Business Analysis Tools and Techniques

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Agenda

- Terms and Definitions
- Business Analysis Process
- Requirements
- Business Analysis Tools
  - BPMN Modeler – Free Tool (Bizagi)

    Demonstration
- Business Analysis Techniques
  - Try Some Techniques
- Q & A along the way

Terms and Definitions

Business Analysis

Business Analysis: Business analysis is the practice of enabling **change** in an enterprise by defining **needs** and recommending **solutions** that deliver **value** to stakeholders. – *BABOK, IIBA*

Solutions often include a software-systems development component, but may also consist of process improvement, organizational change or strategic planning and policy development. - Wikipedia

Business Analyst

Business Analyst: A business analyst is any person who performs business analysis tasks described in the *BABOK® Guide*, ***no matter their job title or organizational role***. – *BABOK, IIBA*

Financial Analysis, Project Management, Database Administration, System Integration etc. are not Business Analysis tasks but a Financial Analyst, Project Manager, Database Administrator, System Integrator etc. may do some Business Analysis tasks, and a Business Analyst may perform any of the above tasks or tasks in other disciplines.

Business Analyst Roles

	Project/IT Executes projects	Transition/Functional Guides projects	Enterprise/Strategic Creates projects
Generalist	Business Analyst (Project) Management Consultant	Account Manager Business Consultant Customer Relationship Manager Management Consultant Portfolio Manager	Account Manager Business Architect Management Consultant Strategic Planner
Specialist	Agile Business Analyst Business Intelligence Analyst Business Rules Analyst Data Analyst Domain Expert (SME) Process Analyst Product Owner Requirements Engineer/Manager Systems Analyst (I)	Business Intelligence Analyst Domain Expert (SME) Functional Business Analyst Process Owner Product Manager Service Owner Systems/Solution Architect (II)	Domain Expert (SME) IT Strategist Process Architect
Hybrid	BA+PM QA, Development DBA Information Architect Product Manager Project Manager QA Analyst Systems Analyst (II) Usability/UXP	Mid-to Senior Management Product Manager Solution Architect (I) Systems Analyst (III)	CXO Enterprise Architect

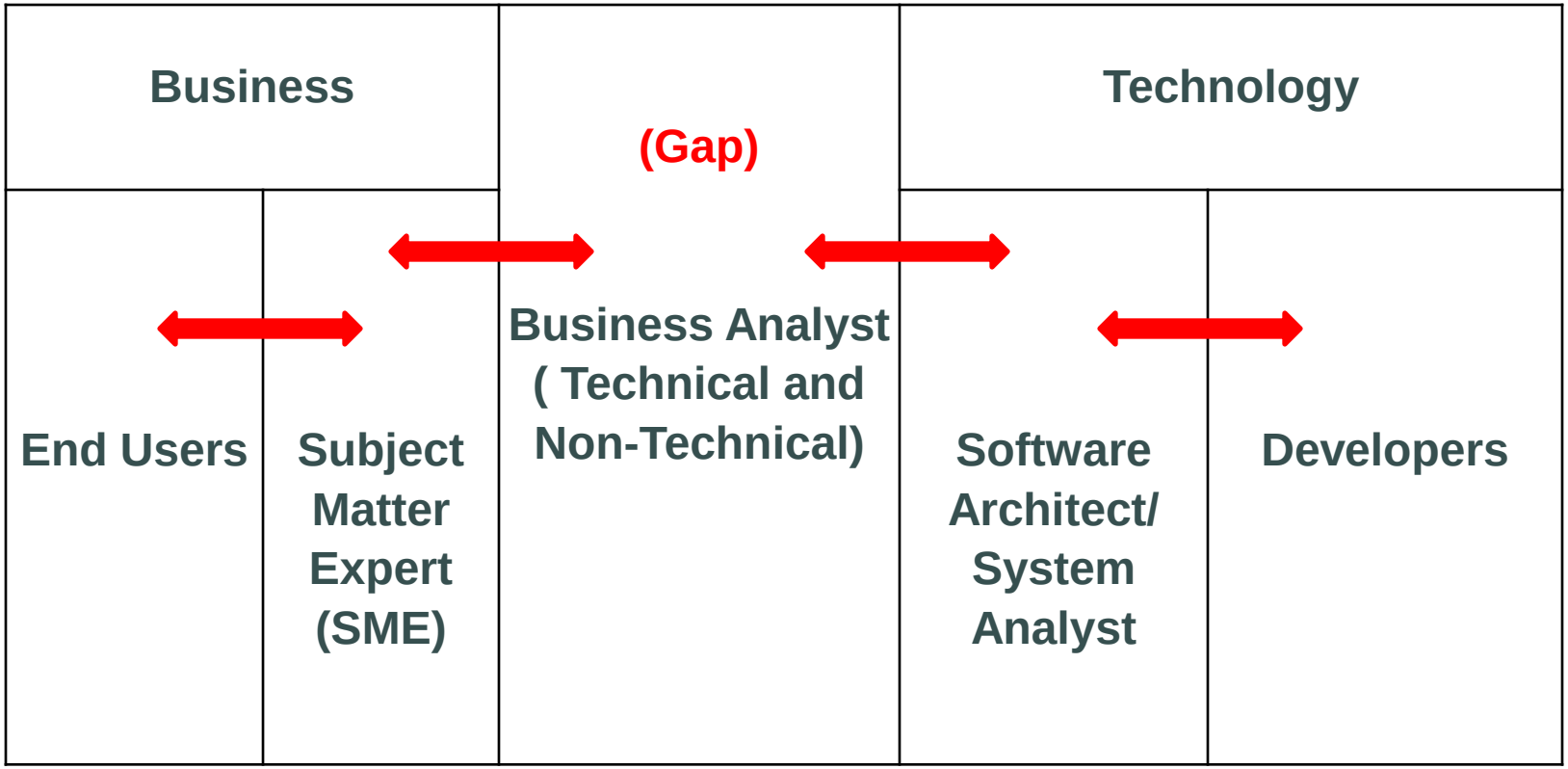
Source: IIBA.org

In System/Software Solution Development

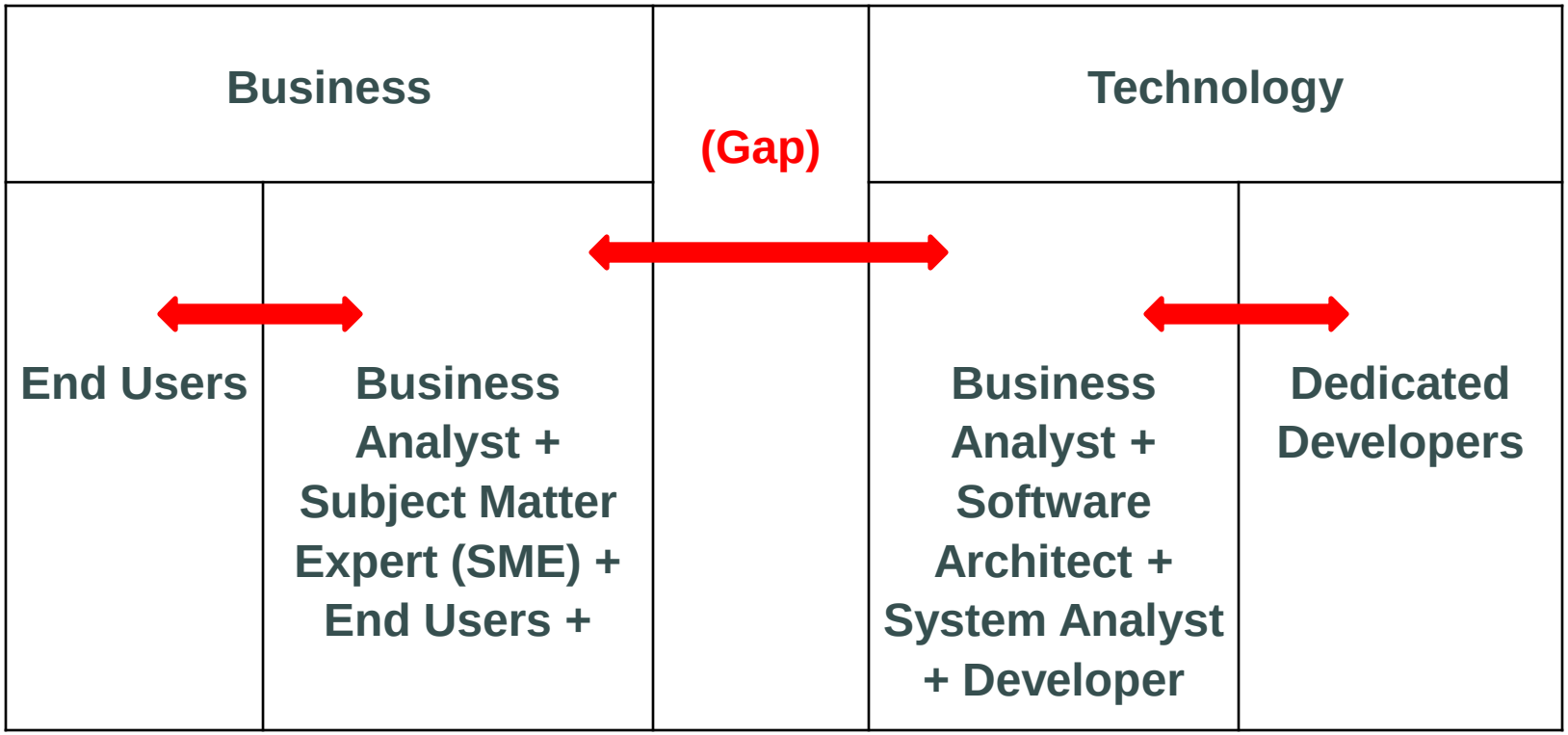
A crude definition: Business Analyst bridges the gap between end users and solution providers/developers by eliciting, analyzing, managing, communicating, verifying and validating end user requirements to recommend and/or design/ formulate a solution.

