

Key Lessons for Business Process Modeling

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About the Presenter



Joan Pournara

Joan has specialised in business analysis for more than 25 years and is currently involved in Enterprise Business Architecture.

She was the first South African to qualify as a CBAP® (Certified Business Analysis Professional) and has also trained in TOGAF and Zachman Frameworks.

Joan is the Director of Education on the Board of the IIBA®-SA Chapter that she co-founded.

Joan lectures in Business Analysis for ESI-International (an IIBA™ Endorsed Education Provider) and is an Executive Consultant in Business Architecture and Analysis, consulting to organisations at a strategic level and providing mentoring and coaching at a tactical level.

Joan is an accredited practitioner of the NBI Profile instruments which she uses when assessing business analysis skills and behaviours.



Bringing Pieces of the Organization Puzzle Together



Using Modelling techniques to improve communication and understanding of an organisation in a structured way

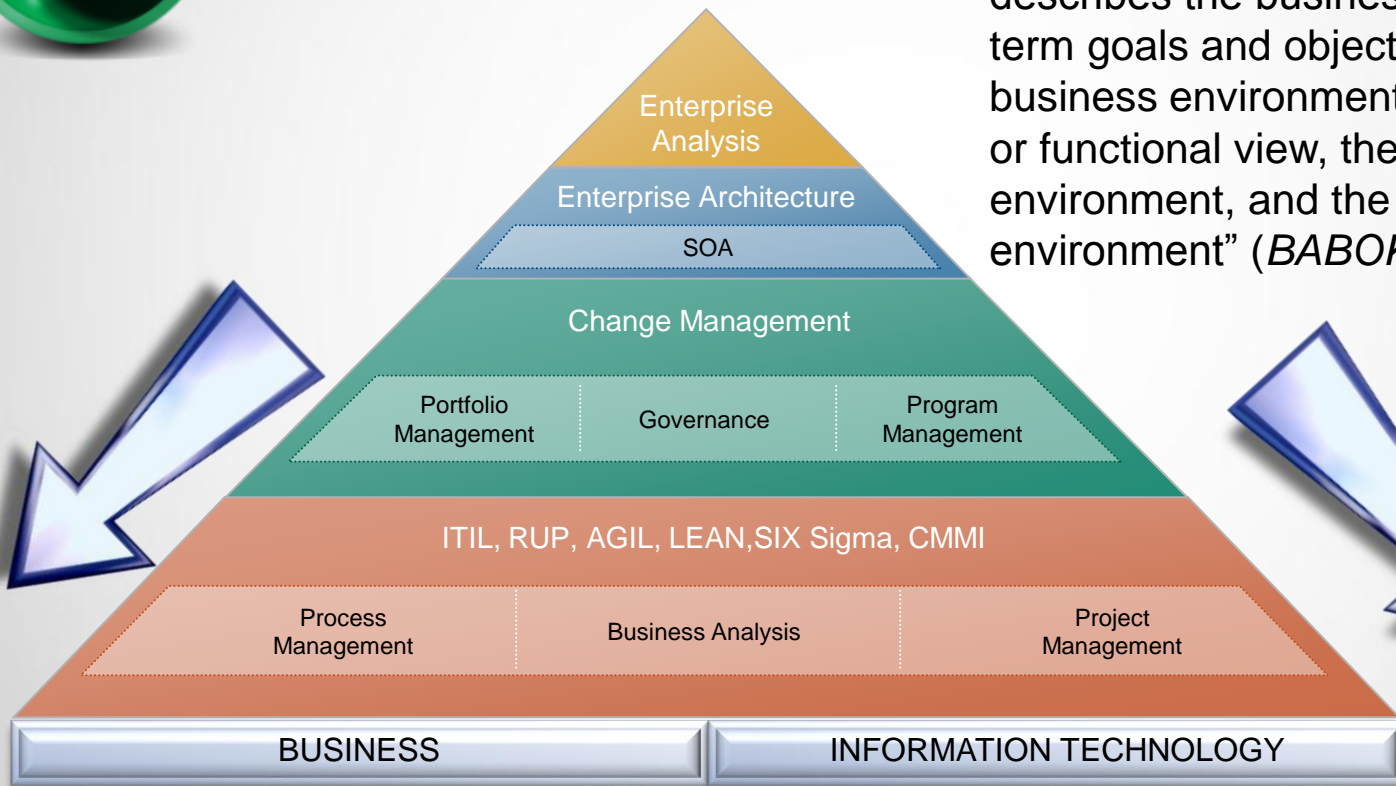


Use Best Practices to Scrutinize the Organization...



Business Goals
& Objectives

The business architecture is “a set of documentation that defines the organization’s current and future capabilities. The business architecture describes the business’ strategy, its long term goals and objectives, the high level business environment through a process or functional view, the technological environment, and the external environment” (*BABOK®*).



