# Foundations of Business Analysis

## Module 2: Business Analysis Techniques I

# Course Outline

| 1 | Introduction to Business Analysis and underlying competencies | 2 | BA techniques I | 3 | BA techniques II |
|---|---|---|---|---|---|
| High level introduction to Business Analysis practices and underlying competencies for students or professionals who are interested in Business Analyst career | | • Strategy Analysis<br>• Elicitation & Collaboration<br>• Requirements Analysis & Design Definition | | • Requirements Life Cycle Management<br>• Solution Evaluation<br>• BA Planning & Monitoring | |

# Learning Outcome

## You'll Learn to:

- Classify the techniques used in Strategy Analysis according to their purpose(s)
- Interpret a context diagram and construct a data flow
- Classify the techniques used in Elicitation & Collaboration, and Requirements Analysis & Design Definition according to purpose
- Create and formulate User Stories
- Choose examples and definitions for BA techniques

# Topics for Module 2

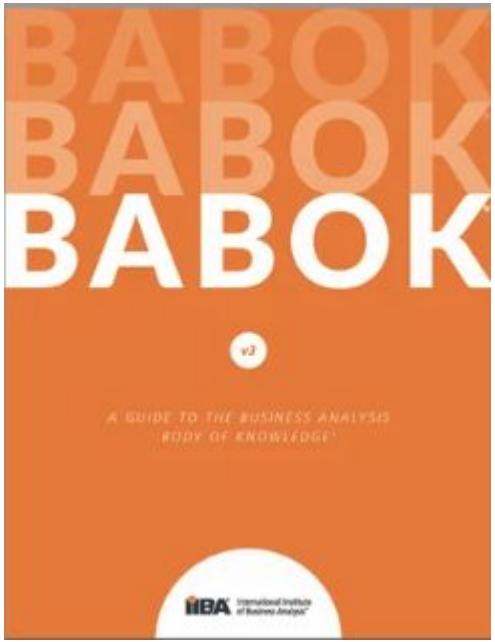
1. Introduction to Techniques
2. Strategy Analysis
3. Elicitation & Collaboration
4. Requirements Analysis & Design Definition

# 1 Introduction to Techniques

# Resources

**BABOK V3**

- Chapter 10: Techniques in alphabetical order
- Chapters 3-8: Within each KA task, there is a list of commonly used techniques
- Appendix B: Mapping each technique to task/KA



# BA techniques I

## Strategy Analysis

- Balanced Scorecard 223
- Benchmarking and Market Analysis 226
- Business Capability Analysis 230
- **Business Cases 234**
- Business Model Canvas 236
- **Scope Modelling 338**
- Concept Modelling 245
- Financial Analysis 274
- Metrics & Key Performance Indicators (KPIs) 297
- **SWOT Analysis 353**
- Mind Mapping 299
- Vendor Assessment 361

## Elicitation & Collaboration

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- **Stakeholder List, Map, or Personas 344**
- **Brainstorming 227**
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- Collaborative Games 243
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- Focus Groups 279
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- **Observation 305**

## Requirements Analysis & Design Definition

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# BA techniques II

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- **Organizational Modelling 308**
- Roles & Permissions Matrix 333
- Root Cause Analysis 335

## BA Planning & Monitoring

- **Estimation 271**
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- Lessons Learned 296
- Reviews 326
- Survey or Questionnaire 350
- Workshops 363

# BA techniques

- Utilize to perform BA Tasks
- Most Common and Widespread
- Often used in conjunction to perform BA Tasks
- Called by other names
- Used outside of BA work

**How to Choose a BA Technique?**

- Most appropriate for your situation
- BA skill set
- Stakeholder preference
- Others?