The solution could be a new software development, an existing software enhancement or procuring a new off-the-shelf software.

Software Development Standard Communication Flow

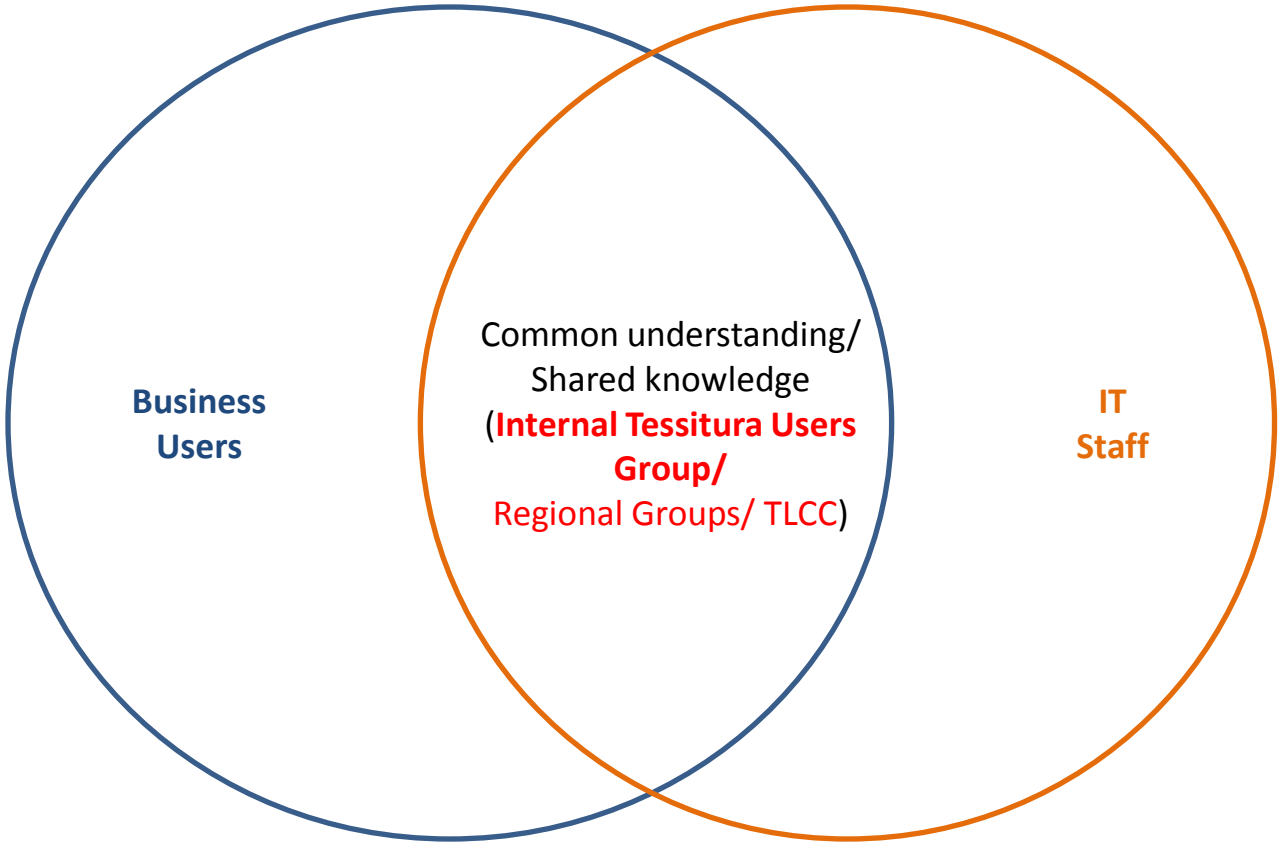


In Reality (Small Organizations)



Business Users and IT Staff wear many hats!

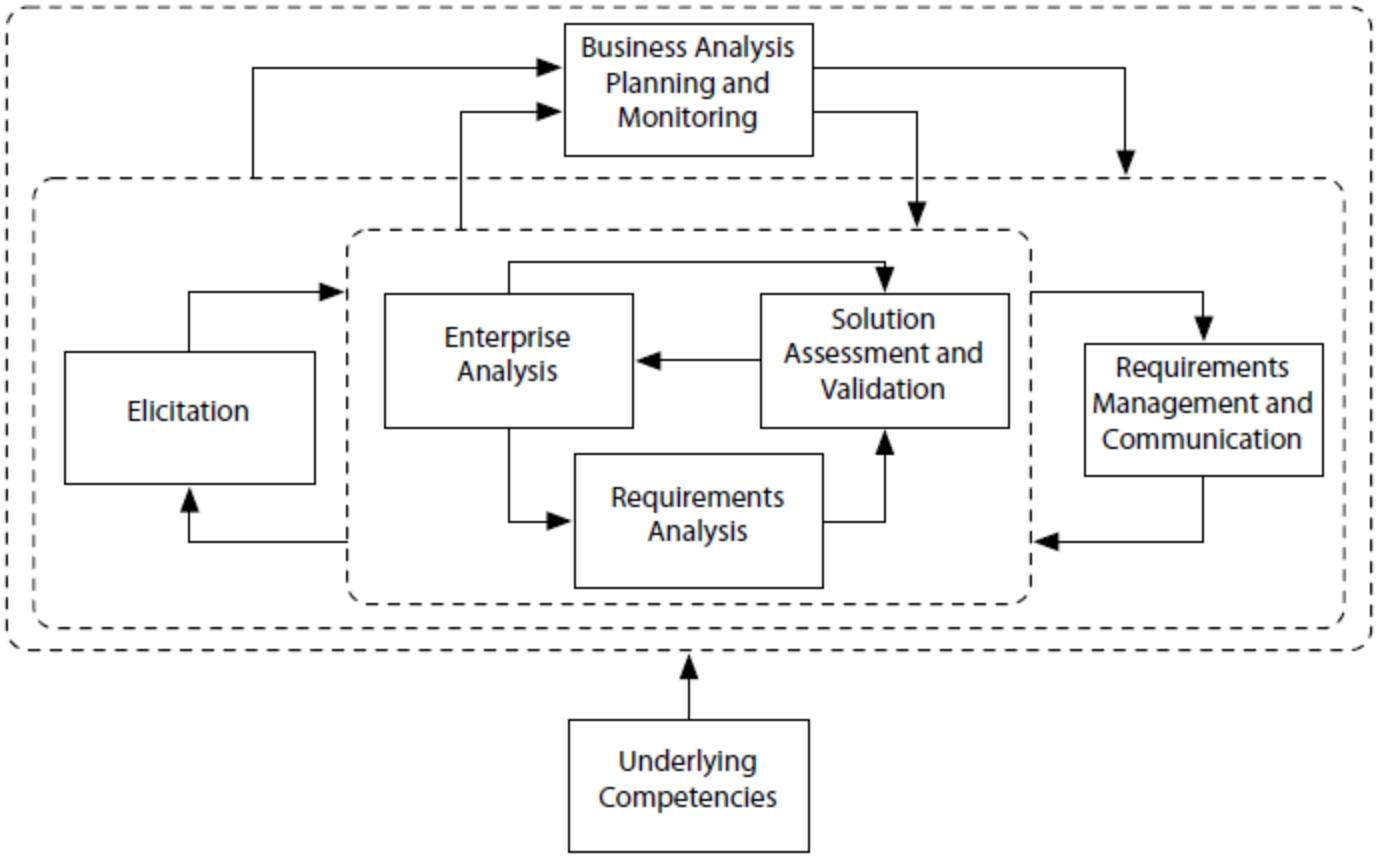
Tessitura Organizations



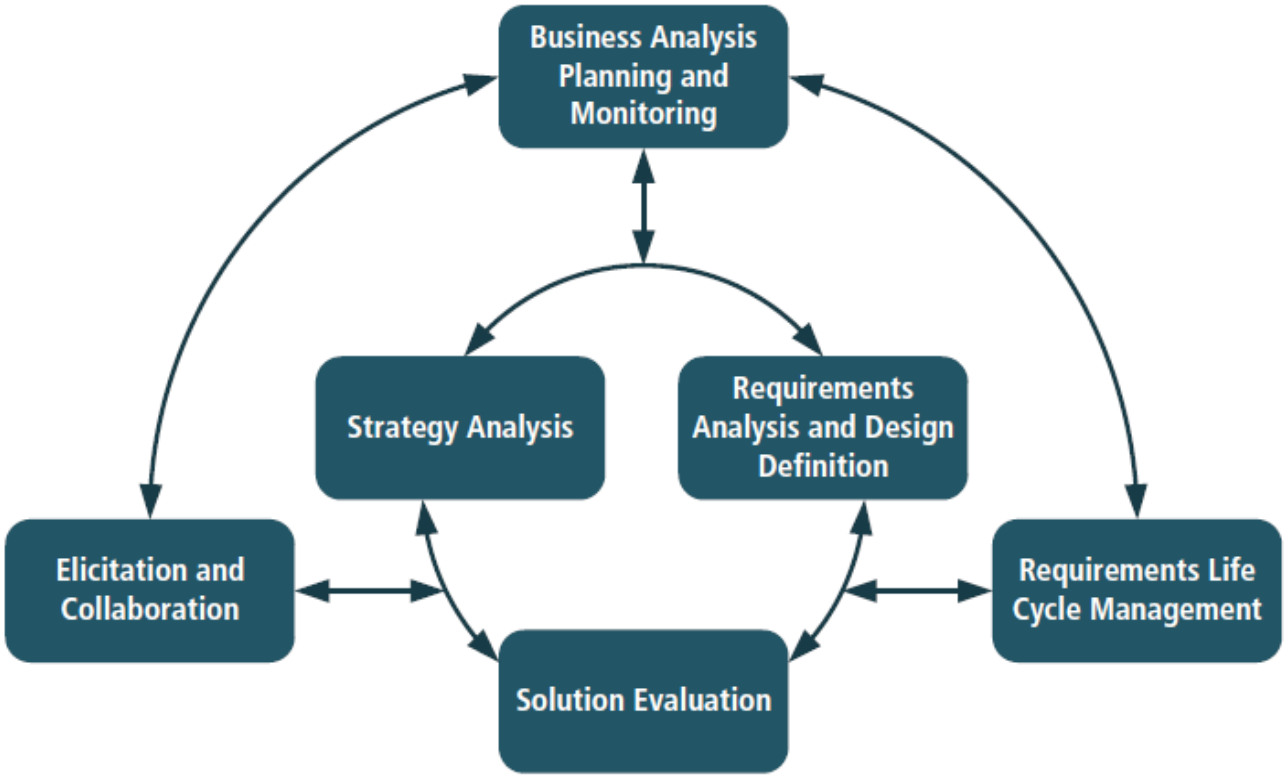
*Good to have your own internal Tessitura Users Group (**Business + IT**) and meet regularly!*

