Performance Management Requirements Gathering:

*Defining What the Business Really Needs to Achieve Better Performance.*

Mike Lampa – Managing Partner
Analytics Modernization
- Advanced Analytics
- Business Intelligence
- Data Democratization
- Data Integration Strategies
- Data Management
- Data Monetization

Applied Solutions
- Prebuilt Applications
- Supporting Business Outcomes
- On-Premise or Cloud
- Subscription Based Solutions

Resource Services
- Team Based
- Staff Augmentation
- Contract-to-Hire
- Permanent Placement
- On-Demand
Topics of Discussion:

> The Requirements Gathering Challenge
> What is Facili-Modeling?
> What is Business Discovery?
> How Can I get started?
Performance Management: Set the Stage

- Corporate Performance Management (CPM)
  - Strategy & Objectives
  - Predictive Insights
  - BI Embedded in Operations

- Business Processing
  - OLTP
  - ERP
  - CRM
  - SVC
  - CARE

- Information Lifecycle Management
  - Unstructured
    - Integration: Metadata Mgmt, Master Data Mgmt, Collaboration
  - Structured
    - Quality Tools
    - Archiving Tools
    - Integration Tools

- Business Intelligence
  - Data Warehousing/Data Mgmt
  - Information Delivery
  - Analytics
    - OLAP
    - Predictive
    - Data mining
**Business Process Optimization through Analytics**

**Objective:**
- Business Function/Process Centric
- Closed-Loop, Corrective Action Analytics

**Components:**
- Lean Process Engineering defines **Requirements**
- Statistical Analytics produces **Insights**
- Data Warehousing/Business Intelligence enables **Consumption**
- Collaboration enables **Action**
What’s the Problem?

The Knowledge Exchange Challenge

- THE INFORMATION GAP
  - Those that need to know (Business) vs Those that can get the data (IT)

- THE COMMUNICATION POWER STRUGGLE
  - Language differences; different approaches; past-experience of unrealized expectations
Early Attempts to Correct the Problem

Several methodologies were developed in the late 1970’s and early 1980’s to address the problem.

- Structured Analysis - aided the analysis and design process
- Information Engineering-Data Modeling - aided the process from a data perspective
- Case Tools - automated the analysis and design process

The methodologies did not address the information gathering problem!
Getting to the Root Cause

Interactive Design Techniques

- The solution to the communication and power struggle problem is the use of interactive design techniques. Several techniques have emerged since the late 1970’s.

  - JAD™, WISDM™, THE METHOD™, FAST

- The technique of using a structured approach to present neutral questions to elicits answer from subject matter experts.

- Compressed time frames

- Liberal use of visual aides
Integrated Architecture Framework

- **Business Architecture** (What)
  - Policy & Procedure Implications
  - Business Practices
  - Business Models
  - Business Needs Revisions

- **Application Architecture** (How)
  - Enabled Processes
  - Application Tools
  - Tool Needs

- **Technology Architecture** (When)
  - Facility & Environment Needs
  - Facility & Environment Specifications

- **Facilities Architecture** (Where)
  - Workspace Needs
  - Workspace

**Focus for PM Rqmts**

**People Architecture** (Who)

**Practice Architecture** (Why)

Available Technology

Available People Skills

Business Needs

Business Practices
Facili-Modeling Performance Management Requirements

Capture Tool
- Project Charter Document

Gathering Technique

Business Context Diagram
- Business Process Model

Business Information Model
- KPI's & Measures
  - Process Measures
  - PM Requirements

Design Element
- Project Scope
- Project Purpose
- Bus Purpose
- Functional Scope
- Bus Performance
- Quality Gov.
- Systems Scope

Element Gathering Technique
- EDW Data Model
- Data Integration
- S/T Mapping
Key Elements for Interactive Design

- Visual Aids
- Assigned Roles
- Executive Sponsorship
- Flexible Structure
Facilitated Workshop: Assigned Roles

Session Facilitator

- Technical Design Team
- Business Design Team
- Project Sponsors
- Project Managers
- Session Observers
- Methodologists
- Documenters
The Facilitator’s Mission

As a session leader the Facilitator’s mission is to enable effective communication, guiding the group to consensus therefore making it easier for the group to successfully achieve its objective.