# 2 BA TECHNIQUES I: STRATEGY ANALYSIS

- Look at the Big Picture
- Analyze what the business needs to satisfy its goals
- Look into potential options and evaluate them for feasibility and profitability
- Provide the change strategy to **direct future activities**

- Balanced Scorecard 223
- Benchmarking and Market Analysis 226
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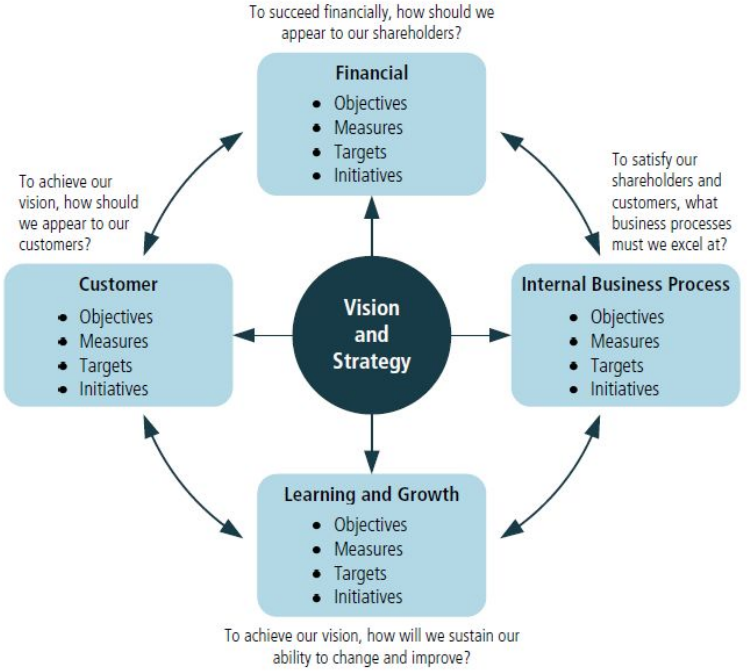
# Balanced Scorecard (BSC)

Set of measurements chosen for strategic importance

- Communications Tool
- Measurement System
- Strategic Management System

– Balanced view to **selecting projects**



# Balanced Scorecard (BSC) – Example

| | Objectives | Measures (D=Drivers) | Targets | | | Initiatives |
|---|---|---|---|---|---|---|
| | | | FY01 | FY02 | FY03 | |
| Financial | •Maximize returns | •ROCE | 14% | 14.5% | 15% | |
| | •Profitable growth | •Revenue growth | 6% | 8% | 12% | |
| | •Leverage asset base | •Asset utilization rate | 80% | 85% | 90% | |
| | •Manage operating costs | •Operating costs / customer | $150 | $140 | $125 | |
| Customer | •Industry leading customer loyalty | •Customer Satisfaction Rating | 80% | 85% | 90% | •Customer loyalty program |
| Internal Processes | **Business Growth** | | | | | |
| | •Capitalize on deregulation opportunities | •% revenue from deregulated products/services | 5% | 7% | 10% | •Telecom infrastructure development |
| | | •% trading revenue | 10% | 12% | 15% | •Trading risk assessment |
| | | •Revenue from new services | $500M | $550M | $600M | |
| | •Optimize trading opportunities | •% customers serviced through alliances/joint ventures | 10% | 20% | 25% | |
| | •Develop innovative services | •NPV product/service pipeline | $500M | $550M | $600M | |
| | •Use alliances and joint ventures | •% R&D projects meeting protocol gates (**D**) | 90% | 95% | 100% | •Research alliance program |
| | •Leverage cross-group R&D | | | | | |
| | **Continued Public Support** | •Customer/partner satisfaction (5 point scale) | 4.0 | 4.5 | 4.5 | •Preventative maintenance |
| | •Proactively manage relationships | •Reliability index | 90/100 | 92/100 | 95/100 | |
| | •Ensure reliable services | •% communication/education coverage | 100% | 100% | 100% | •Community outreach |
| | •Communicate/educate customers | •% communication/education plans executed (**D**) | 80% | 85% | 90% | |
| | **Customer Service Excellence** | •Promise delivery % | 90% | 95% | 97% | •Cross-selling marketing program |
| | •Seamless cross-group delivery | •New product uptake rate | 20% | 25% | 30% | •Service dispatch automation |
| | •Understand customer drivers | •On-time market projects (**D**) | 90% | 95% | 100% | |
| | •Effective customer services | •Customer satisfaction rating C.S.D. (see above) | 85% | 89% | 95% | •CIS upgrade |
| | | •Problem resolution cycle time C.S.D. (**D**) | 6hr | 4hr | 3hr | •Call center software integration |
| | **Optimize Core Business** | | | | | |
| | •Optimize asset utilization | •% rate capacity attained | 80% | 85% | 90% | •Fossil maintenance benchmark |
| | •Max return on resource allocation | •Employee productivity improvement | 2% | 3% | 4% | •Shared service |
| | | •% cost reduction | 4% | 5% | 6% | benchmark/outsourcing initiative |
| | •Continued cost management | •Cost of disruption vs. plan | +/-15% | +/-10% | +/-5% | |
| | •Enterprise-wide risk management | •Time to recovery (**D**) | 8hr | 4hr | 2hr | •ERP Implementation |
| L&G | •Ensure market-driven skill | •Strategic skill coverage ratio | 65% | 75% | 85% | •Competency profiling |
| | •Leading employee satisfaction | •Hours in strategic skills training (**D**) | 10 | 12 | 15 | |
| | •World Class Leadership | •Employee satisfaction rating (5 point scale) | 3.0 | 4.0 | 4.5 | •Performance compensation link |
| | | •Leadership effectiveness ratio (5 point scale) | 4.0 | 4.5 | 4.5 | •Leadership training program |