Business Analysis Process

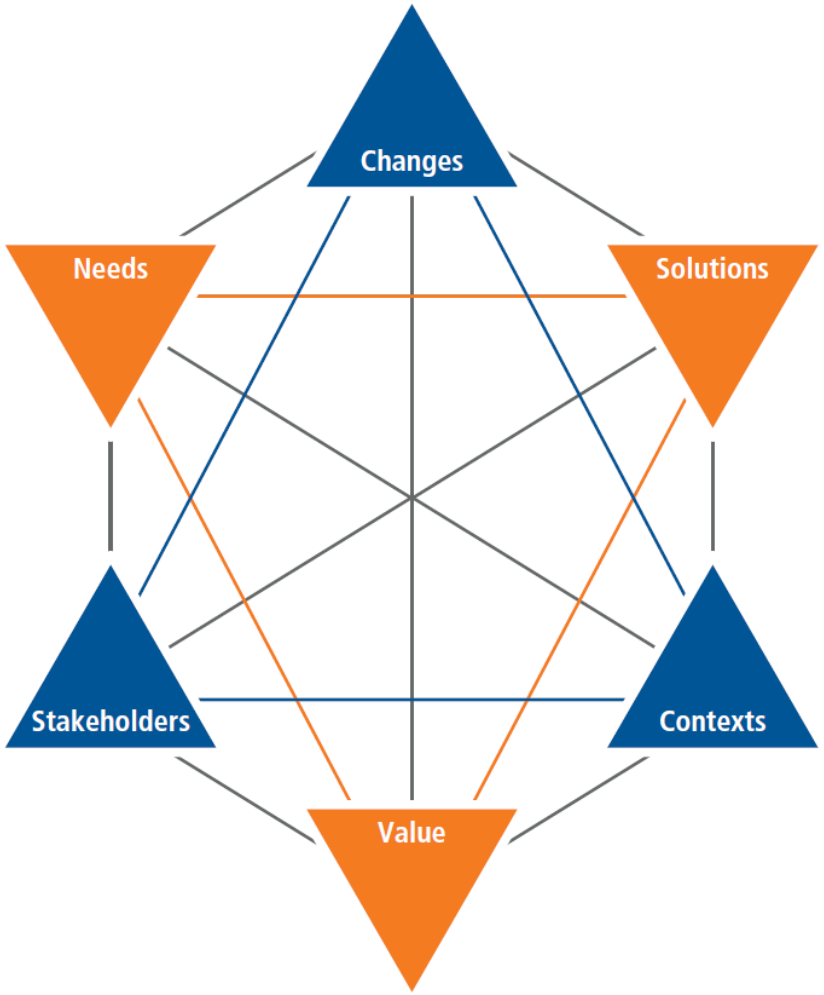
Relationship Between BA Knowledge Areas (BABOK v2.0)



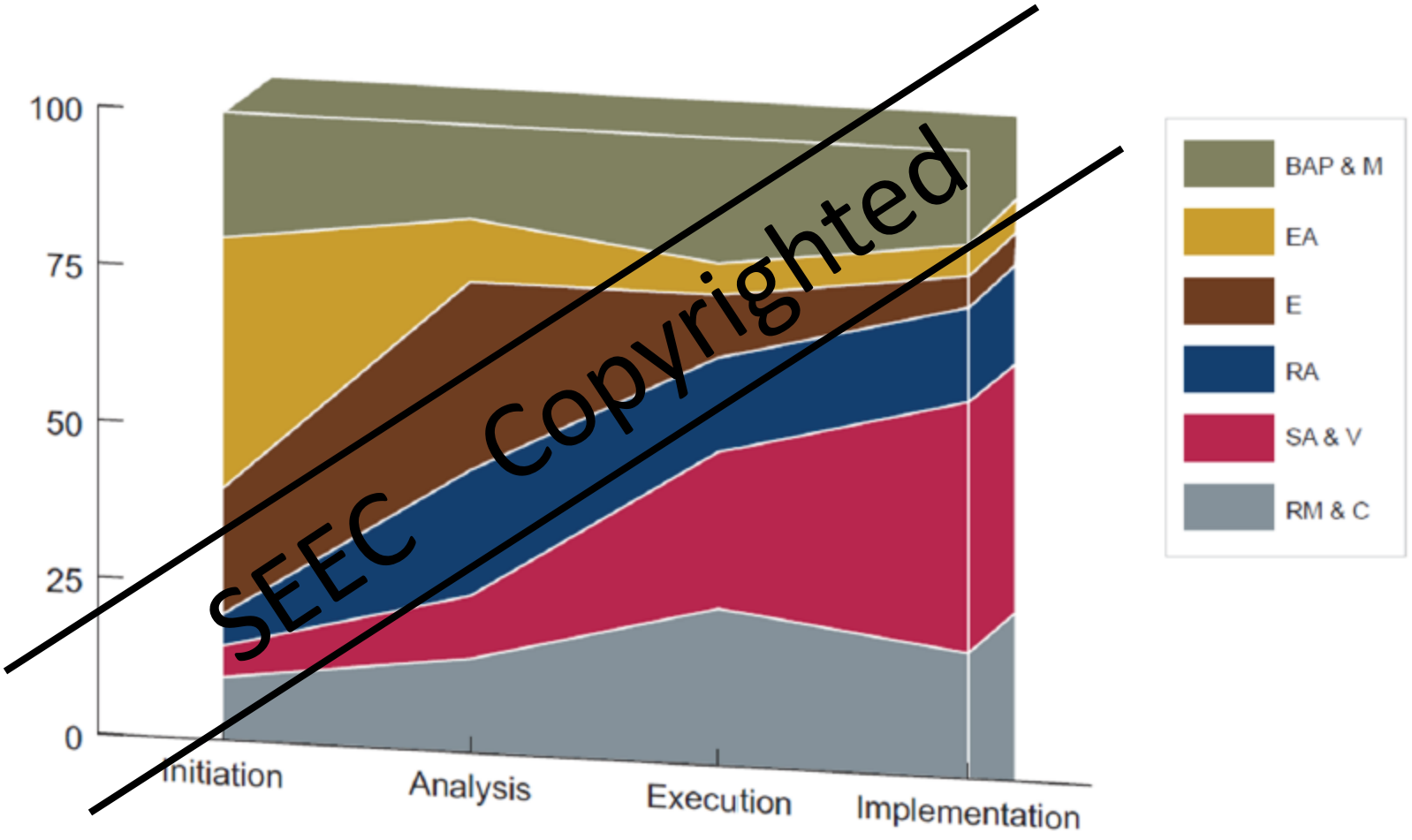
Relationship Between BA Knowledge Areas (BABOK v3.0)



BA Core Concept Model (BABOK 3.0)