Enterprise Analysis helps the organization to

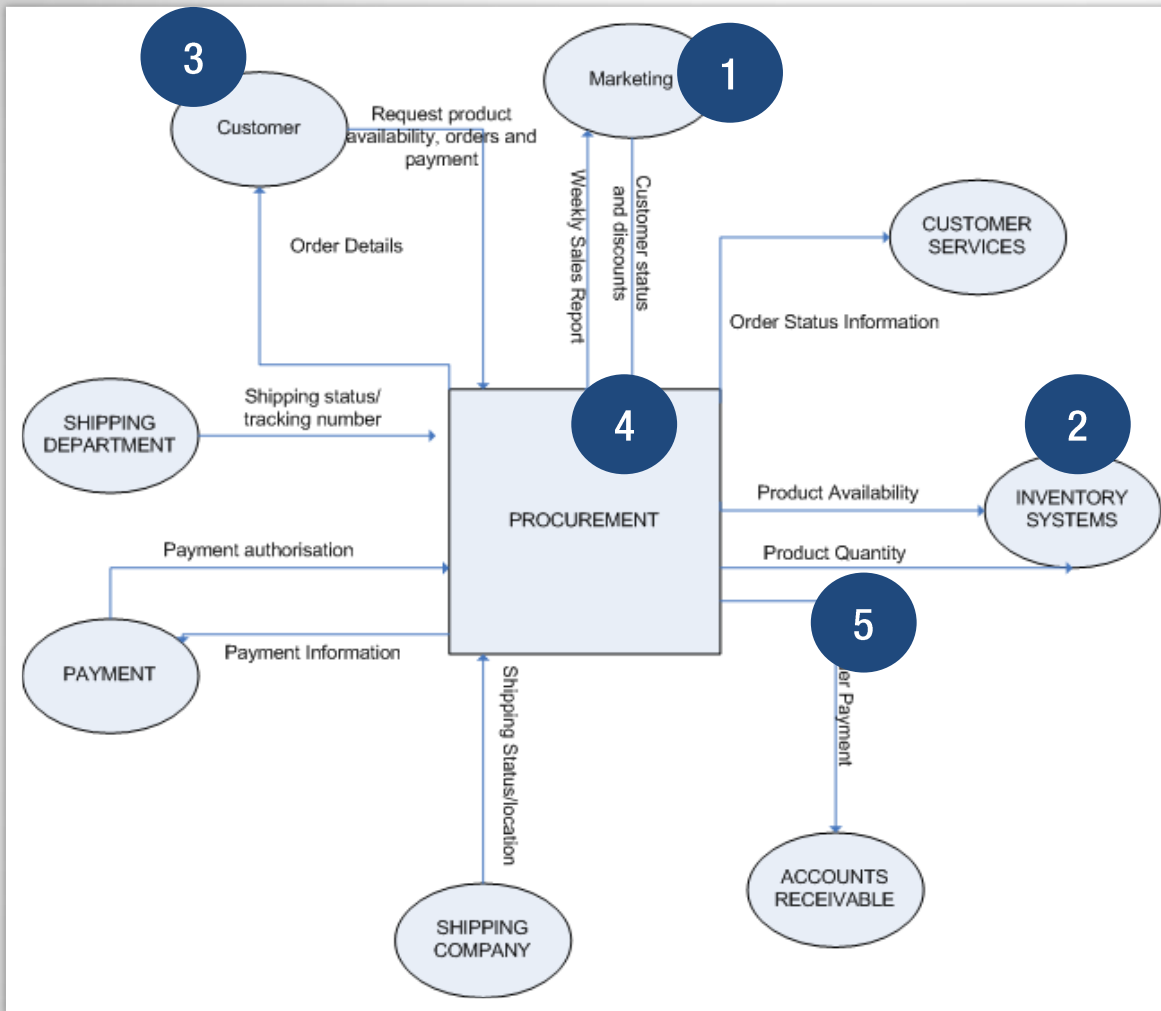
- Develop an overarching blueprint for the organization's future operations (vision)
- Determine how to meet the business strategy by prioritizing projects
- Ensure that operations align with the strategic direction of the organization
- Gain insight into duplication of effort and redundant projects
- Effectively manage the project portfolio and initiate portfolio management reviews
- Identify and prioritize potential services provided to the organization's stakeholders
- Develop ways to make the organization easier to do business with
- Determine whether the benefits from any individual project has a broader benefit to the organization

