and effective Business Intelligence environment, the focus must be on getting these areas right and taking an Information Development approach.
Business Intelligence
Business Drivers for Better Business Intelligence

**Achieve**
- A simplified mechanism for users to get access to the data they want
- The ability to track a historical view of your business at any point in time
- Be able to aggregate information at a summary level or drill into more detail
- Reduced complexity in the information management environment through data standards
- An ability to trace the flow of information across all systems in the architecture
- Scalability for new business requirements off the existing model

**Avoid**
- Making decisions without supporting facts
- Users not being able to get to the detail or historical view that they need
- Issues with reconciling common data across all systems
- Inefficient software development processes that increase cost and slow delivery
- 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

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1. **Keep the strategy at the vision level** – Establish the Blueprint and never start from scratch – use best practice frameworks. Keep things at a strategic level whilst still following a diligent approach to requirements.

2. **Use a requirements-driven approach.** Even when using off-the-shelf information models, requirements must drive the solution. Plan to go through multiple iterations of requirements gathering.

3. **Develop a BusinessTime model for synchronisation.** Be prepared to handle growing requirements for the synchronisation of data in real-time into the analytical environment. Focus heavily on the "time dimension" as part of your architecture.

4. **Use a well-architected approach.** An analytical environment is not a dumping ground for data. Data that is not integrated or conformed does not provide the value users want.

5. **Investigate & fix DQ problems early.** Data quality issues make it difficult to integrate data into the analytical environment and can make user reports worthless. Start with data profiling to identify high risk areas in the early stages of the project.

6. **Use standards to reduce complexity.** The Business Intelligence environment is inherently complex – to maximise benefits to the user the system must be easy to use. One of the most important things that can be done is to develop a set of open and common standards related to data, integration and infrastructure.

7. **Build a metadata-driven solution.** A comprehensive approach metadata management is the key to reducing complexity and promoting reusability across infrastructure. A metadata-driven approach makes it easier for users to understand the meaning of data and to understand how lineage of data across the environment.

8. **Store data at a detailed and integrated level.** Aggregation and integration is far easier when you store data at a detailed level. If you don't store detailed analytical data, some users will typically not get all the information they want.

9. **Design for continuous, increment-based delivery.** Analytical environments should built through a "journey".

10. **Use a detailed, method-based approach.** We use the MIKE2.0 Methodology, BearingPoint's open source approach for Information Development.
Guiding Principles for Better Business Intelligence
Use a Well-Architected Approach

Customers Accessing the Organisation through Different Channels

1. Enterprise Applications
   - Marketing
   - Sales
   - Customer
   - Collections
   - Fraud Detection
   - Ext Bureaus

2. Batch/Events/Objects/Messages Integration Infrastructure
   - Real Time OLAP(s)
   - Real Time Mart(s)

3. Composite Applications
   - Application
   - Portals etc.
   - 3rd Party Enablement

4. Common or Shared Data
   - Integrated Operational Data Stores
     - Customer
     - Product
     - Partner
     - Employee
     - Transactions
     - Reference Data
   - Analytical Data Stores

5. Data Quality Management

6. Integrated Operational Data Stores
   - Customer
   - Product
   - Partner
   - Employee
   - Transactions
   - Reference Data

7. Analytical Data Stores

8. Business Intelligence Applications
   - Integrated Reporting
   - Dashboards
   - Detailed Analytics
   - EIS
   - DSS
   - OLAP
   - Analytical Apps
   - Analytics Models
   - External Services

9. Common Services & Metadata Management
   - CDI Services
     - Table/Attribute Assessment
     - Relationship Assessment
   - PDI Services
     - Data Replication
     - Data Transfer
     - Data Synchronisation
   - Business Services
     - J2EE
     - Enter Svcs EB/JB
     - JMS
     - JNCI
     - Policies
     - JSP Services
   - Metadata Services
     - Record Matching
     - Record De-Duping

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Guiding Principles for Better Business Intelligence
Take a Metadata-Driven Approach

**Improve business reporting and management decisioning**
- Simplified and reduced effort in reporting & reconciliation processes
- Better data quality & consistency
- Improved management decisioning process and outcomes
- Improve user confidence in the data
- Make it easier for users to create their own reports