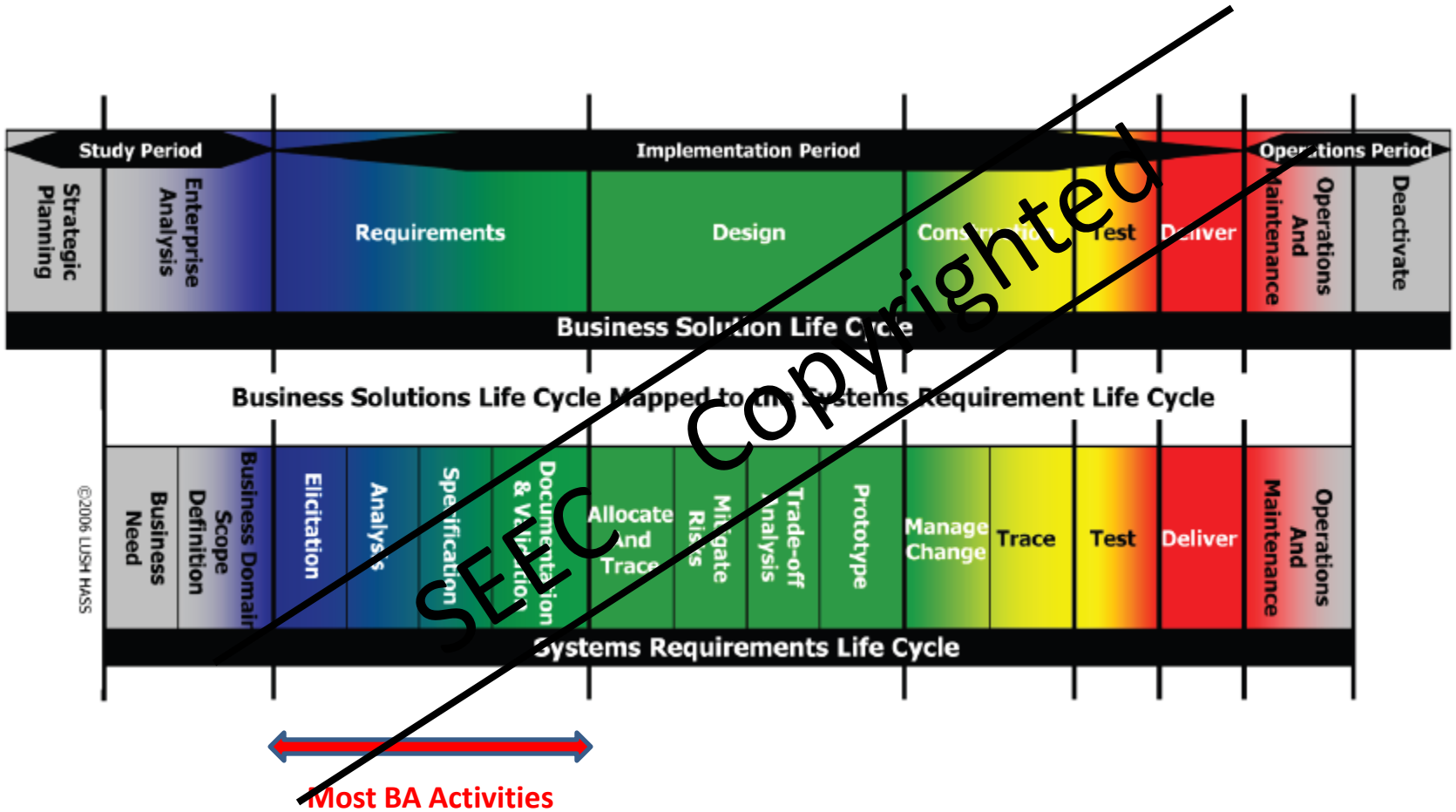


BA Process and Project Life Cycle



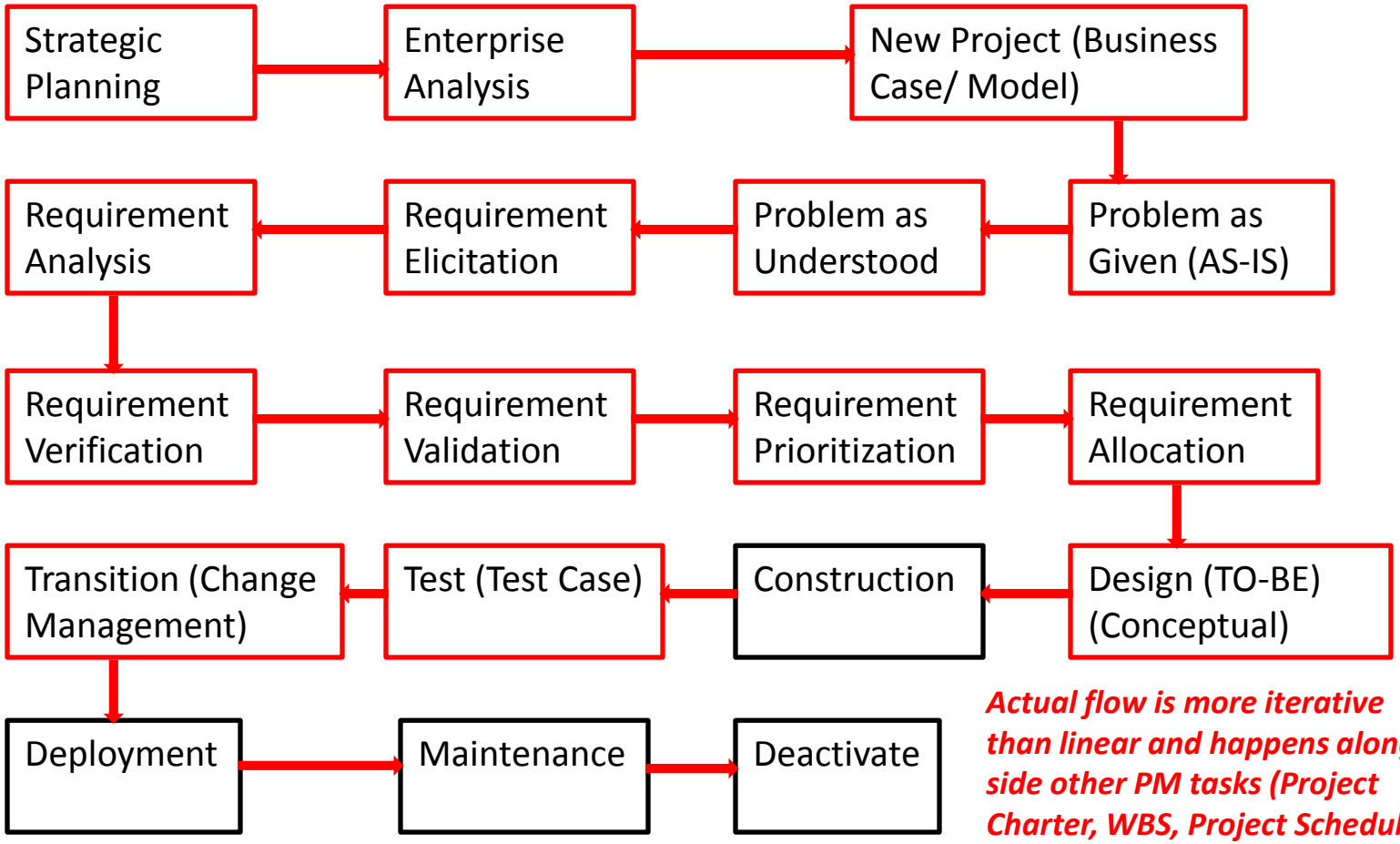
BAP & M: BA Planning and Monitoring, EA: Enterprise Analysis, E: Elicitation, RA: Requirements Analysis, SA & V: Solution Assessment and Validation, RM & C: Requirements Management and Communication

Solution Life Cycle and BA Activities



Solution Life Cycle, BA Deliverables, Requirement Process, Techniques

Rough Overall BA Work Flow



Actual flow is more iterative than linear and happens along side other PM tasks (Project Charter, WBS, Project Schedule etc. creation).

Requirements

Requirement

A condition or capability needed by a stakeholder to solve a problem or achieve an objective.

Requirements are what customers need not what they want!

Standish/CHAOS Report on the Project Environment

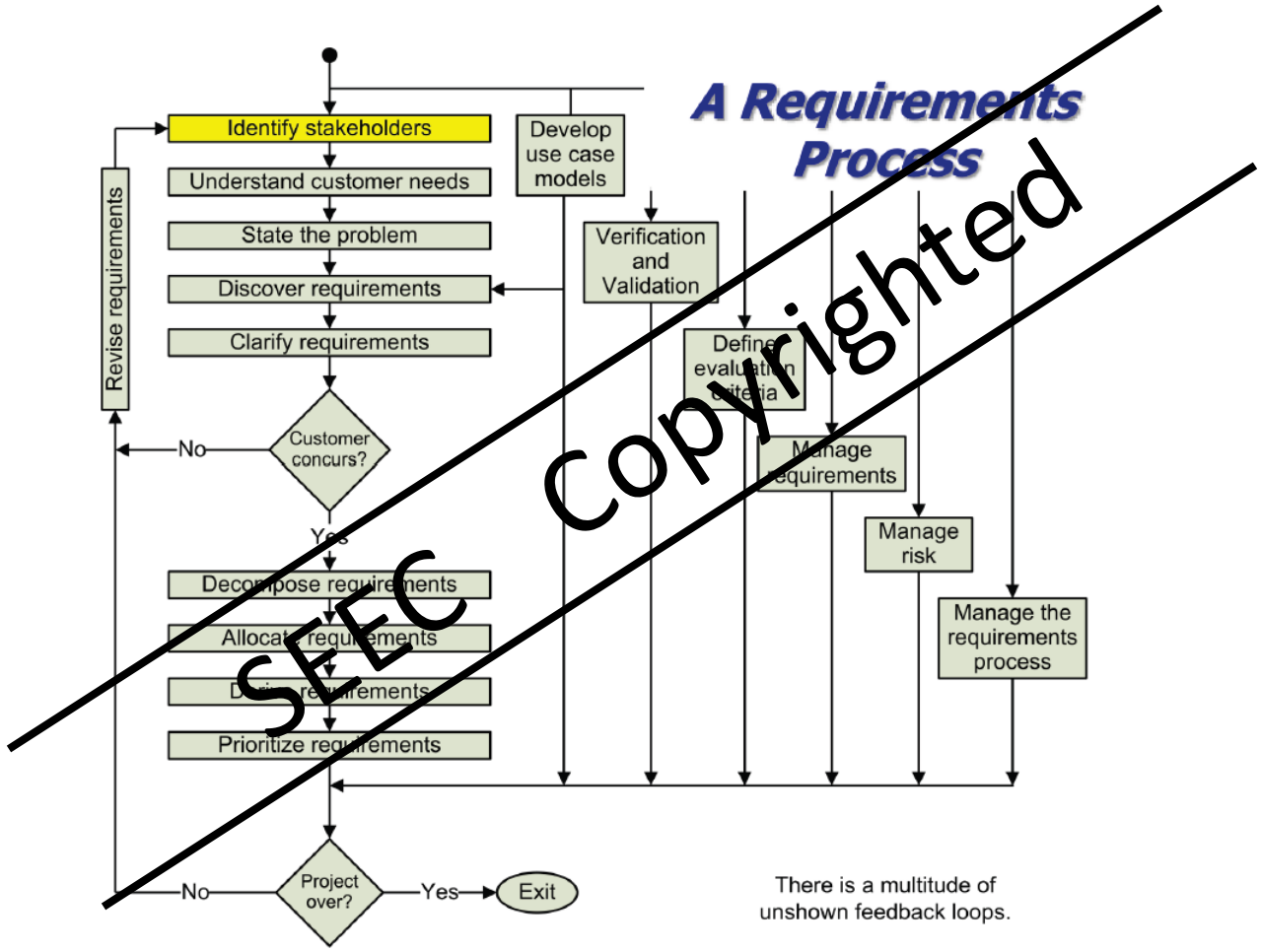
CASE STUDY CONCLUSIONS

The study of each project included adding up success points on the "success potential" chart.