- ensure meaningful participant involvement
- establish an atmosphere of freedom and trust
- ensure a structured process is followed
- drive the group to consensus and to achieving their goal
- ensure a synergistic environment
Fundamental Facilitator Skills

Process/Framework (Agenda, Roles, Ground Rules)

Presentation Skills

Active Listening
- Summarizing
- Brainstorming
- Group Empowerment
- Thinking Styles
- Crisis Intervention
- Confronting
- Creativity Tools
- Team Building
- Problem Solving

Observation & Neutrality

Session Goals
## Enabling Group Think

### The Effective Facilitator

Is able to integrate the two modes of thinking, two modes of being:

<table>
<thead>
<tr>
<th>Hanging on</th>
<th>AND</th>
<th>Hanging Loose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having Control</td>
<td>AND</td>
<td>Going with the Flow</td>
</tr>
<tr>
<td>Being Active</td>
<td>AND</td>
<td>Being Passive</td>
</tr>
<tr>
<td>Being Certain</td>
<td>AND</td>
<td>Allowing Confusion</td>
</tr>
<tr>
<td>Being Serious</td>
<td>AND</td>
<td>Being Humorous</td>
</tr>
<tr>
<td>Textually Defining</td>
<td>AND</td>
<td>Drawing/Doodling</td>
</tr>
<tr>
<td>Being an Intellect</td>
<td>AND</td>
<td>Being Intuitive</td>
</tr>
</tbody>
</table>
Understanding Group Think

The Way People Think

**Vertical Thinker**
- Finds Differences
- Processes words, distinct meanings
- Thinks Sequentially
- Looks at Challenges
- Seeks methodical, logical
- Fits structured environments
- Develop outlines
- Explains the “plot” when describing a book or movie

**Horizontal Thinker**
- Finds Similarities
- Processes Visually, sees patterns
- Thinks Non-sequentially
- Looks at Benefits
- Seems intuitive, illogical
- Fits unstructured environments
- Develop mind-maps
- Explains the “message” when describing a book or movie
Group Think Evolution

Group Life Cycle

Stage 1: FORMING
- Confusion
- Performance Excels
- Problem People Emerge

Stage 2: STORMING
- Problem People Subside

Stage 3: NORMING
- Performance Excels

Stage 4: PERFORMING
- Problem People Subside
Group Think Evolution

Group Life Cycle & Readiness

Stage 1: FORMING
- Task = Low
- Relationship = Unknown
- Confusion

Stage 2: STORMING
- Task = Medium
- Relationship = Low
- Problem People Emerge

Stage 3: NORMING
- Task = High
- Relationship = Medium
- Problem People Subside

Stage 4: PERFORMING
- Task = High
- Relationship = High
- Performance Excels

Task = High Relationship = Medium

Task = Medium Relationship = Low

Task = Low Relationship = Unknown
Facili-Modeling vs SDLC

- Regardless methodology, every phase has tasks with 2 Fundamental Processing Steps
  1. Gather Needed Information
  2. Produce Deliverable
- Group Facilitation is the **technique** for Information Gathering
- Methodologies are enabled through Practice Guides that drive the use of Tools & techniques to produce Deliverables
Facili-Modeling Outputs & SDLC Artifacts

- Workshop Structured Notes provide Content to Enable creation of Deliverables
- Review/Synchronize Workshop Outputs to Meet the SDLC Requirements
“Lay of the Land” Scoping the Business Intelligence Project

- Establishing the Initial Meeting
- Developing Lay of the Land Interview Questionnaires
- Conducting Lay-of-the-Land Interviews
Establishing the Initial Meeting