**Meet statutory reporting requirements by providing a mechanism for enterprise wide timely reporting**
- Demonstrate the lineage (or history) of how a number is calculated
- Simplified and reduced effort in reporting
- Reduced impact/cost from potential non compliance

**Facilitate future development of analytical applications**
- Provide a view on what information exists and where to find it
- Build reports on existing information
- Simplified, reduced effort, duration and cost of future development projects

**Improve maintenance of the Enterprise Reporting System**
- By allowing impact analysis of change before starting
- Improve estimates of change costs
Data Lineage metadata traces the lifecycle of information between systems, including the operations that are performed upon the data. Data Lineage has grown in importance over the past few years, particularly with renewed compliance requirements. Some vendors now offer distinct products in this space.
Guiding Principles for Better Business Intelligence

Store Data at a Detailed and Integrated Level

**Subject-oriented**

Operational systems
- Ops support
- Capability planning
- etc

Subject-oriented, concerned with both database design and process design

DDW
- Inventory
- Asset
- etc

Data-driven, subject-oriented, concerned only with data modeling and database design

**Integrated**

Operational systems
- Data (dmmyy)
- Data (abs)
- Data (Julian)

DDW
- male, female
- M,F
- 0,1

The DW will allow consolidated reporting across multiple source systems that is accessible across enterprise. The DW will be a unified "single point of truth" for reporting of key corporate information

**Time-variant**

Operational systems

Data has values that are current:
- Time horizon – 60-90 days
- Table keys may or may not have a time element
- Data can be updated

DDW

Data is a series of snapshots:
- Time horizon – 5-50 years
- Table keys have a time element
- Once a snapshot is made, record cannot be updated

**Non-volatile**

Operational systems

Insert, Replace, Change

Data is regularly updated on a record-by-record basis

DDW

Load, Access

Data is loaded into the DW and is accessed there, but once the snapshot of data is made, the data in the DDW does not change

Ref: Inmon, W.H. (1997) "What is a Data Warehouse?", Tech Topic Vol.1 No.1, Prism Solutions
The MIKE2.0 Methodology
An Open Source Methodology for Information Development

What is MIKE2.0?
- MIKE stands for Method for an Integrated Knowledge Environment
- 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 Architecture for the Federated Enterprise) 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

Strategic Programme Blueprint is done once

Phase 1
Business Assessment

Phase 2
Technology Assessment

Continuous Implementation Phases

Increment 1
Design
Roadmap & Foundation Activities
Deploy
Develop
Operate

Increment 2
Phase 3, 4, 5

Increment 3

Begin Next Increment

Improved Governance and Operating Model
MIKE2.0 Methodology: Phase Overview
Typical Activities Conducted as part of the Strategy Phases

**Phase 1 – Business Assessment and Strategy Definition Blueprint**

1.1 Strategic Mobilisation
1.2 Enterprise Information Management Awareness
1.3 Overall Business Strategy for Information Development
1.4 Organisational QuickScan for Information Development
1.5 Future State Vision for Information Management
1.6 Data Governance Sponsorship and Scope
1.7 Initial Data Governance Organisation
1.8 Business Blueprint Completion
1.9 Programme Review

**Phase 2 – Technology Assessment and Selection Blueprint**

2.1 Strategic Requirements for BI Application Development
2.2 Strategic Requirements for Technology Backplane Development
2.3 Strategic Non-Functional Requirements
2.4 Current-State Logical Architecture
2.5 Future-State Logical Architecture and Gap Analysis
2.6 Future-State Physical Architecture and Vendor Selection
2.7 Data Governance Policies
2.8 Data Standards
2.9 Software Development Lifecycle Preparation
2.10 Metadata Driven Architecture
2.11 Technology Blueprint Completion
MIKE2.0 Methodology: Task Overview
Task 1.3.2 and 1.3.3 Define Strategic CSFs and KPIs

Information Development through the 5 Phases of MIKE2.0

Activity 1.3 Overall Business Strategy for Information Development

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<td>1.3.2 Define Strategic Critical Success Factors (CSFs)</td>
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<td>1.3.3 Define Strategic Key Performance Indicators (KPIs)</td>
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<td>1.3.4 Define Strategic Success Measures</td>
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<td>1.3.5 Define Strategic Change Drivers</td>
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<tr>
<td>1.3.7 Define High-Level Information Requirements</td>
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Phase 1 – Business Assessment and Strategy Definition Blueprint