Use the right Framework (TOGAF; Zachman; FEAF; eTom) that suits your organisation and the right tool to build the **enterprise** architecture (not only the IT architecture). Use a tool that provides a central repository and supports integration and reuse of architecture and project deliverables.

Build AS-IS taxonomy using the following:

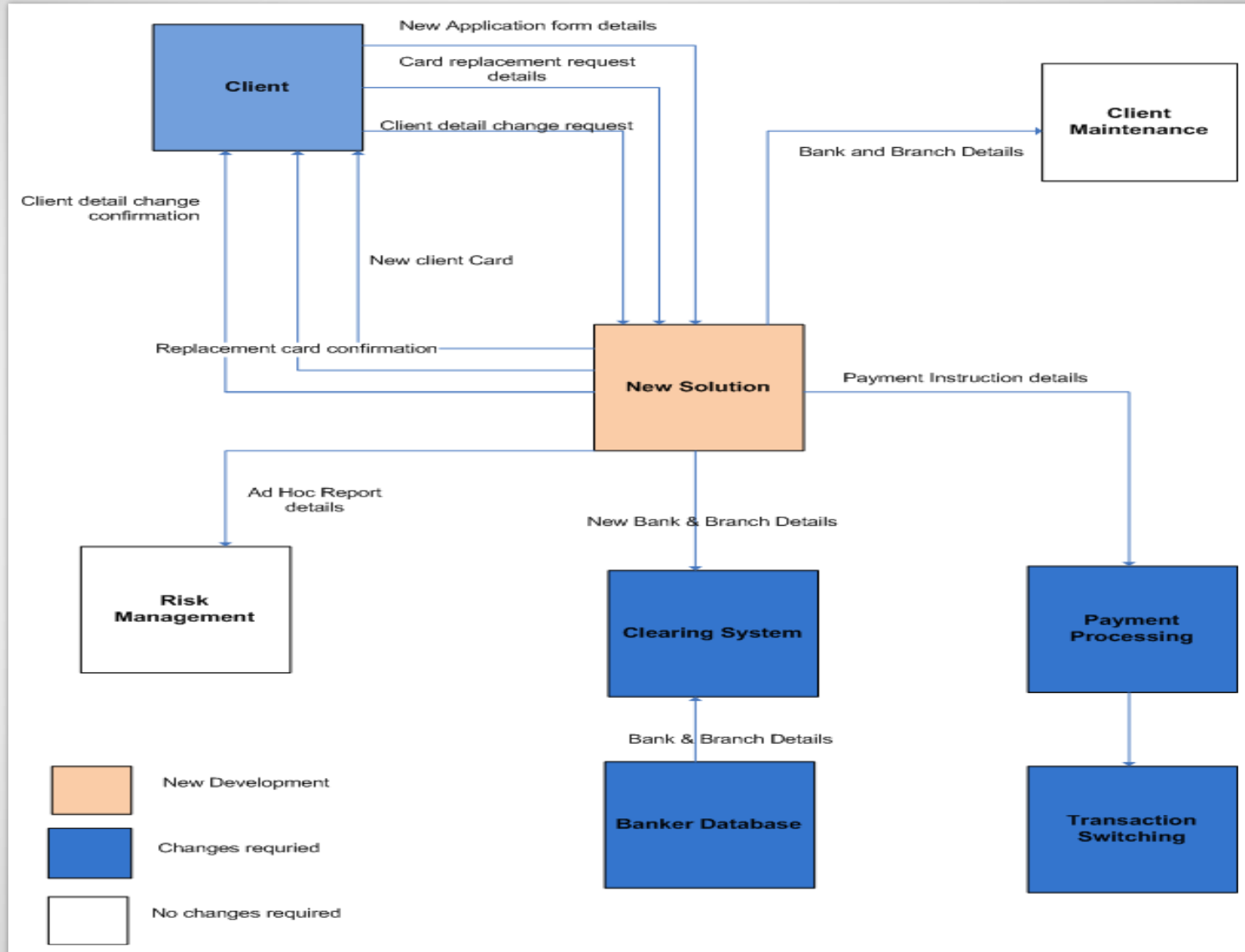
- Organizational models
- Goal models
- Impact models
- Event models
- Location models
- Workflow models, Activity diagrams and other process models
- Use case models
- Data flow diagrams
- Conceptual and Logical data models
- Functional decomposition diagrams
- State diagrams
- Object models