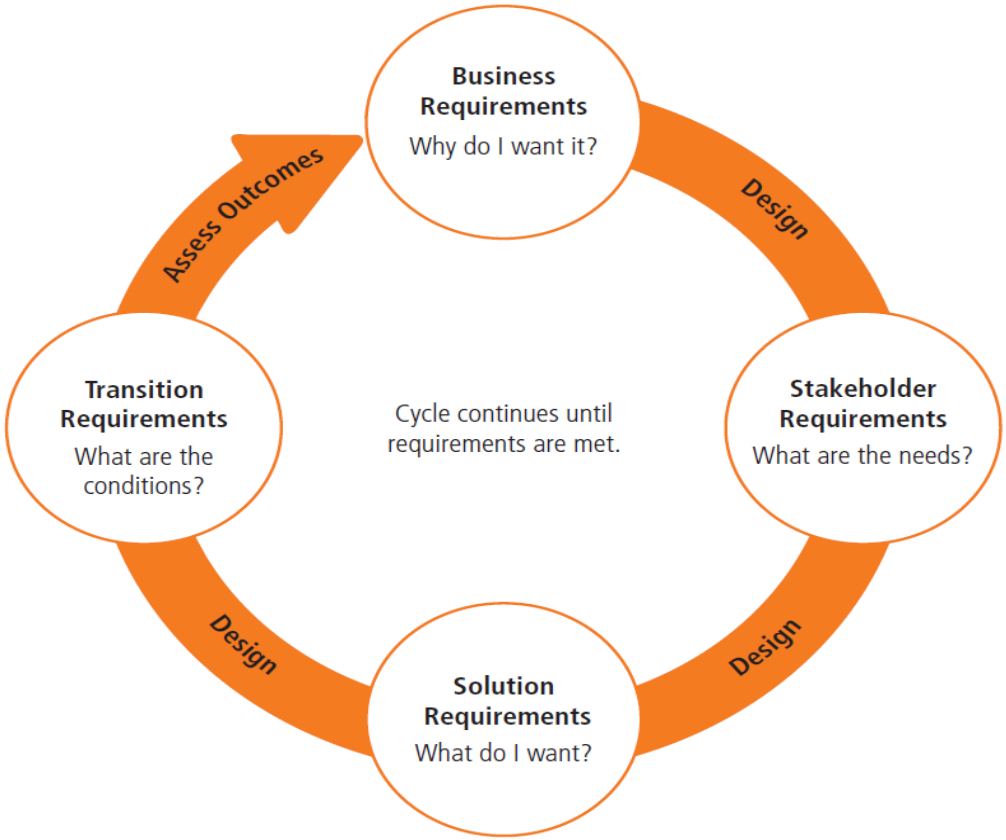
Success Criteria	Points	DMV	CONFIRM	HYATT	ITAMARATI
1. User Involvement	19	NO (0)	NO (0)	YES (19)	YES (19)
2. Executive Management Support	16	NO (0)	YES (16)	YES (16)	YES (16)
3. Clear Statement of Requirements	15	NO (0)	NO (0)	YES (15)	NO (0)
4. Proper Planning	11	NO (0)	NO (0)	YES (11)	YES (11)
5. Realistic Expectations	10	YES (10)	YES (10)	YES (10)	YES (10)
6. Smaller Project Milestones	9	NO (0)	NO (0)	YES (9)	YES (9)
7. Competent Staff	8	NO (0)	NO (0)	YES (8)	YES (8)
8. Ownership	6	NO (0)	NO (0)	YES (6)	YES (6)
9. Clear Vision & Objectives	3	NO (0)	NO (0)	YES (3)	YES (3)
10. Hard-Working, Focused Staff	3	NO (0)	YES (3)	YES (3)	YES (3)
TOTAL	100	10	29	100	85

With only 10 success points, the DMV project had virtually no chance of success. With 100 success points, Hyatt's reservation project had all the right ingredients for success. With only 29 success points, the CONFIRM project had little chance of success. With 85, Itamarati, while not as assured as Hyatt, started with a high success probability.

Requirement Process



Requirements and Design Cycle (BABOK 3.0)



Requirements are focused on the need; designs are focused on the solution.

Requirements Classification

- Business Requirement
- Stakeholder requirement
- Solution Requirement
  - Functional Requirement
  - Non-functional Requirement
- Transition Requirement

Requirement Verification vs Validation

The purpose of **Verify** Requirements is to ensure that requirements and designs specifications and models **meet quality** standards and are usable for the purpose they serve.

The purpose of **Validate** Requirements is to ensure that all requirements and designs **align** to the business requirements and support the delivery of needed value.

Requirement Tracing

The ability to identify and document the lineage of each requirement, including its derivation (backward traceability), its allocation (forward traceability), and its relationship to other requirements.”.

BA Tools

BA Tools

1. Word Processors (Example: MS Word)
2. Presentation Software (Example: MS PowerPoint)
3. Spreadsheets (Example: MS Excel)
4. Communication Tools (Example: MS Outlook, IM Tools etc.)
5. Collaboration and Knowledge Management Tools (Example: Wikis, Discussion Forum, SharePoint etc.)
6. Modeller (Example: Visio, Bizagi)

Modeling Notation: BPMN and UML

1. **BPMN** stand for Business Process Model and Notation, and **UML** stands for Unified Modeling Language
2. Both are from Object Management Group (OMG)
3. BPMN is more suitable for Business Process Diagram (BPD)
4. UML is more suited for system level diagram (Class diagram, Sequence diagram etc.). It is more IT biased.

Bizagi – BPMN Modeler Demonstration

BA Techniques

BA Techniques

Acceptance and Evaluation Criteria
Backlog Management
Balanced Scorecard
Benchmarking and Market Analysis
Brainstorming
Business Capability Analysis
Business Cases
Business Model Canvas
Business Rules Analysis
Collaborative Games
Concept Modelling
Data Dictionary
Data Flow Diagrams
Data Mining
Data Modelling
Decision Analysis
Decision Modelling
Document Analysis
Estimation
Financial Analysis
Focus Groups
Functional Decomposition
Glossary
Interface Analysis
Interviews
Item Tracking
Lessons Learned
Metrics and Key
Performance Indicators (KPIs)
Mind Mapping

BA Techniques

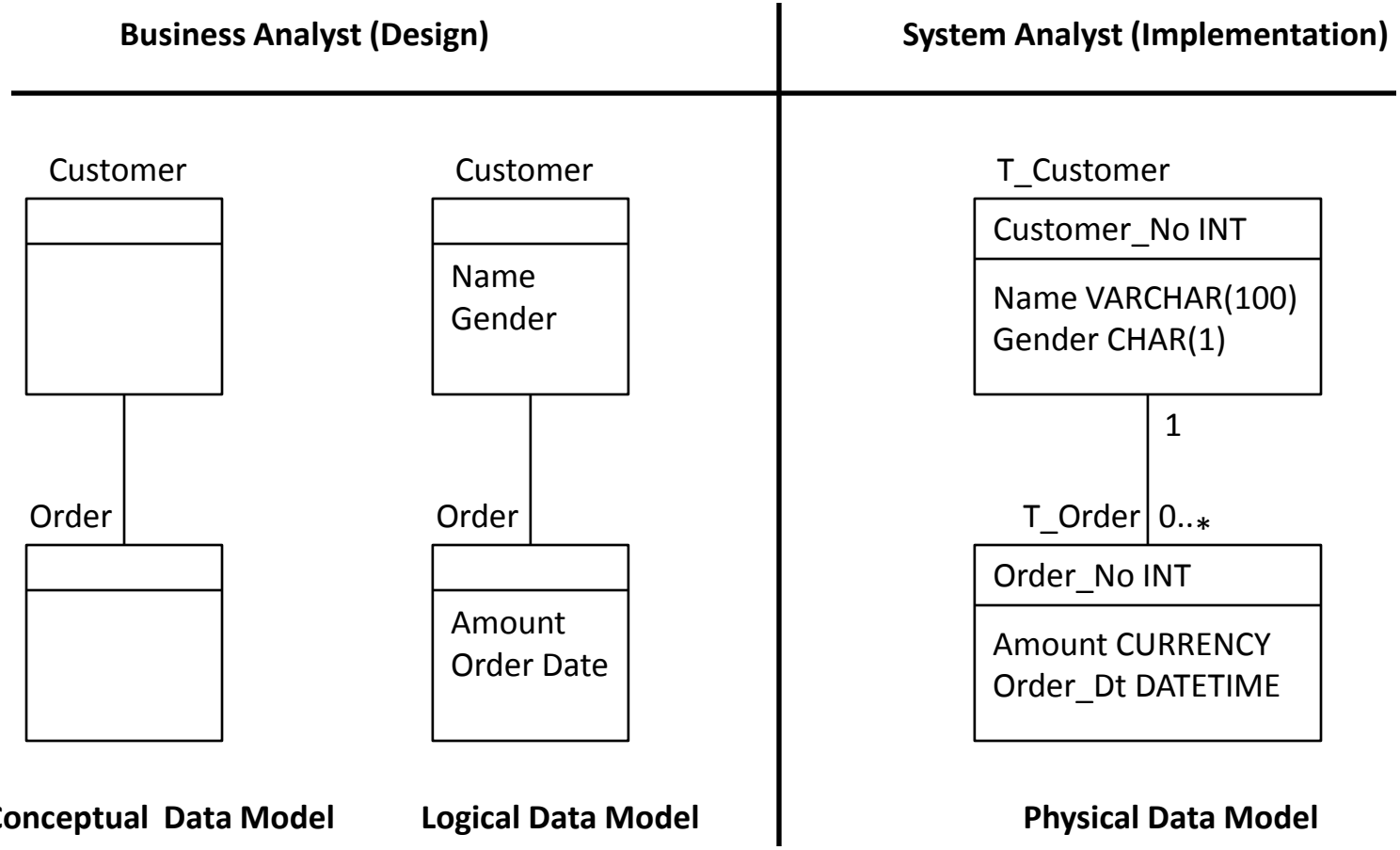
Non-Functional Requirements Analysis
Observation
Organizational Modelling
Prioritization
Process Analysis
Process Modelling
Prototyping
Reviews
Risk Analysis and Management
Roles and Permissions Matrix
Root Cause Analysis
Scope Modelling
Sequence Diagrams
Stakeholder List, Map, or Personas
State Modelling
Survey or Questionnaire
SWOT Analysis
Use Cases and Scenarios
User Stories
Vendor Assessment
Workshops