# Benchmarking & Market Analysis

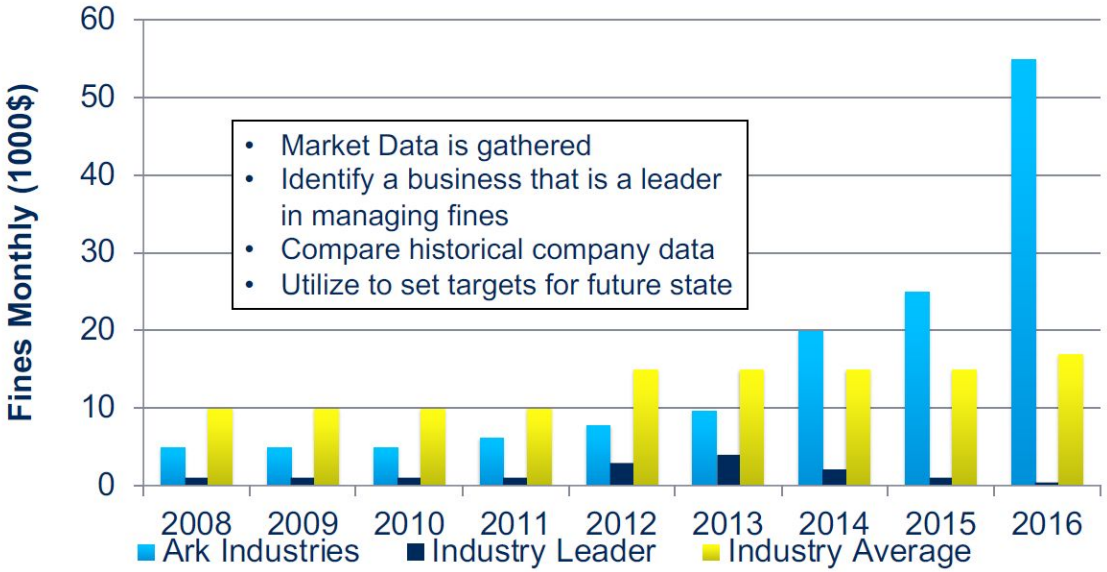
External

- To compare the strengths and weaknesses of an organization against peers and competitors
- Understand customer preferences
- Market trends and data