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MIKE2.0 Methodology: Task Overview
Task 1.3.2 and 1.3.3 Define Strategic CSFs and KPIs

Subject Area Analysis (Requirements Gathering) – Example Template

<table>
<thead>
<tr>
<th>Priority requirements</th>
<th>Support Business Processes covering:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 Average monthly bills for last x months</td>
<td>Purpose</td>
</tr>
<tr>
<td></td>
<td>- Prevent bad debt situation</td>
</tr>
<tr>
<td></td>
<td>- Target for selling more services</td>
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Analytical Reporting provides focus to address KPI’s which drive the business

Linear | Quantitative | Balanced Score Card | What if Analysis

Key Performance Indicators (KPI’s)

Critical Success Factors (CSFs)

Results is used to identify per report potential:

- Dimensions
- Measures
- Elements/attributes – Key/Non-Key
- Hierarchies
- Aggregates
- Areas of concern (Accuracy)
- History – Slowly Changing Dimensions, etc.

Note: Further investigation to confirm, go to detail, describe is pursued later.
MIKE2.0 Methodology: Task Overview
Task 1.5.8 Define Future-State Conceptual Architecture

**Information Development through the 5 Phases of MIKE2.0**

**Continuous Implementation Phases**

- **Increment 1**
  - Phase 1 – Business Assessment
    - 1.1 Strategic Mobilisation
    - 1.2 Enterprise Information Management Awareness
    - 1.4 Organisational QuickScan for Information Development
    - 1.7 Initial Data Governance Organisation
  - Phase 2 – Technology Assessment
    - 1.3 Overall Business Strategy for Information Development
    - 1.5 Future State Vision for Information Management
    - 1.8 Business Blueprint Completion

- **Increment 2**
  - Phase 3, 4, 5
    - 1.6 Data Governance Sponsorship and Scope
    - 1.9 Programme Review
    - 1.5.7 Define Future-State Conceptual Data Model
    - 1.5.8 Define Future-State Conceptual Architecture

- **Increment 3**
  - Phase 3, 4, 5
  - 1.5.9 Define Source-to-Target Matrix
  - 1.5.10 Define High-Level Recommendations for Solution Architecture

**Activity 1.5 Future-State Vision for Information Management**

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MIKE2.0 Methodology: Task Overview
Task 1.5.8 Define Future-State Conceptual Architecture

Application Development Business Model

Technological Backplane – Information Development and Infrastructure Development

Common Services
Enterprise Business Management
Enterprise Content Management

Foundation Capabilities for Information

Foundation Capabilities for Infrastructure
MIKE2.0 Methodology: Task Overview
Task 1.5.8 Define Future-State Conceptual Architecture

**Business Intelligence**
- Decision Support Analysis
- Integrated Reporting
- Executive Dashboards

**Application Development Business Model**
- Enterprise and Domain Applications
- Composite Applications
- Business Intelligence

**Technology Backplane – Information Development and Infrastructure Development**
- Common Services
- Enterprise Business Management
- Enterprise Content Management
- Enabling Technologies
- Foundation Capabilities for Information
- Foundation Capabilities for Infrastructure

**Common or Shared Repositories**
- Integration Repositories
  - Transient Process Data
  - Service Containers
  - Metadata Stores
- Reference Data Stores
- Master Data Stores
- Operational Data Store (ODS)
- Data Warehouse
- Data Marts
  - Profit
  - Sales
  - Other
  - Revenue
  - Marketing
  - Other

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MIKE2.0 Methodology: Task Overview
Task 1.5.8 Define Future-State Conceptual Architecture

Key Information Development Components Required for Better Business Intelligence

**Data Profiling** typically forms the first step in building capabilities for Information Development by providing a quantitative assessment of an organisation’s data. It also typically involved an ongoing monitoring process that is put in place once the solution has been implemented.

**Data Standardisation** refers to the conditioning of input data to ensure that the data has the same type of content and format. Standardised data is important for effectively matching data, and facilitating a consistent format for output data.

**Data Matching** is the ability to provide probabilistic matching to any relevant attribute – evaluating user-defined full fields, parts of fields, or individual characters. This is done by assigning agreement weights and disagreement weights to key data elements, based on a number of factors such as frequency distribution, discriminating value, and reliability. Data Matching results can be used for linkages and de-duplication.