- What is the Business Opportunity you are trying to achieve?
- What is the Business Pain you are trying to eliminate?
- What Business Functional Areas are involved?
- Which Organizational Units are affected?
- What Applications are implicated?
Lay of the Land: Technique

- 1-on-1 Interviews with Key Business Sponsors
- 1-on-1 Interviews with KEY IT Sponsors
- Prepare a detailed Interview Script
- Take Copious Interview Notes
- Request review of Interview Notes for accuracy
- Compile Notes and form a Recommendation
Lay of the Land: Interview Questions

- What is the mission of your team/group/division/department?
- What is the most significant shift in the way you are doing business?
- What are your competitors doing that you don’t?
- How do you measure success in your department?
- How does your boss measure your success?
- What are your Functional Goals?
- How do your Functional Goals relate to the Corporate Goals?
- What MUST go right for you to be successful?
- How much of the Business Process Value Chain is your concern?
- What questions do you answer/need to answer?
- Who do you rely upon to get the right answers?
- From where does the information come?
- What are the critical “systems” used by your department?
Lay of the Land: Scope Recommendation

- DOCUMENT THE BUSINESS OPPORTUNITY/PROBLEM TO ADDRESS
  - Identify & Recommend scope based on Business Priority.
  - Define the Organizations that should sponsor the initial efforts
  - Define the functional scope of the initial efforts
  - Define the Operational Systems that will be involved
  - Name the key people from appropriate Business Units
  - Name the key people from the appropriate IT Units
Data Governance Pyramid

- Risks
- Goals
- Governance
- Measures
- Quality Monitor
- Performance Monitor
- Business Quality Process
- Business Transaction Process
- Business Transaction Data
- Stewardship Metadata
- Definition & Navigation Metadata

It’s about Process!
What is a Business Process Model?

- The Graphical Representation of the enterprise’s business execution life-cycle.
- Defines the key business functions, processes and activities performed
- Describes process interaction via information created, shared, updated…
- Describes the process enabling mechanisms (applications & organizations)
- Represents “What” the Business Does, NOT “how” it does it
- Is Absent of Organizational Structures
- Is Absent the constraints imposed by capabilities of Automation Systems
Business Process Modeling Notations

• Integrated Definition for Functional Modeling (IDEF0)
  • A method designed to model the decisions, actions, and activities of an organization or system and to promote good communication between the analyst and the customer.
  • Useful in establishing the scope of an analysis, especially for a functional analysis, thus are often created as one of the first tasks of a system development effort.
  • Derived from the Structured Analysis and Design Technique (SADT) and commissioned by the United States Air Force.
  • In December 1993, the Computer Systems Laboratory of the National Institute of Standards and Technology (NIST) released IDEF0 as a standard for Function Modeling in FIPS Publication 183.

• Business Process Modeling Notation (BPMN)
  • A method designed to provide a notation that standardizes communications understandable by business users, business analysts and technical developers.
  • Useful means to provide a common notation to visualize XML languages designed for the execution of business processes, such as BPEL4WS (Business Process Execution Language for Web Services).
  • In June 2005, the Business Process Management Initiative (BPMI.org) and the Object Management Group™ (OMG™) announced the merger of their Business Process Management (BPM) activities to form the Business Modeling & Integration (BMI) Domain Task Force (DTF).
Conducting Facili-Modeling Workshops
Example IDEF0 Context Model

Identifies the high-level information inputs & outputs.
Example IDEF0 – Functional Process Flow Diagram

- **Sales Activity Management** (A1)
  - Credit Request
  - Requested Credit Amount
  - Guarantor Info Request

- **Loan Underwriting** (A2)
  - Credit Request
  - Approved Credit Detail

- **Loan Servicing** (A3)
  - Loan Payment
  - Transaction Journal

- **Financial Management** (A4)
  - Interest Paid

**Title:** LoansRUS Enterprise Process Model

**Node:**
- **TITLE:** LoansRUS Enterprise Process Model
- **NUMBER:**

**Flow:**
- **WORKING**
  - LoansRUS
- **Flow Elements:**
  - Foreclosure Workout rules
  - Executed Agreement
  - LPS
  - CAW 2000