Technique #1 – The Context Diagram



- 1 External Agents that interface to the business area
- 2 System application that may require an interface to the business area
- 3 Org units, roles, vendors, customers that interface to the business area.
- 4 The name of the business area of study
- 5 Information that flows in and out.

Technique #1 – The Context Diagram



Technique #2 - Event Diagrams/Tables



There are 3 common events analysts look for and they are: external events (triggered by customers, suppliers, regulatory offices, etc.); temporal events (triggered by time) such as month-end reports, debit orders, etc.; and internal events (triggered by business rules, compliance, legal, etc.) such as when a customer defaults on a payment legal processes are triggered.

Id No.	Event	Trigger	Source	Activity/Process	Response/Output	Destination
E101	Request Product Availability	Product Query	Customer	Retrieve available product details	Customer Name; address; contact details; available product list	Customer

Simple principles to create Event diagrams are:

- Events are named with the external entity who initiates them for example, *Supplier* submits Invoice.
- Start nodes on workflow diagrams are named by the event.
- An Event table can be used as an alternative technique to identify business processes.

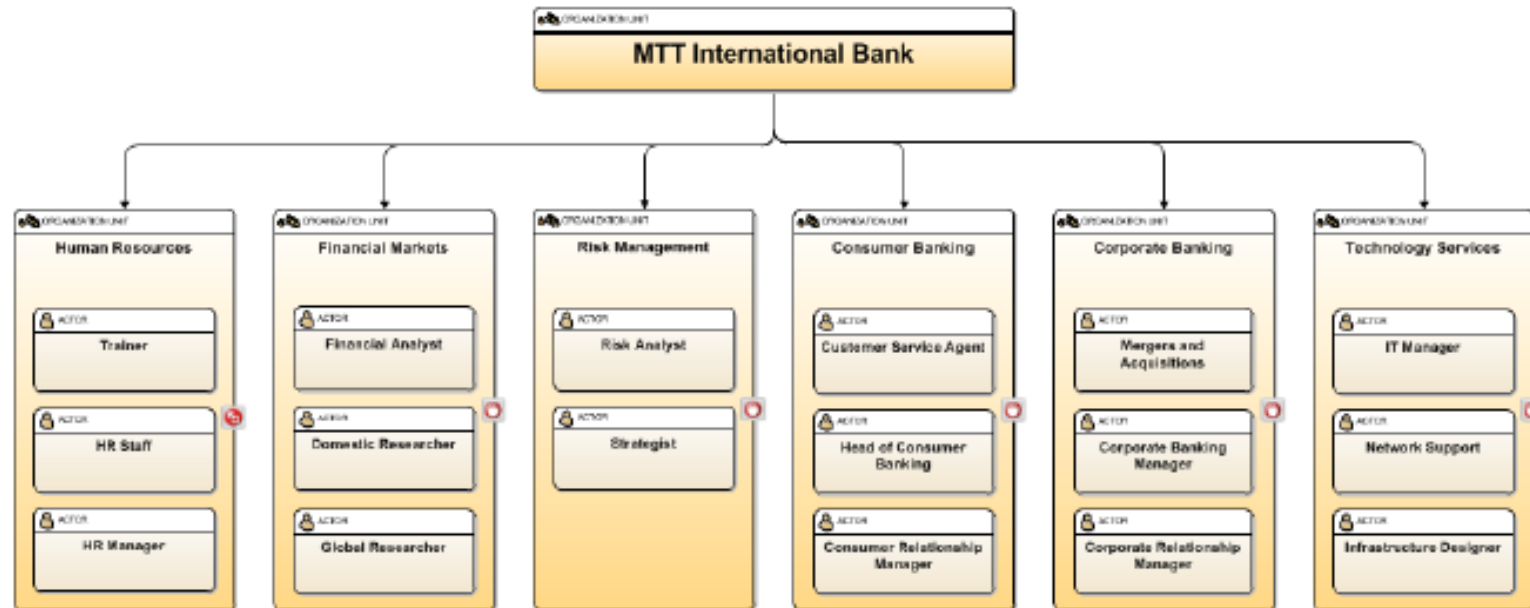
Technique # 3 Decomposition Diagrams

MTT Organization Decomposition Diagram

Type: T9 Organization Decomposition Diagram

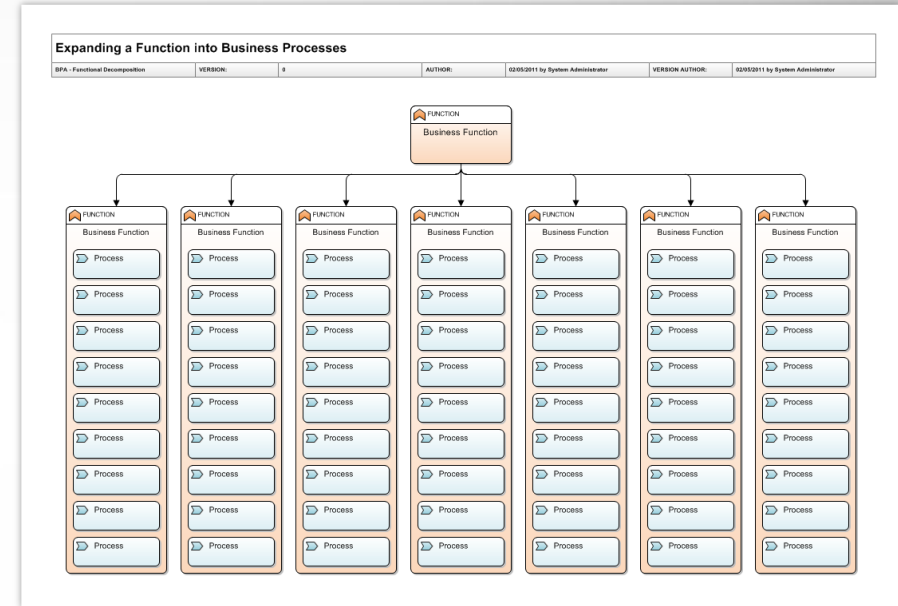
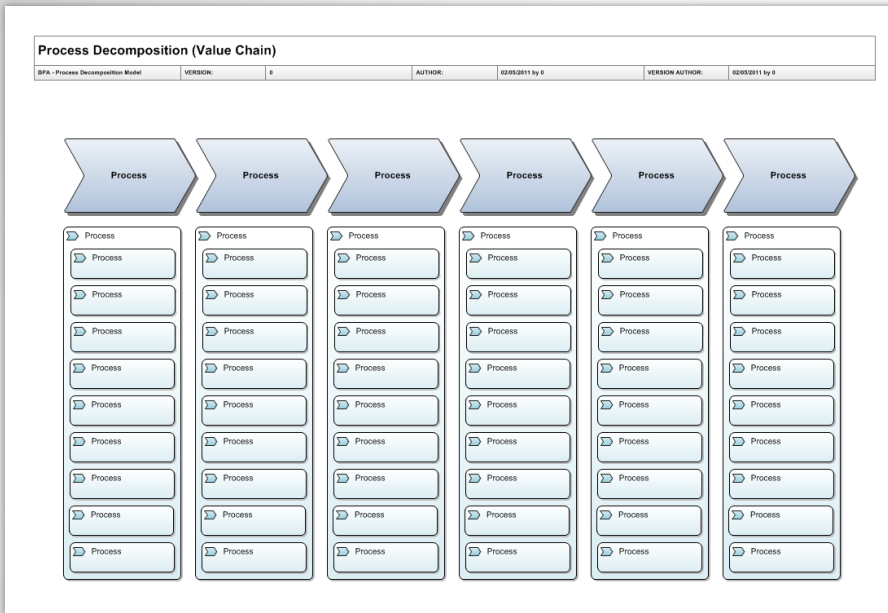
Description

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Decomposing Organisation structure to identify hierarchical layers and roles