Glossary Example

Term	Definition
Customer	
Donor	
Subscriber	
High End Donor	
New Subscriber	
Renewed Subscriber	
Donation Amount	
Order Amount	
Revenue	
Fees	

A glossary defines key terms relevant to a business domain. A list of terms and established definitions provides a common language that can be used to communicate and exchange ideas. A glossary should be equally accessible to all stakeholders.

Data Modeling and ERD Example



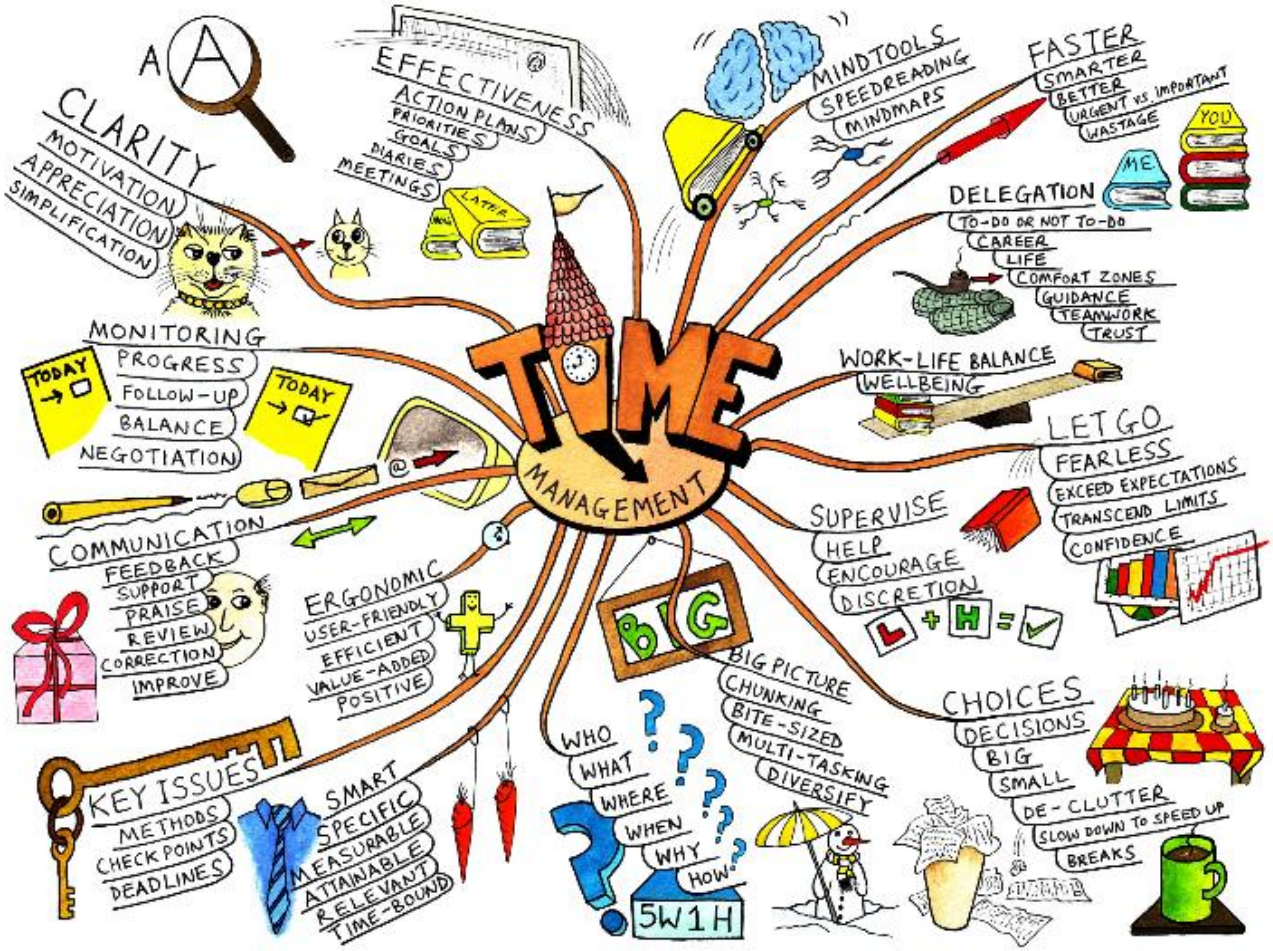
A data model describes the entities or data objects relevant to a domain, the attributes that are used to describe them, and the relationships among them to provide a common set of semantics.

Data Dictionary Example

Field Name	Field Type	Field Size	Description	Notes
Table: T_CUSTOMER (Main customer table)				
CUSTOMER_NO	Numeric		Unique Customer No	
F_NAME	Text	20	Customer First Name	
M_NAME	Text	20	Customer Middle Name	
L_NAME	Text	55	Customer Last Name	
……	……	……	……..	
Table: T_ORDER (Main order table)				
ORDER_NO	NUMERIC		Unique Order No	
CUSTOMER_NO	NUMERIC		Customer reference	
ORDER_DT	DATE		Order Date	
TOT_PAID_AMT	CURRENCY		Total Order Paid Amount including Fees and Taxes	
……	……	……	……..	

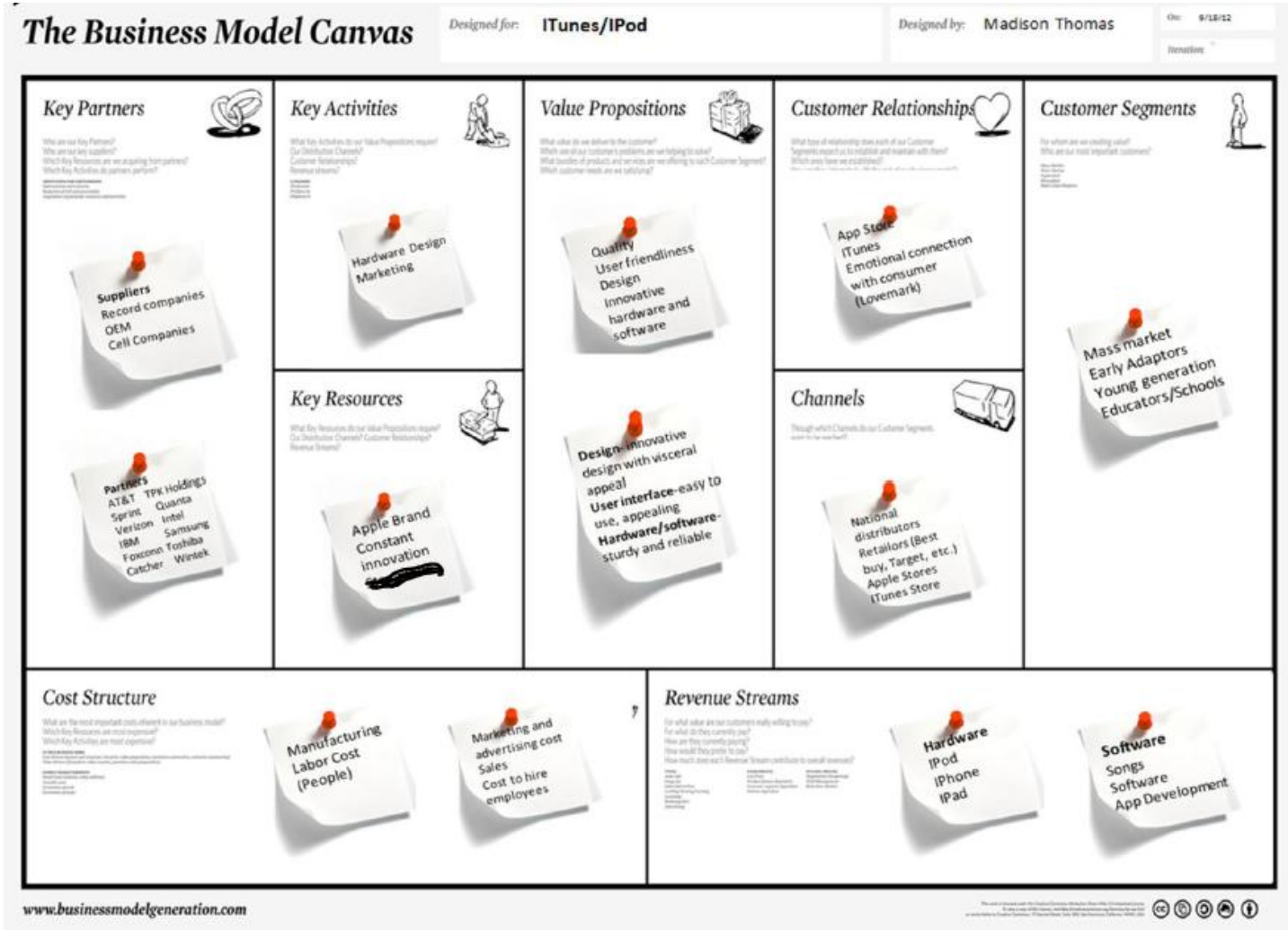
Data dictionaries are used to standardize usage and meanings of data elements between solutions and between stakeholders.