**Processes:**
- **Sales Activity Management**
- **Loan Underwriting**
- **Loan Servicing**
- **Financial Management**

**Notes:**
- Provides view of information acting as controls & flowing between processes
- Associates Business Processes to Application Systems

**Proprietary and Confidential**
Functional Decomposition: Process Activity Level

NODE:  TITLE:  NUMBER:

A2  Loan Underwriting  

Requested Credit Amount

Inquire on Obligor Credit A1

Determine Credit Worthiness A2

Credit Analyst M1

Credit Approval Rules

Guarantor Info Request O3

Credit Decision

Credit Limit Amount O1

Approved Credit Detail O2

Credit Decision

Establish Credit Limit A4

CAW_2000 M2
## Business Process Model: Facili-Modeling Agenda

### The PROCESS FLOW DIAGRAM Agenda

- **INTRODUCTION**
- **REVIEW/REFINE BUSINESS FUNCTION**
- **DEFINE PROCESS ACTIVITIES**
- **ORDER PROCESS ACTIVITIES**
- **IDENTIFY INPUTS, OUTPUTS, CONTROLS, MECHANISMS**
- **WRAP-UP**
  - ASSIGN OPEN ITEMS
  - ASSIGN HOMEWORK
  - REVIEW/FEEDBACK
What is an Enterprise Data Model?

An Enterprise Data Model…

A logical data model that incorporates all the important components of an enterprise data architecture. Components include entities, attributes, relationships, rules and definitions stated in business terms. A schematic defining the data and their relationships that is applied to the whole organization. Diagram of a single non-redundant view of business data, showing how data is used by the business activities of an organization.

Source: California State University compilation of Information Technology terms; http://it.csumb.edu/departments/data/glossary.html
An Enterprise Data Model is used to…

- Provide a conceptual information model that serves as an architectural framework or blueprint from which Enterprise Data Warehouse Models and Operational Support System data models can be derived.
- Provide a subject oriented view of enterprise-wide information requirements typically displayed in 3NF, focusing on the business entity and balanced against the Business Process Model.
- Work along with the Business Process Model, collectively referred to as the Enterprise Business Model.
- Reflect the evolution of Information Concepts as detailed Enterprise Data Warehouse models and Operational Support System Models are developed.
Example: **Information Subject ERD**
“Involved Party”
Example: Information Subject ERD “Product Catalog”
Example: **Functional Subject ERD**

“Credit Underwriting”
Business Information Model: Facili-Modeling Agenda

The ENTITY-RELATIONSHIP DIAGRAM Agenda

- INTRODUCTION
- REVIEW/REFINE BUSINESS FUNCTION
- DEFINE CANDIDATE BUSINESS INFORMATION ENTITIES
- DESCRIBE ENTITIES
- DEFINE RELATIONSHIPS & RULES BETWEEN ENTITIES
- WRAP-UP
  - ASSIGN OPEN ITEMS
  - ASSIGN HOMEWORK
  - REVIEW/FEEDBACK
A Business Information Need...

A set of requirements that define the information that is necessary for the business community to get answers to questions deemed critical to assess level of achievement towards Functional Goals and Objectives in order to determine where to focus performance improvement activities across the enterprise’s functional areas.