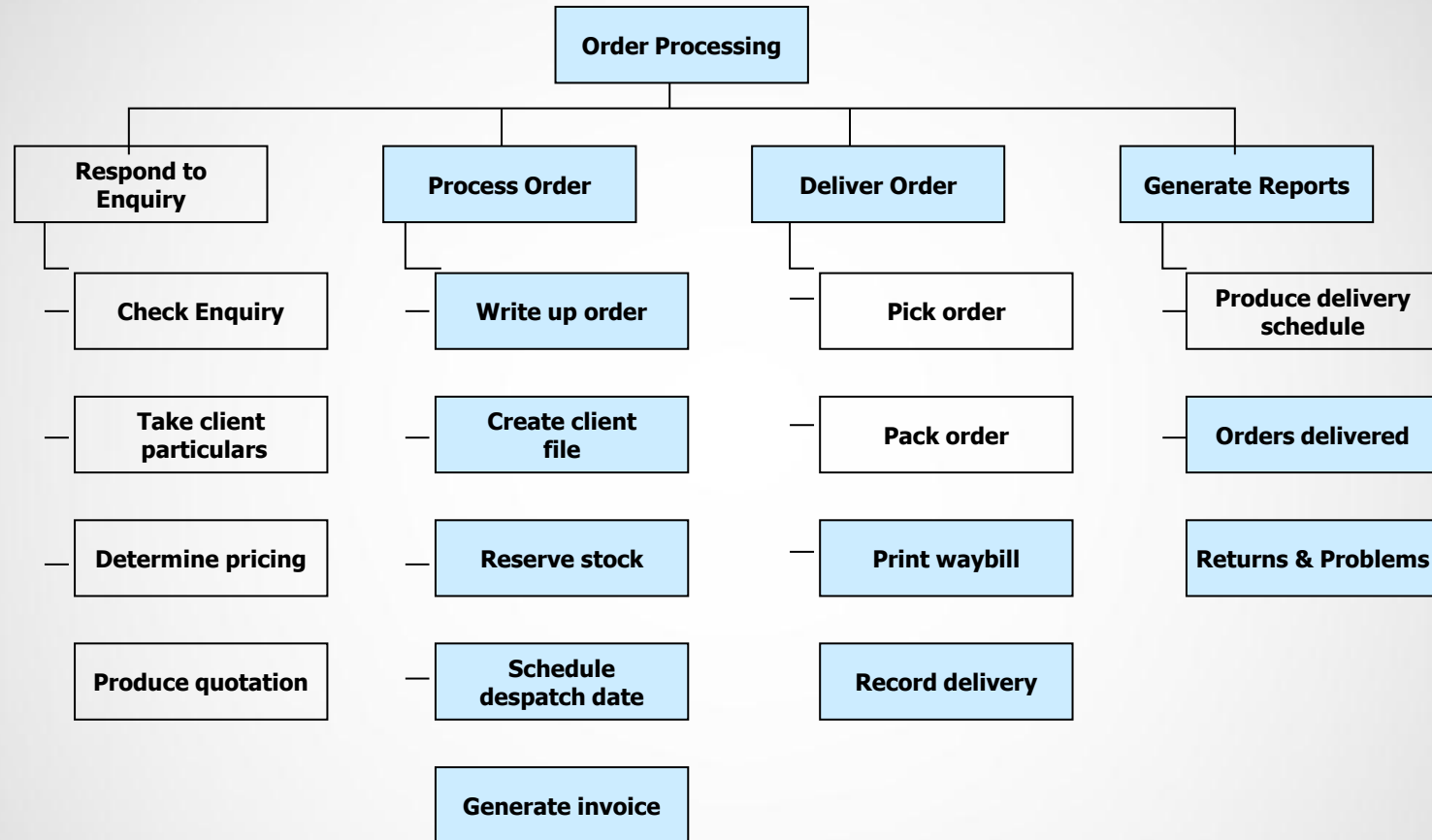
Technique # 3 Decomposition Diagrams



Decomposing Organisation Functions to identify processes that support the function,

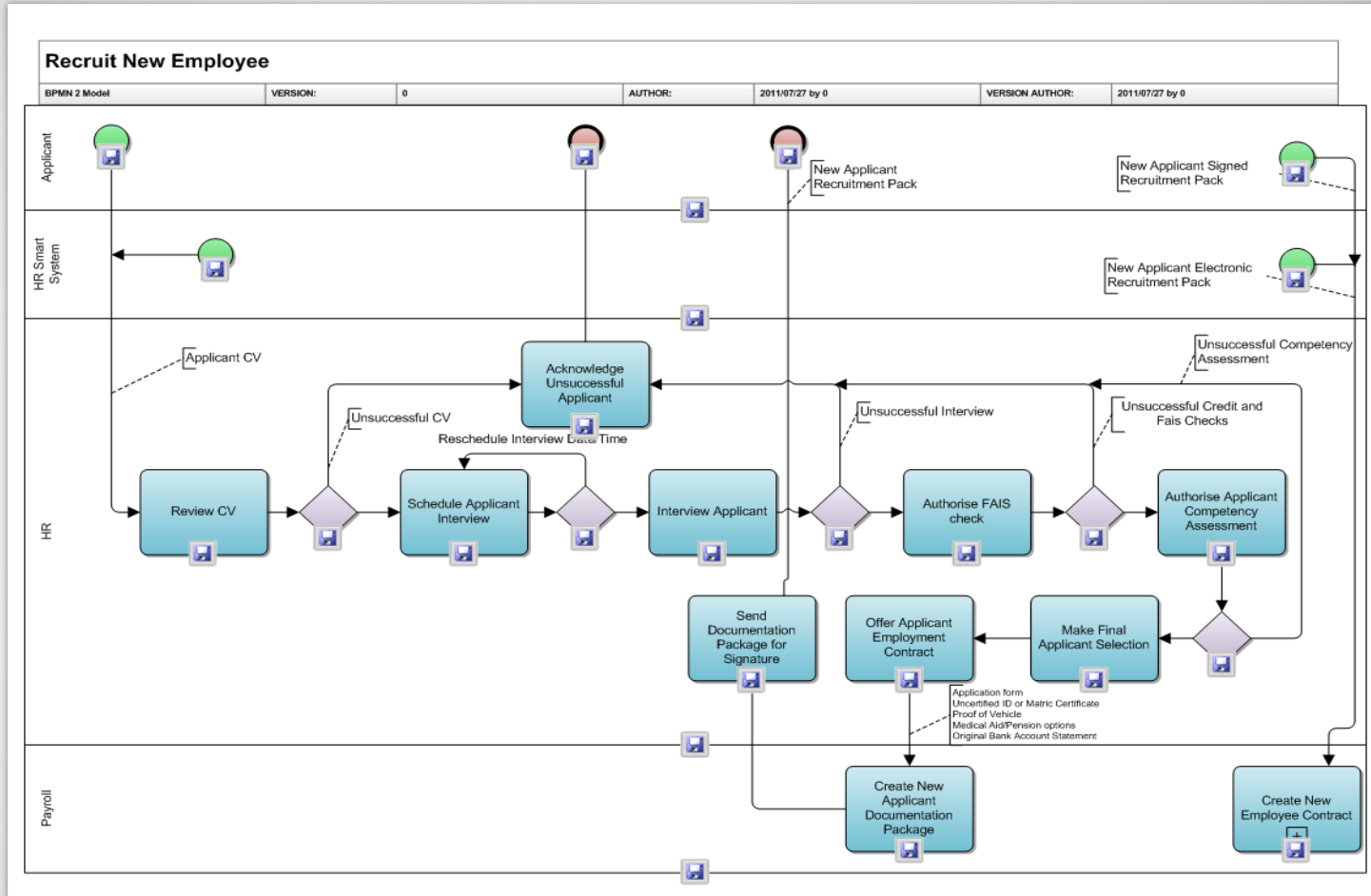
Decomposing Processes to atomic level processes