Internal

- To determine if there is a “Best Practice” already existing in an organization
- Determine gap between current and best practices

# Benchmarking & Market Analysis - Example




- Identifies opportunity for improvement in current state
- Used to make decisions about
  - Future state
  - Change strategy
- Externally
  - Competitors
  - Other industries
- Internal
  - Within the department
  - Different department

# Business Cases

- Determine if the organization can justify the investment required to deliver a proposed solution
- Compares the cost of the endeavour to the added value to the business
- Identifies constraints and risks associated with the recommended solution and potential project

# Business Cases (Cont'd)

## Identifying Benefits

• Qualitative benefits include: improved staff morale, customer satisfaction, etc.

• Quantitative benefits include: dollar sales increases, reduced spending, reduced waste.

## Identifying Costs

• Estimate the cost of the solution including capital outlay, development costs,opportunity costs and ongoing costs of ownership

## Risk Assessment

• Does the project pose more risk than it is worth?

• Includes technical risk (delivery), financial risk (excess costs), and organizational risk (reputational and change acceptance)

## Results Measurement

• Identifies how the costs and benefits will be captured and measured (during solution validation)

# Business Case - Example

| Project Business Case Example | | | |
|---|---|---|---|
| Project Name | Sales Team IVR Telephone System | | |
| Project Sponsor | Head of Sales | Project Manager | Name of project manager |
| Date of Project Approval | 3rd March | Last Revision Date | 3rd March |
| Contribution to Business Strategy | Our strategy is to project best in industry customer service, and the current situation does not reflect this. The new IVR system will ensure all calls are answered in a timely manner. It will also ensure that calls are delt with efficiently. These two facts align this project to the company strategy. | | |
| Options Considered | Options considered included:<br>1. Adding additional staff to sales team<br>2. Having a dedicated team for our best customers<br>3. An IVR system (selected) | | |
| Benefits | 1. Increased sales - currently extimated we lose 4% of all sales calls due to current issues.<br>2. Happier customers - we estimate new customer satisfaction will increase by 10%.<br>3. Improved LTV - lifetime value of customers will increase by 5% due to the two points above | | |
| Timescales | Initial analysis shows that the system will take approximately 3-4 months to implement. | | |
| Costs | IVR software = $35,000<br>Project Management = $30,000<br>Software team of 3 for 3 months = $90,000<br><br>Total estimated cost = $155,000 | | |
| Expected Return on Investment | Year 1 = $0<br>Year 2 = $120,000<br>Year 3 = $180,000 as LTV begins to be felt. | | |
| Risks | Right now the project looks pretty straightforward but there are still some unknows surrounding implementation. There is also the risk that the project doesn't meet the sales team or customers needs. For this reason it is recommended to involve the sales team closely. | | |

# Scope Modelling

- Represents the boundaries of the scope of
  - Solution
  - Need
  - Change
  - Analysis

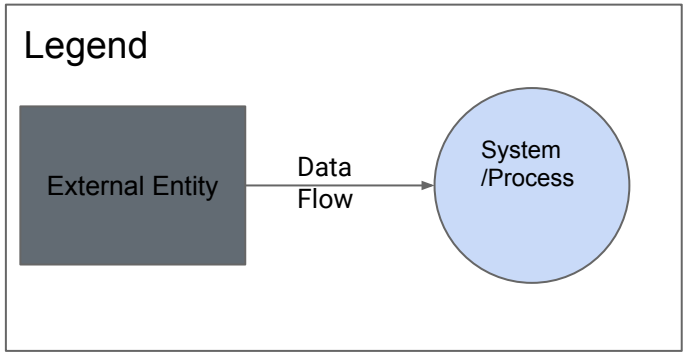
- Identifies what is included in the solution (In Scope) and what is not included(Out of Scope)