- Comprised of statements of Information Needs usually around specific business functions
- Each information need is supported by one of more business questions that will be asked to get the answer to the need.
- The information needs and business questions are decomposed and mapped to the measures, dimensions and periodicity details captured during Functional Goal & Objective Analysis
## Business Information Need/KPI Matrix

<table>
<thead>
<tr>
<th>Business Info Need</th>
<th>Business Question</th>
<th>KPI</th>
<th>Analysis Period</th>
<th>Refresh Frequency</th>
<th>Analysis Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost of Inventory</strong></td>
<td>How long does product sit in the warehouse locations?</td>
<td>Inventory Days</td>
<td>Month</td>
<td>daily</td>
<td>Location, Product Cat</td>
</tr>
<tr>
<td></td>
<td>Which Products have low demand?</td>
<td>Inventory turn</td>
<td>?</td>
<td>?</td>
<td>Product</td>
</tr>
<tr>
<td><strong>Owner Satisfaction</strong></td>
<td>Owner complaints due to billing errors</td>
<td>Cust Sat Index</td>
<td>?</td>
<td>?</td>
<td>Owner</td>
</tr>
</tbody>
</table>
Business Information Needs: Map Process & Data

- **Business Process Model**
  - Business Function
  - Business Activities
  - Lag→Lead Time Hierarchy

- **Performance Objective Definitions**
  - Functional Objective
  - Performance Measure
    - Key Performance Indicator
      - KPI Data Map
      - KPI Bus Rule (Calculation)
    - Analysis Dimension
      - Dimension Data Map
      - Dim Bus Rule (Hierarchy)
    - Performance Expectation
      - KPI Data Map
      - Perf Bus Rule (Threshold)
      - Alert Activity Map

- **Enterprise Data Model**
  - Bus Txn Rcd
  - Customer
  - Product

Arrows indicate the flow of information and hierarchy between the different components.
Business Information Needs: Facili-Modeling Agenda

The BUSINESS INFORMATION NEEDS Agenda

- **INTRODUCTION**
- **FOR EACH BUSINESS FUNCTION**
  - DEFINE FUNCTIONAL OBJECTIVES
  - DEFINE FUNCTIONAL PERFORMANCE MEASURES
  - DEFINE FUNCTIONAL PERFORMANCE QUESTIONS
- **WRAP-UP**
  - ASSIGN OPEN ITEMS
  - ASSIGN HOMEWORK
  - REVIEW/FEEDBACK
Performance Management Requirements: Facili-Modeling Recap

• Requirements gathering is a communications process uses structured techniques to overcome the “information gap”
• Performance Management is about PROCESS. Process modeling techniques provide a business “domain” framework for defining performance management requirements
• Data Modeling is critical component and is mapped to the process model
• Business Information Needs drive out Performance Management requirements for the business functional areas (domains); define the decisioning information needed to enable performance optimization.
Beyond Facili-Modeling
Diverging Forces of Analytics...

IT Infrastructure
- Scalability / Reliability
- Architecture / Standards
- Security / Authentication

Business Delivery
- Business Value
- Urgency
- Flexibility
- Accessibility / Autonomy

Enterprise BI
Self-Service BI
“Shadow IT” comes out...

- Business People:
  - Have low tolerance for enterprise solutions
  - Want autonomy; have Buy Power
  - Have increased savvy, demand, complexity, access to tools
  - Are coming out of the shadow to stake a claim

- As a result:
  - IT is marginalized or bypassed altogether
  - Vendors are selling directly to the business buying power

“Are they Gone?!?”
### Traditional Vs Discovery BI

#### “Traditional BI” Thinker
- Architecture is Paramount
- Control ALL Information Access
- Scope Control thru Phase Gates
- Iteration = Rework!
- Business Rules must be defined before integration work beings
- Prototyping & Development must be done against test data.
- User-Acceptance must be done against a select-set of production data

#### “Discovery BI” Thinker
- Architecture slows me down
- It’s my data! I know how to handle it.
- I’ll know it when I see it.
- Finding “it” will take several tries.
- Need to see the data to define the business rules
- The real issues are in the production data.
- Need to investigate production data to define the rules for a meaningful select-set of data.
According to Gartner

• If there were a **single market theme in 2012**, it would be that (business) data discovery became a mainstream **architecture**.