Idea/Mind Map Example



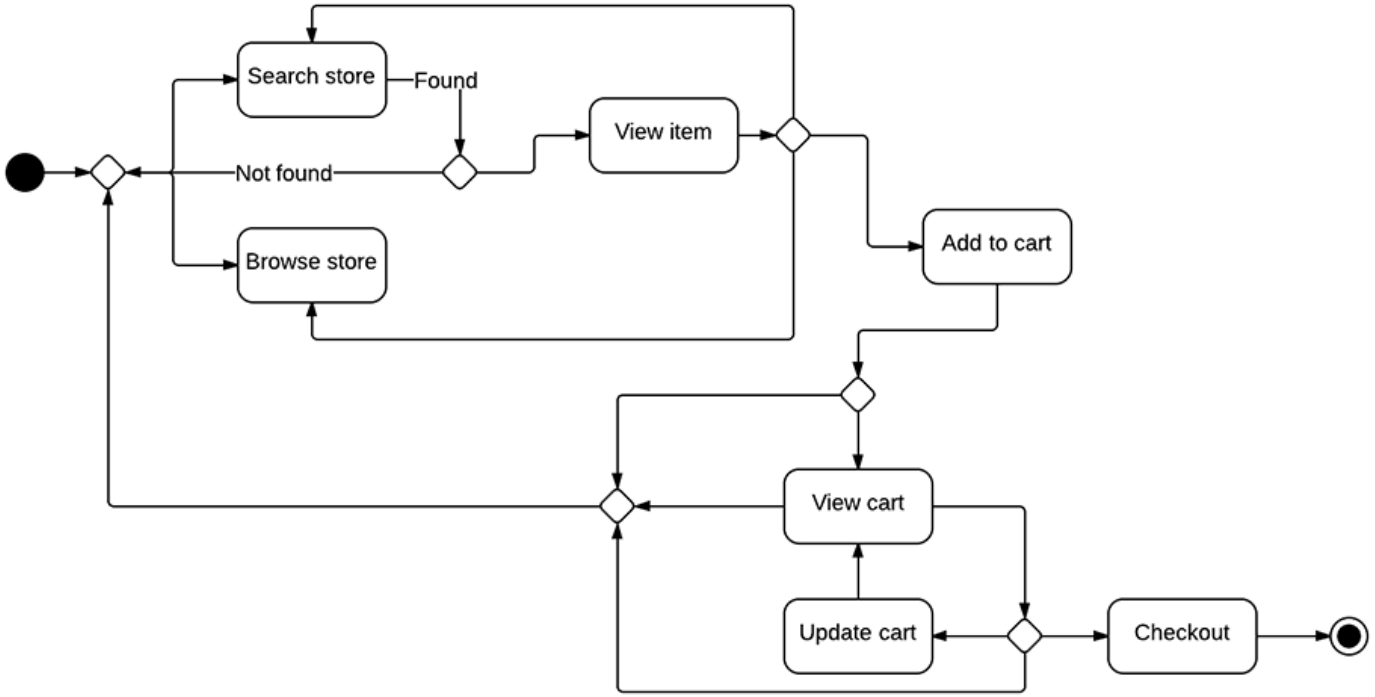
Idea maps can be applied to most of life's situations that involve any learning or thinking!

Business Model Canvas Example



Activity Diagram Example

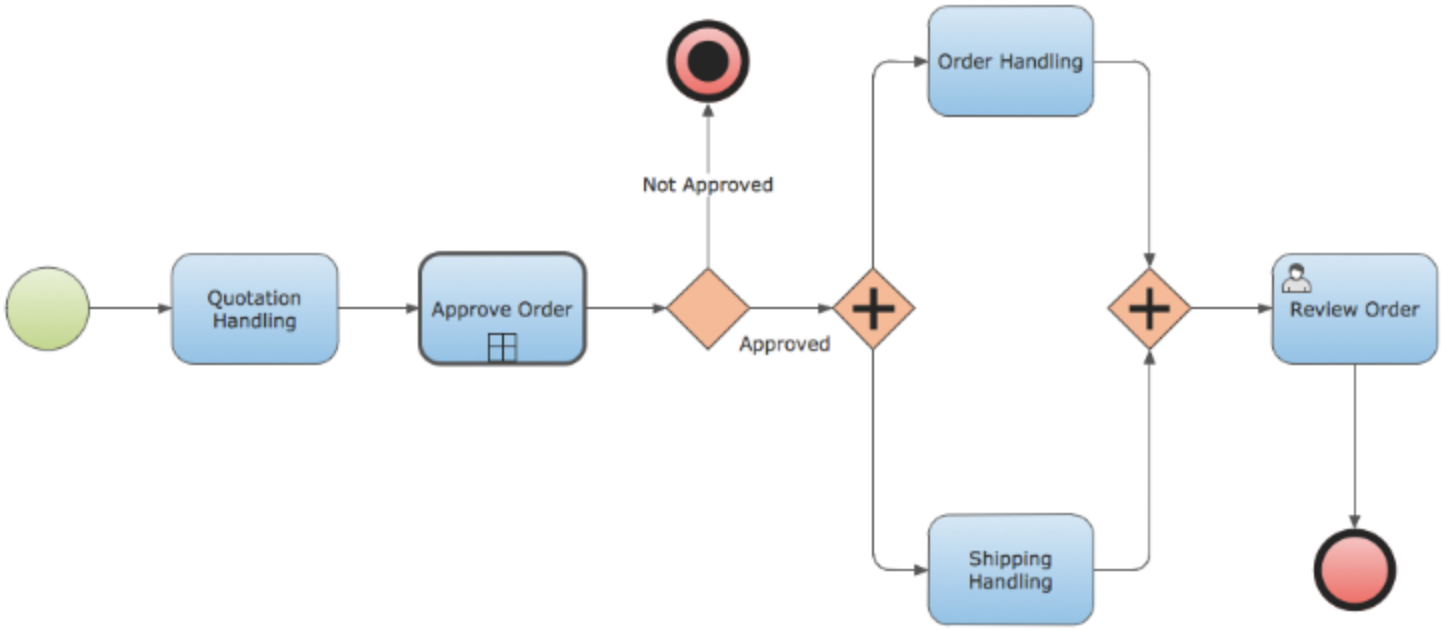
Online shopping System Activity Diagram



It's an UML diagram. Probably only UML diagram that's business users friendly. It's more suitable for automated part of the solution. It's very good to show process flow within a system which make sense to both end users and software developers. There are only 13 notations.

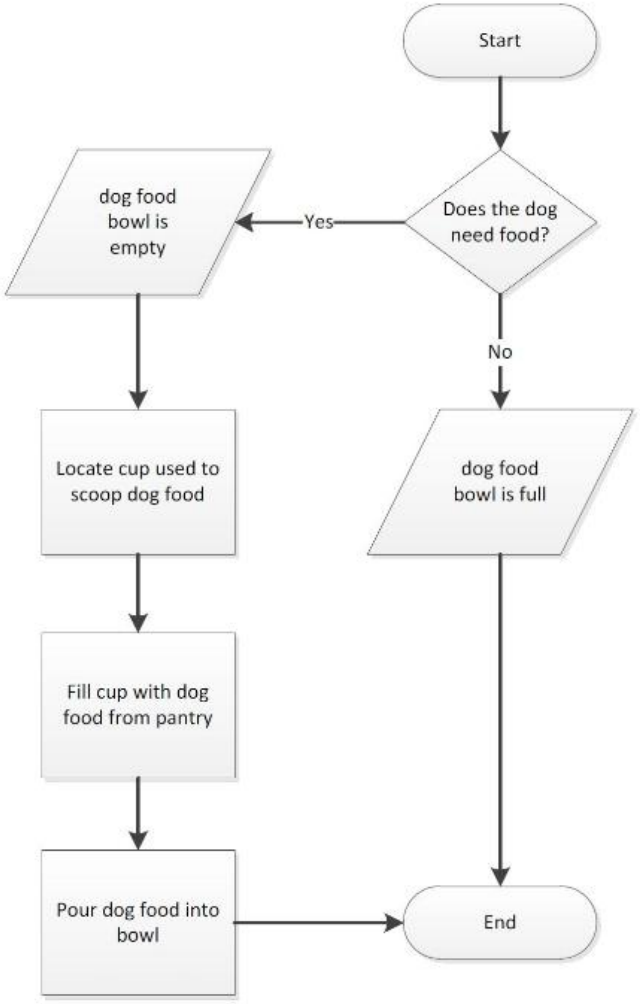
BPMN Diagram Example

Order Process Diagram



BPMN is relatively new and more suitable for physical process and Business Process Diagram. It's more business users friendly.