Technique # 3 Decomposition Diagrams



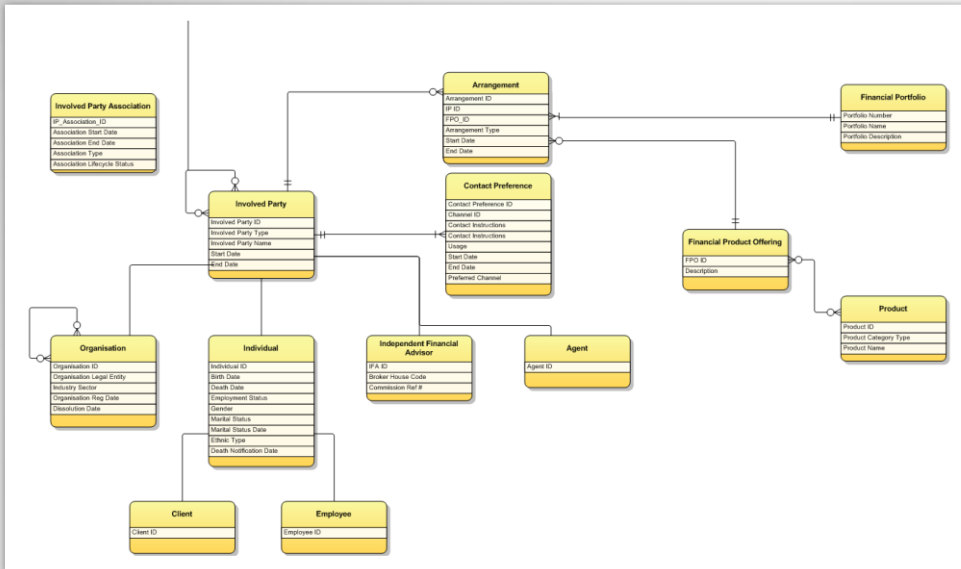
Using a decomposition diagram to identify new requirements for an automated Order Processing Solution.

Technique # 4 Workflow / Process Diagrams



Process Diagrams are used to understand the sequence of activities/tasks and measurements . The diagram is used to document As-Is and to identify where (gaps) change is required to be made to support the To-Be view.

Technique # 5 Entity Relationship Diagrams (ERD)

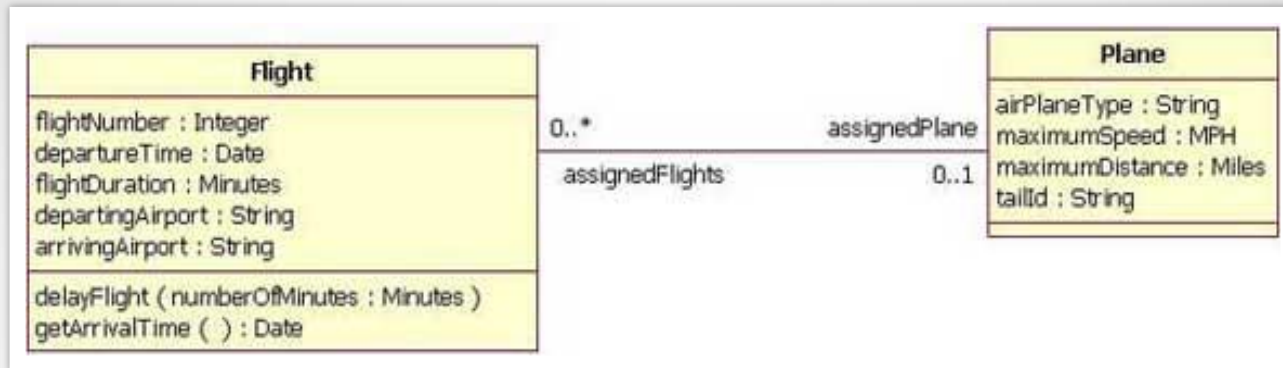


Strengths:

- Are used at a high level to develop a conceptual model of the business (often referred to as a Domain Model) with minimum detail or at a detailed level
- Is a useful and comprehensive deliverable to a database designer
- Rigor – they are based on mathematical concepts that provide stringent rules for correctness and completeness

Logical ERDs are used by Business Analysts to:

- Develop and document an understanding of entities of significance to a business area and the rules that govern the relationship between them.
- At a high level, they simplify and clarify complex issues and explain concepts
- At a detailed level, they document the data requirements of a business area
- An ERD is used to present a specification of data requirements to a database designer in a single comprehensive document.