**Data Modelling** is a set of techniques used to move from a very high level expression of information requirements to the detailed physical implementation of data structures. The Conceptual Data Model should typically precede the Logical Data Model (LDM), and Physical Database Design and Database Implementation follow the development of the LDM.

**Data Enrichment**: Data enrichment involves adding additional information to data records to fill gaps in the core set of data. The most commonly added enrichment data involves location information such as geocodes or delivery identifiers, customer contact information, personal information such as date-of-birth or gender codes, demographic information or external events.

**Metadata** is ‘data about data’, providing further descriptors to turn data into information. As the most basic level, it means siloed metadata repositories that provide either additional information in the case of data dictionaries or may provide an abstraction layer in a user-driven reporting environment.
### MIKE2.0 Methodology: Task Overview

**Task 1.5.8 Define Future-State Conceptual Architecture**

#### Key Infrastructure Development Components Required for Better Business Intelligence

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Network</strong></td>
<td>The <strong>Network</strong> is made up of LANs, WAN, Intranet and Internet capabilities. The network is a foundation capability for nearly all applications and processes.</td>
</tr>
<tr>
<td><strong>Process Automation</strong></td>
<td>Provides fulfilment of both long-lived and short-lived business processes. Long-lived processes tend to be tightly-coupled (e.g. fulfilment of an order) whereas short-lived processes are loosely coupled (e.g. synchronization of customer contact data). Long-lived processes oftentimes involve human interactions; short-lived processes are more likely to be fully automated.</td>
</tr>
<tr>
<td><strong>ETL</strong></td>
<td>The <strong>ETL</strong> process is typically used for data integration; its analogous components for application integration include middleware and process automation. There is overlap and convergence in these areas: ETL tools can be used for application integration through application tier, application integration technologies can be used for data integration. At this time, vendors still tend to have multiple products in this space and the products tend to perform better in their primary area of functionality.</td>
</tr>
<tr>
<td><strong>Middleware</strong></td>
<td><strong>Middleware</strong> involves the use of application integration technologies such as adapters, connectivity layer. As capabilities become more advanced, integration components use the <strong>Enterprise Service Bus</strong> as a common communications channel where services interact with one another. This layer provides a logical data communication session and services to allow reliable communications between inter-connected systems.</td>
</tr>
<tr>
<td><strong>Platform</strong></td>
<td>The <strong>Platform</strong> consists of the hardware and associated software that provide capabilities across the technical backplane. Mainframes, midranges and database management systems are fundamental to this layer, which also includes software that supports the running of integration suites. The platform layer also consists technologies such as the database RDBMS.</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Many aspects of <strong>Security</strong> – Access management, single sign on, encryption, etc. would be required part of the SAFE Technology Backplane. A number of vendor solutions exist to address security issues—most requiring custom configuration changes.</td>
</tr>
<tr>
<td><strong>Operations and Monitoring</strong></td>
<td>Of the environment is included at this layer. All software and hardware needed to operate and manage the technology are included. Management software includes the product necessary to manage the complete SDLC process such as configuration management, defect management, deployment and testing tools.</td>
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SOA and Enabling Technologies for Better Business Intelligence

**Interfaces Services** encapsulate discrete application functions and expose them via the Common Messaging Model. Although logically seen as one entity, an Interface Service often contains multiple physical components. Interface Service and implemented as either *Service Requesters* or *Service Providers*. Multiple services can be brought together into a **Composite Application**.

**Data Management Services** are specialized Business Services that facilitate data synchronization. In the past, the functionality provided by Data Management services has been associated with batch data integration and offline data quality improvements. The need for real-time synchronization of data to distributed systems mandates that these capabilities be available for invocation in an event-based fashion. Examples include standardisation services, matching services and de-duplication services.

Across the Enterprise, redundant data exists in a number of applications for multiple entities. The **Data Mastering Model** governs the exchange of information between applications by defining the rules for data ownership of a particular business event.

The **Common Messaging Model (CMM)** is the framework for modelling "data in motion" and enables standardised information exchange across multiple applications, departments or organizations. CMM Messages are built based on standards (e.g. industry models, corporate standards) and evolve over time based on usage and new requirements.