• This **emphasis on** (business) data discovery…accelerates…**user empowerment** of BI and analytics and **greatly enables**…ability to perform **diagnostic analytics**

• As **organizations** mature…they **become adept** at understanding the root causes…exploring **variables** that **predict** what…will be in a **future** period.
"Analytics" – Let’s be clear!

<table>
<thead>
<tr>
<th>Method</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimization</td>
<td>&quot;What’s the best action?&quot;</td>
</tr>
<tr>
<td>Random Testing</td>
<td>&quot;What if we try this?&quot;</td>
</tr>
<tr>
<td>Predictive Modeling</td>
<td>&quot;What will happen next?&quot;</td>
</tr>
<tr>
<td>Statistical Modeling</td>
<td>&quot;What is the pattern?&quot;</td>
</tr>
<tr>
<td>Discovery/Alerts</td>
<td>&quot;Where should we look?&quot;</td>
</tr>
<tr>
<td>Query/Drill Down</td>
<td>&quot;Why did it happen?&quot;</td>
</tr>
<tr>
<td>Ad Hoc Rpt/Scorecards</td>
<td>&quot;How many, when, where?&quot;</td>
</tr>
<tr>
<td>Standard Reports</td>
<td>&quot;What happened?&quot;</td>
</tr>
</tbody>
</table>

Business Discovery Bridges Descriptive → Predictive
The Business Adopts Discovery

According to IDC Customer Satisfaction Survey

Percentage of Respondents

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>Business Discovery</th>
<th>All other BI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (not at all satisfied)</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>2</td>
<td>3%</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>18%</td>
<td>33%</td>
</tr>
<tr>
<td>4</td>
<td>49%</td>
<td>23%</td>
</tr>
<tr>
<td>5 (very satisfied)</td>
<td>29%</td>
<td>14%</td>
</tr>
</tbody>
</table>
Converging Forces of Analytics

- Culture Shift
- Deliver the right data @ “Right” Time
- Collaborate
- Access the right data @ “Business” time

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Business Discovery Key Elements

- Interactive Visualization
- Dedicated Discovery Environments
- Executive Sponsorship
- Discovery Governance Framework
Business Discovery Use Cases

Performance Management Dashboards
Opportunity Anomaly Detection
Process Optimization
Complex Specification

Business Process Discovery
Business Analytics Eco-System

Business Discovery

- Enterprise DW environment
- Analytic marts
- Data Warehouse
  - "Profile" datasets & events
  - Data staging area
  - Business rules: Quality, integration, aggregation, policies
  - Data acquisition: Change data capture
  - Conformity rules
  - Source details
- Kpis, metrics, associative and drill down

- Collaboration platform
  - Cause & effect
  - Process updates

- Mining and analytics platform
  - Predictive and prescriptive
    - "Profile" datasets & events

- BI and reporting platform
  - Descriptive
  - Data quality updates
  - DQ findings
  - Data governance

- Data quality monitor

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Discovery Methods & SDLC Shift

Steady State (Production)
- Monitor
- Maintain
- Support

Expand (Development)
- Add Data
- Add Capability
- Extend Base

Discover
- Experiment / Refine
- Support
- Decide

Operational readiness

Agile

Architectural & data governance; prioritization; SLA definition
Business Discovery Recap

• BI Requirements are easier to **acknowledge** than define!
• Self-Service BI Tools can significantly **reduce requirements/envisioning phases** of projects
• Business Discovery/Self-Service BI Tool use cases include:
  • Traditional Performance Management Dashboards
  • Opportunity/Anomaly Detection
  • Process Engineering Initiatives
  • Complex Specification Simulations
• Successful Business Discovery Adoption requires Business & IT **collaboration** & “self-service” **culture shift**.
Question & Answer

• Where does your enterprise sit on the Business Performance Management Maturity Curve?
• Where does your enterprise sit on the Business Discovery Maturity Curve?
• What has been the pinnacle point in proving the value of Business Discovery in your shop?
• Where are your barriers to entry?
  • Technology, Process, Talent, Culture?
Thank You!

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