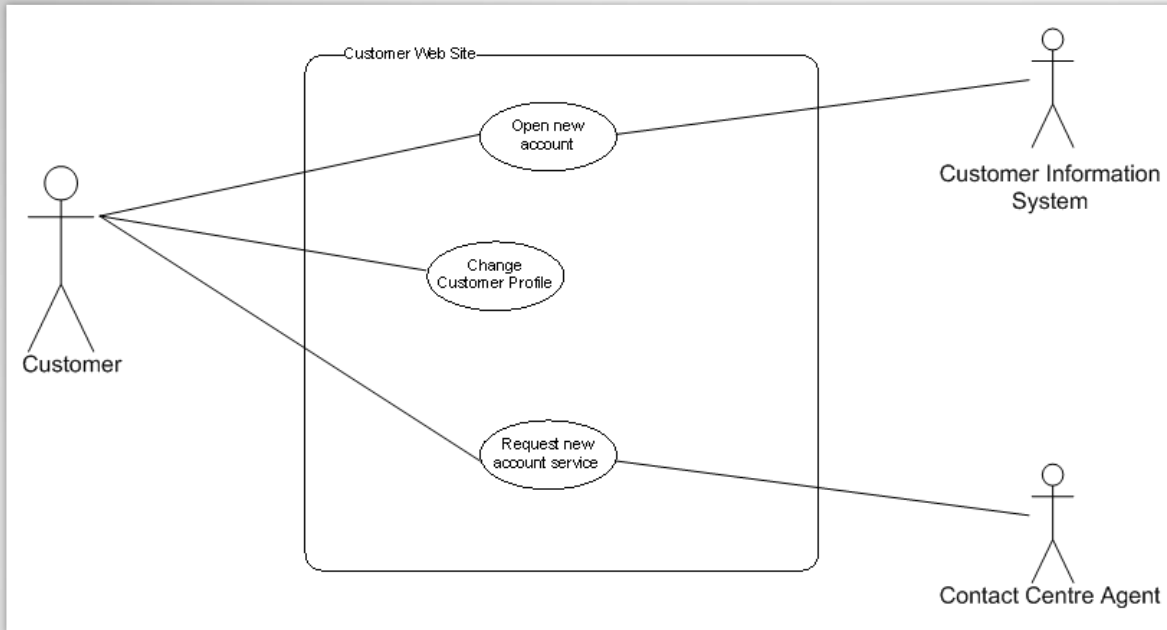


Class Models

show the entities relevant to the solution along with each entity's internal structure and its relation to other entities, that is, attributes and operations. Operations show what a class can do. They accept attributes, modify them and output a result. Classes affect one another by requesting an operation to be performed through a message and classes must be associated in order to send messages.

Class Models result from Object Oriented Analysis and design and may not be useful for non-OO solutions.

Technique # 6 Use Case Diagrams



System Use Case Diagram

graphically represents the boundary of the solution, shows how actors interact with the system use cases and displays relationships between use cases. Use Case Diagrams are supported by Use Case Descriptions/Narratives.

Instead of a single use case diagram packed with unreadable detail, break out multiple use case diagrams, each at a manageable level of detail. Each diagram is based either on the principal actor for a set of use cases or on a common category that a set of use cases fit into, such as *Account Management*.



Technique # 6 Use Case Narratives



Name Create New Lead

Unique Identifier

The identifier is often a number, and is essential for requirement traceability. It is used to cross reference requirements to design and test artefacts, and needed to verify delivery of the requirements. The identifier must be unique in both the scope of the project and the scope of the solution.

Actors *Identifies the primary and secondary actors (human and system) that will interact with the use case/s.*

Brief Description *The description provides an informal, natural language description of the use case and the goal that is being satisfied. Functionality may be implied in this section, but no designs or tests should trace to it. All functionality must be identified in the elements below.*

Preconditions *Preconditions describe what must be true for the use case to be triggered or started. They can relate to conditions either within the solution or outside of the solution under study. For example, when withdrawing money from an ATM at a specific bank, the customer must be an existing customer of that bank.*

Event/s *Identify the event/s that will trigger this use case, e.g. new customer application.*

Basic flow of events *The basic flow is the 'guts' of the use case and describes the sequence of user to solution interactions and related solution behaviour or rules. It is commonly referred to as the "primary scenario" or "happy path." It indicates what happens when there are no exceptions or complications.*

Alternative flows *These describe what happens when things don't follow the "happy path." Called a variation if the flow rejoins the happy path, and an exception where an error occurs, these prevent the actor from achieving their goal.*

Post-conditions *Post-conditions are things that are true at the conclusion of a use case. Traditionally, these things are always true, regardless of what path is taken through the use case. If the use case has many alternate flows, there may be several outcomes with different post-conditions. It is useful to identify post-conditions for the basic flow and each of the alternate flows.*

Outcome and Output *Identify the outcome for each path and the output. Outcome uses past participle as the naming convention i.e. statement printed. The output is a physical artefact that may be produced, e.g. printed statement, deposit receipt, management statistical report.*

Quality of Service / Measurements *Identify the measurements/volumes required to meet current and future business goals.*

Constraints: *A constraint is any factor that affects when or how an Actor interacts with the system. The Use Case must check for constraints.*

Transition Requirements: *Factors that must be temporarily undertaken in order to transition from the As-Is state to the new To-Be state.*

A Use Case Narrative is a textual component that supports a Use Case Diagram. It identifies the actors involved, the trigger event, pre and post conditions, a business scenario description and the activities to complete the use case including the alternative flows for variation and exception processing.

Each Use Case must be supported with an Activity Diagram, Data Model, screen prototypes and outputs that will be delivered by the process.

By keeping use cases simple and short will improve requirements management and project estimation. The whole team will be able to provide better estimates of the work effort needed to define the use case, develop solutions, and test them.

If you prioritize well, you will cover the most important goals and actors first, so change requests are less likely to have significant impact on the project. When changes do happen, you have well-contained use cases to modify.

Using these guidelines should mean you can create one complete use case — from elicitation to sign-off — in one or two days of working time.

Technique # 7 User Stories

A screenshot of a software application's 'Primary Details' form. The form is divided into several sections: 'Company' with radio buttons for 'Company', 'Trust', and 'Option 1', and input fields for 'Name' and 'Number'; 'Contact details' with input fields for 'Cell', 'Secondary tel', 'Primary tel', 'Fax', and 'Email Address', and a dropdown for 'Preferred contact Method'; and 'Address' with input fields for 'Physical' and 'Postal' addresses. A large, empty blue rectangular area is positioned to the right of the form. At the bottom, there are buttons for 'Add', 'Amend', '< Back', 'Next >', and 'Cancel'. The top of the form has a navigation bar with tabs for 'Shareholding/Family tree', 'Directors and Management', 'Call Report', 'Plant and Equipment', 'Debtors and Export', and 'Creditors and Import'. Below the navigation bar are more tabs: 'Primary details', 'Competition', 'Labour Force', 'Current Facilities', 'Current Bankers', 'Current Security', 'Requirements', 'Financials', and 'Pricing'.

User stories are brief descriptions of the functionality required of a new system. They are usually written by the Actors onto a card. It typically represents one scenario within a Use Case but by no means goes into exhaustive detail. User Stories are a great technique to use especially for Project teams using Agile methods however they can be used on any project type as a technique to obtain user buy-in.