**Services Orchestration** provides discovery and scripting capabilities that allow is to find services across the enterprise, link them together with orchestration scripts and run the execution of this process with an orchestration engine. Services Orchestration is supported by open and common standards for the development, integration and operations of an enterprise services environment.

A centralised **Service Container** provides the repository of existing services; different technologies use different types of service containers (e.g. UDDI for Web Services). In addition m

**Metadata Services** provide fine and coarse grained services to build reusable platform independent metadata capabilities to drive a Model Driven Architecture. Metadata Services are enabled by the Foundation Capabilities and Enabling Technologies for metadata that have emerged from standards bodies such as the Object Management Group (OMG), the Java Community, Vendors and other standards groups. There is a metadata management overlay across each architectural component.
Better Business Intelligence

- **Business Intelligence** involves the analysis, presentation and delivery of information to business users. The Business Intelligence environment is greatly enhanced by more advanced Information Management capabilities, which can be used to enable event-based decisions and analysis.

**Decision Support Analysis** relates to the facilitation of decision-making through information discovery tools. This capability is delivered ad hoc querying systems, which support users deductive analysis processes.

**Integrated Reporting** is a key capability offered through BI. This capability is not just about supporting an organisation's reporting needs, but increasing organisational confidence by providing single, uniform representation of an organisation's data. Even though BI offers a wealth of capabilities, the most utilised and valuable is integrated reporting.

**Executive Dashboards** are a specialised BI capability aimed providing decision makers with a visualisation of the status of their organisation. These tools strive to deliver quality information, not quantity.

These capabilities are used to provide:

- **Transactional Reporting** concerns itself with measuring the volume of business activity of the company. These are usually broken down by channels, geography, departments, etc.
- **Functional Reporting** concerns itself with the performance level of business functions. These may include volumes, productivity, average duration, achievement of service levels, etc.
- **Analytical Reporting** attempts to discover new business knowledge, patterns of behavior, complex relationships and other things from a body of data. Also known as 'data mining'. It usually requires the association of data from a variety of sources.
MIKE2.0 Methodology: Task Overview
Task 1.5.10 High Level Solution Architecture Options

Information Development through the 5 Phases of MIKE2.0

Continuous Implementation Phases

Phase 1 – Business Assessment and Strategy Definition Blueprint

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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 Task Overview: Task Overview
Task 2.2.2 Define Foundation Capabilities for Infrastructure Development through the 5 Phases of MIKE2.0

- Continuous Implementation Phases:
  - Phase 1: Business Assessment
  - Phase 2: Technology Assessment
  - Phase 3, 4, 5: Begin Next Increment

Activity 2.2 Strategic Requirements for Technology Backplane Development

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</table>

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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

<table>
<thead>
<tr>
<th>Factors</th>
<th>Categories</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td></td>
<td>Does the tool handle concurrent usage on overlapping data sets?</td>
</tr>
<tr>
<td>Access</td>
<td></td>
<td>Does the tool function in a c/s fashion using a shared repository?</td>
</tr>
<tr>
<td>Access</td>
<td></td>
<td>Does the tool allow repository access by 3rd party products?</td>
</tr>
<tr>
<td>Convergence</td>
<td></td>
<td>Can the outputs of data profiling be used directly</td>
</tr>
<tr>
<td>Convergence</td>
<td></td>
<td>Do outputs feed directly into a metadata repository</td>
</tr>
<tr>
<td>Convergence</td>
<td></td>
<td>What is the level of integration to a data re-engine</td>
</tr>
<tr>
<td>Convergence</td>
<td></td>
<td>Can jobs be componentised to be used by systems?</td>
</tr>
<tr>
<td>Convergence</td>
<td></td>
<td>Is the tool integrated with other integration products (e.g. BizTalk)</td>
</tr>
<tr>
<td>Standards</td>
<td></td>
<td>Does the tool support using open standards (e.g. J2EE)</td>
</tr>
<tr>
<td>Standards</td>
<td></td>
<td>Does the tool support web services interfaces</td>
</tr>
<tr>
<td>Scalability</td>
<td></td>
<td>Does the tool offer support for parallel processing?</td>
</tr>
<tr>
<td>Scalability</td>
<td></td>
<td>Does the tool support parallel processing by running a job across multiple CPUs on a server?</td>
</tr>
<tr>
<td>Scalability</td>
<td></td>
<td>Does the tool support parallel processing by running a job across multiple nodes in a cluster or grid?</td>
</tr>
<tr>
<td>Scalability</td>
<td></td>
<td>Can the tool support projected 3-year business volumes?</td>
</tr>
</tbody>
</table>
MIKE2.0 Task Overview: Task Overview
Task 2.11.3 Define Capability Deployment Timeline