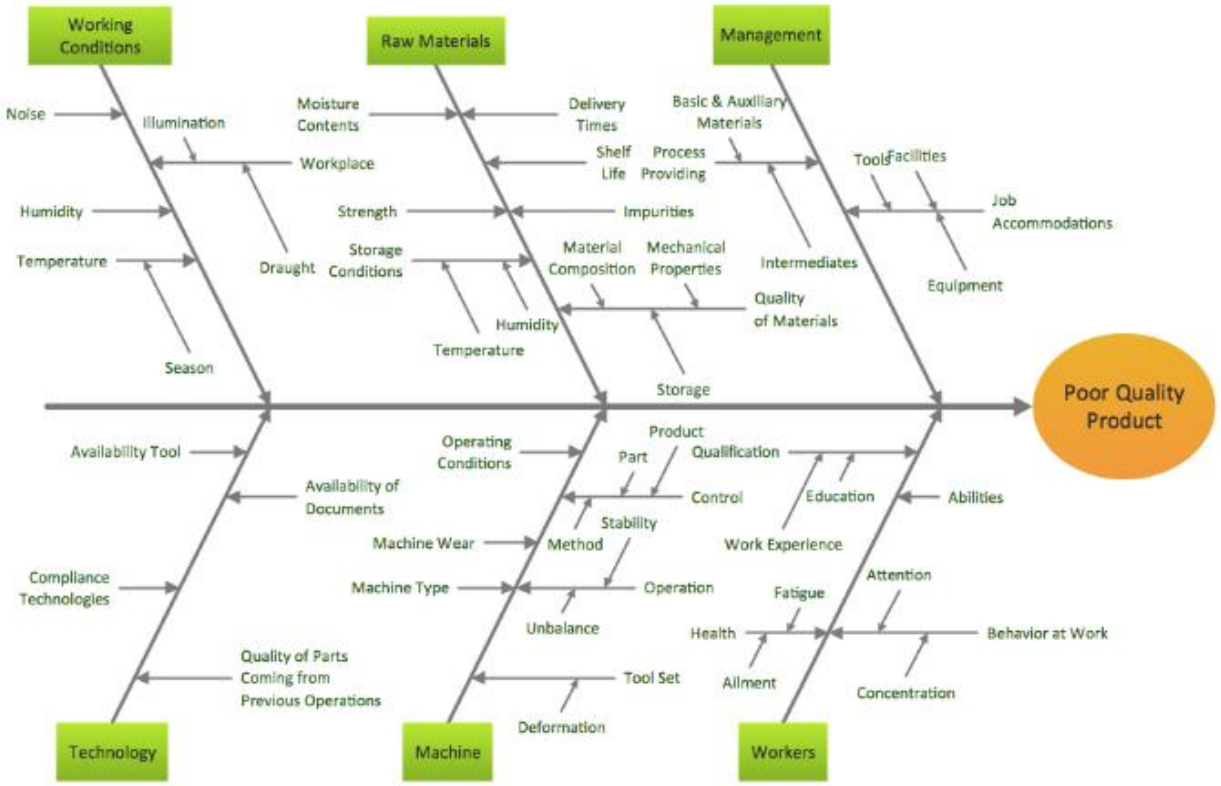
Flow Chart Example



It's the simplest among process flow diagrams including BPMN and UML. It's good to show simple physical process flow. It easy to understand for both business users and IT.

Cause and Effect Diagram Example

Causes of Low Quality Product



Good for root cause identification along with 5 Whys

5 Whys Example

My car will not start (the problem)

1. Why? - The battery is dead.
2. Why? – The alternator is not functioning.
3. Why? - The alternator belt has broken.
4. Why? – The alternator belt was well beyond its useful service life and has never been replaced.
5. Why? – I have not been maintaining my car according to the recommended service schedule. (**Fifth why, a root cause.)**

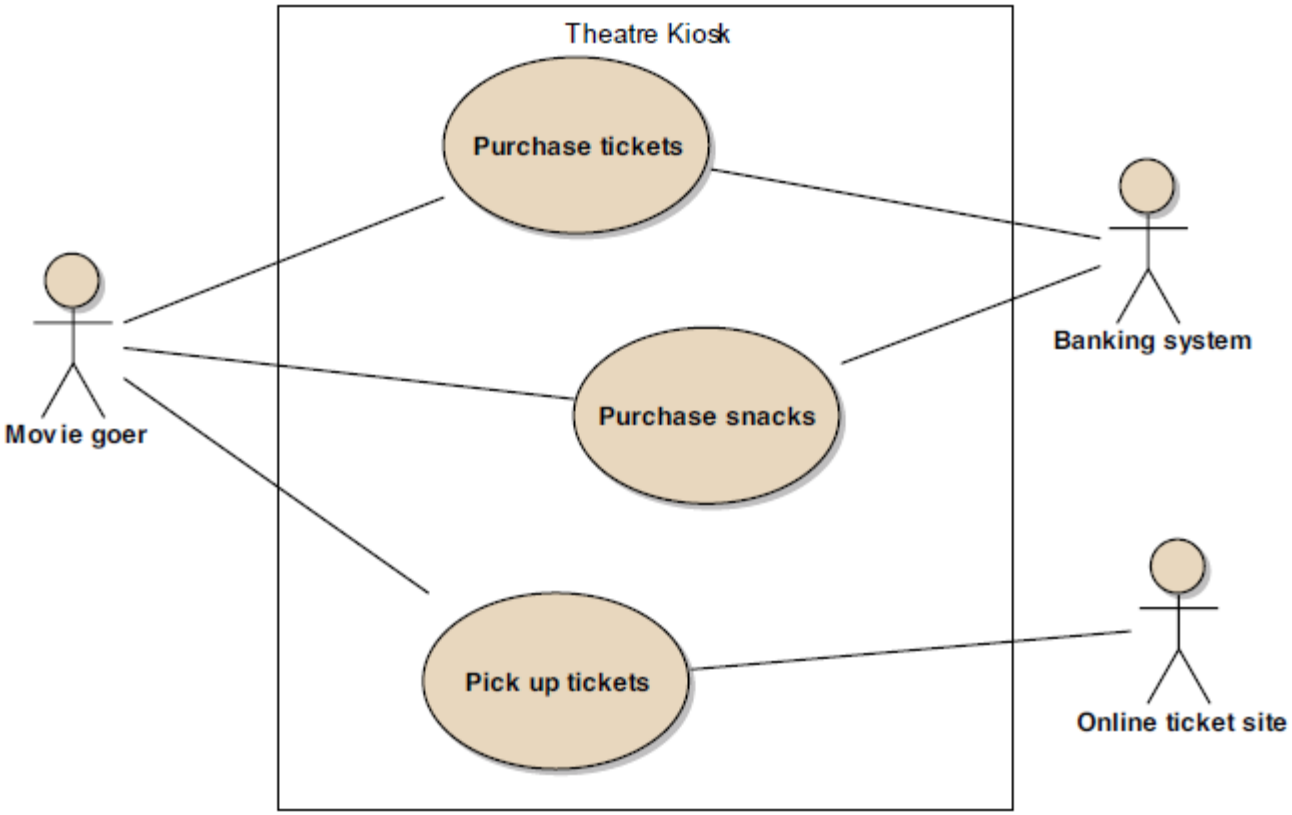
5 Why is a rule of thumb – most of the time five iterations of asking why is generally sufficient to get a root cause. More is ok too.

User Story Example

As a front of house supervisor I want a ticket scanning report so that I can evaluate performance of ushers.

Tied to small, implementable, and testable slices of functionality, which facilitates rapid delivery and frequent customer feedback. A user story may be supported through the development of detailed acceptance criteria.

Use Case Diagram Example



Decision Analysis: Weighted Decision Matrix Example

	Criterion Weighting	Alternate 1	Alt 1 Value	Alternate 2	Alt 2 Value	Alternate 3	Alt 3 Value
Criterion 1	1	Rank = 1*3	3	Rank = 1*5	5	Rank = 1*2	2
Criterion 2	1	Rank = 1*5	5	Rank = 1*4	4	Rank = 1*3	8
Criterion 3	3	Rank = 3*5	15	Rank = 3*1	3	Rank = 3*5	15
Criterion 4	5	Rank = 5*1	5	Rank = 5*5	25	Rank = 5*3	15
Weighted Score			28		37		40

A weighted decision matrix assesses options in which each criterion is weighted based on importance. The higher the weighting, the more important the criterion.

Use Case Description Example

Use Case: Purchase tickets

1. The use case starts when the movie goer chooses the option to buy tickets
2. The system offers a choice between today and a date in the future
3. The movie goer selects today
4. The system offers a list of movies showing on the selected day
5. The movie goer selects a movie
6. The system offers a list of available showings for the movie
    1. A showing is available is it starts in the future and at least 10% of seats remain available
7. The movie goer selects a showing
8. The system offers the types of tickets available
    1. Ticket types are determined by business rule BR001
9. …

A use case is a combination of use case diagram and description. It's a subcomponent of the requirement documentation that focuses on a system behavior.

More Q & A

Thank you

Email: mfaruqe@national.ballet.ca

Rehearsal Hall 1
for
Raffle Draw and Closing