Sometimes User Stories can be supported by screen Prototyping especially as a means to assist the User Group to articulate visually their expectations of the system.

Screen Prototype using Visio

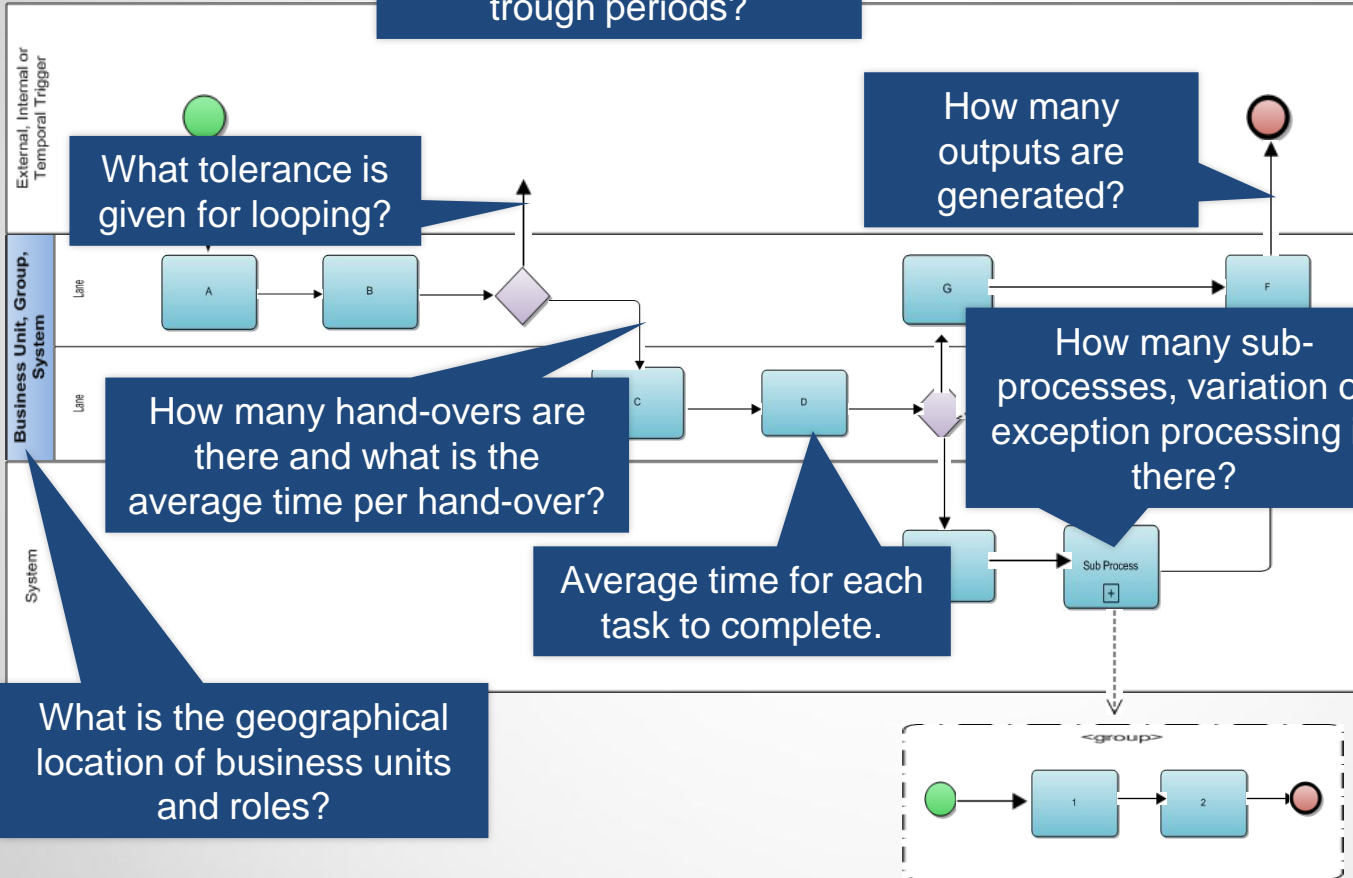
www.modernanalyst.com for more information on User Stories

Technique # 8 Measurements



Process Name

How many times does the process execute per day. When are the peak and trough periods?



Measurements are needed to understand the As-Is and to determine the To-Be (vision) and are critical to determine business process improvement.

They are also important from a technology perspective as they provide insight to scale a new system for future use.

They are important for testing.

Technique # 9 Working with Stakeholders



Modeling is a way to understand enormously complex environments and to make sense out of them.

Business Analysts must have 3 core skills:

- The ability to build relationships with stakeholders
- The ability to facilitate
- The ability to model

If you lack the ability to communicate, your other skills are liable to be meaningless, since business analysts must spend a large part of their time mediating among different people speaking different languages (e.g., to IT technical people and business people).

If you lack the ability to facilitate, you will miss some great opportunities of getting people to think creatively about their collective problems.

If you lack the ability to model, you will find it difficult to explain, with precision, the root cause of many of the complex business problems (e.g., the difference between customers, groups, and accounts).



Technique # 10 Master Modeling Principles and Notation Standards

Use good tools that are flexible and allow linkage from high level diagrams to low level requirements in a central repository.

As a Business Analyst, you should master the following models:

- Context Diagrams
- Data flow Diagrams
- Business process/workflow Models
- Data/object/semantic Models (i.e. ERD and Class diagrams)

If you don't understand context modelling, it is almost impossible to understand the complex business systems that every organization of any size has today.

If you don't understand business process modelling, you are going to have problems unraveling what the organization currently does in a simple enough fashion to help people figure out where they are.

If you can't model semantic categories, logical entities, and/or objects (data flow), you won't be able to understand what people are talking about a lot of the time, neither will you understand the business rules and relationships that drive the organisation.

Do you have any questions?



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