Information Development through the 5 Phases of MIKE2.0

Phase 1 - Business Assessment
Phase 2 - Technology Assessment
Phase 3, 4, 5 - Continuous Implementation Phases
Phase 6 - Improved Governance and Operating Model

Activity 2.11 Technology Blueprint Completion

<table>
<thead>
<tr>
<th>Activity 2.11 Technology Blueprint Completion</th>
<th>Responsible</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 2.11.1 Revise Blueprint Architecture Models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2.11.2 Define Major Technology Risks and Constraints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2.11.3 Define Business and Technology Capability Deployment Timeline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2.11.4 Revise Business Case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2.11.5 Define Roadmap Mission Statements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 2.11.6 Assemble Key Messages to Complete Technology Blueprint</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Phase 2 - Technology Assessment and Selection Blueprint

- 2.1 Strategic Requirements for BI Application Development
- 2.2 Strategic Requirements for Technology Backplane Development
- 2.3 Strategic Non-Functional Requirements
- 2.4 Current-State Logical Architecture
- 2.5 Future-State Logical Architecture and Gap Analysis
- 2.6 Future-State Physical Architecture and Vendor Selection
- 2.7 Data Governance Policies
- 2.8 Data Standards
- 2.9 Software Development Lifecycle Preparation
- 2.10 Metadata Driven Architecture
- 2.11 Technology Blueprint Completion

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### MIKE2.0 Task Overview: Task Overview

**Task 2.11.3 Define Capability Deployment Timeline**

**Six Months – 1**
- Enterprise Wide Stakeholders Community definition with roles and responsibilities
- First Enterprise Wide Enterprise Warehousing Workshop
- Functional Capabilities of a comprehensive ODS, Warehouse and Data Mart environment
- Enterprise Priorities mapped to the Functional Capabilities
- Detail Integrated Program of Works
- Initial Integrated Data Model
- Initial Integrated Metadata Model
- Enterprise Wide Standards for attribute models, message models
- Functional requirements for the warehousing Info-Structure
- Initial Data Schemas allocated in a physical environment
- Initial Source systems identified for initial attributes
- Business Rules for all data cleansing identified
- Continuing Analysis Tasks identified
- Initial Warehouse operational for testing and validation

**Six Months – 2**
- Completed Analysis on the availability of sources for cost information (e.g., atomic data and Cross-Over Tables)
- Completed Analysis for Customer and Product Profitability Analysis
- Completed Analysis on all Cross Sectional generating events
- Completed ‘Whole of Customer’ matching strategy across Households and Products
- Production use of the initial data warehouse implementation
- Full Scale Sourcing for multiple retail products
- Initial Sourcing for customers and products
- Second phase of Household matching and first phase of product matching
- MetaData repository available in production environment
- An ongoing leader of enterprise information established
- Second enterprise wide workshop on data warehousing is held
- First EIS dashboard based upon the Enterprise Data Warehouse deployed
- The second release of the decision support models for DSS

**Six Months – 3**
- Source Implementations of (e.g., atomic data and Cross-Over Tables) for cost information
- Initial implementations for Customer and Product Profitability Analysis
- Metadata management applications extended to a limited user ‘self service’ environment
- Messaging and Real-Time Info-Structure implemented for initial round of ODS, Warehouse and Mart access
- Customer and Product ODS implementation
- AR closed loop to the warehouse designed
- Finance and Service information designed for incorporation in the EDW
- Proprietary environment used as a Data Mart
- Ongoing Data Quality Monitoring in place
- EDW development and management organization established
- EDW contains base information for accounts, customers and products
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 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, XXXX and XXXX and XXXXX 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.
Better Business Intelligence
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
- Always define the tactical within the strategic and plan for re-factoring and continuous improvement in the overall programme plan
- Focus on improving key data elements – don't do everything at once

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

- Communicate continuously on the planned approach defined in the strategy – the overall Blueprint is the communications document for the life of the programme
- Always focus on the business case – even for initial infrastructure initiatives or replacement activities