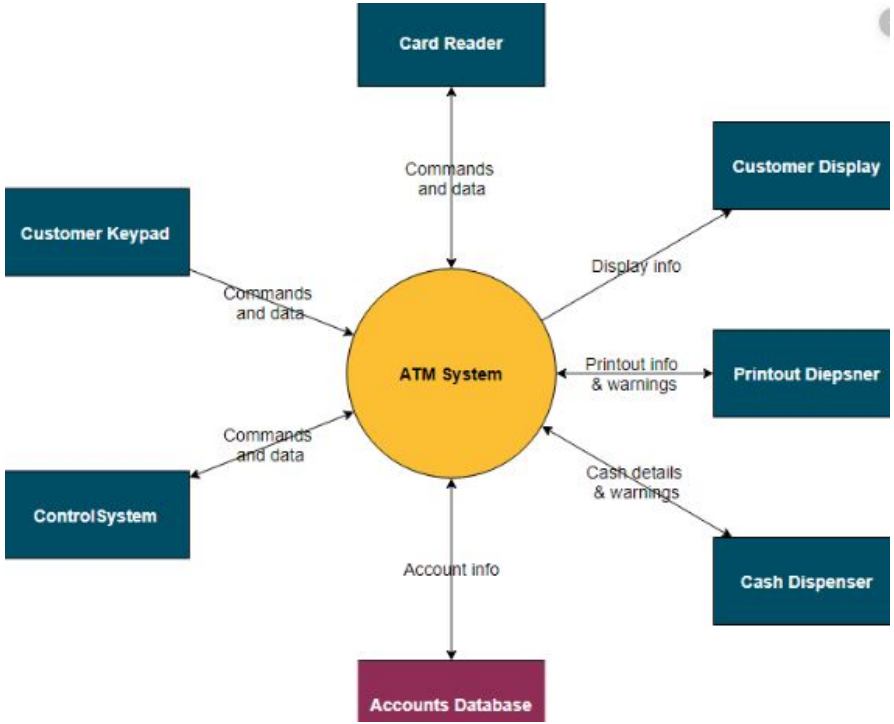
– Product and Project Scope

# Context Diagram:

A **context diagram** is a top **level** (also known as "**Level 0**") **data flow diagram**.

It only contains one process node ("Process 0") that generalizes the function of the entire system in relationship to external entities.



# Case Study 1: Library Management System

Problem Statement:

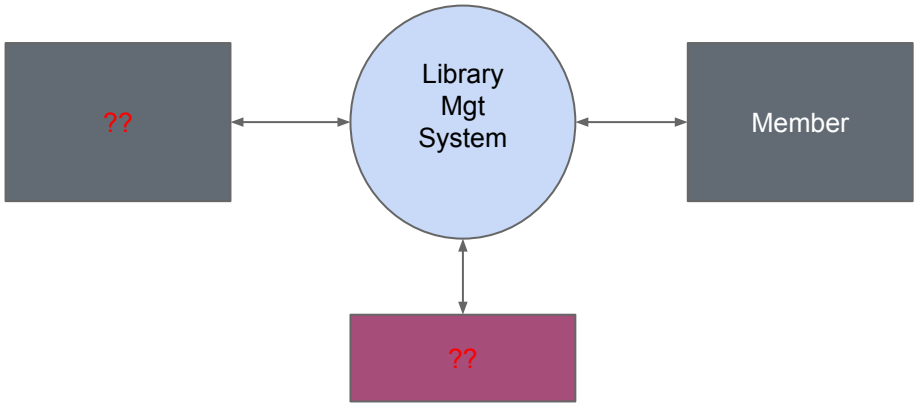
The case study Library Management System is library management software for the purpose of monitoring and controlling the transactions in a library. This case study on the library management system gives us the complete information about the library and the daily transactions done in a Library. We need to maintain the record of books and retrieve the details of books available in the library which mainly focuses on basic operations in a library like adding new member, new books, , searching books and members and facility to borrow and return books.

Key Actors :

- **Librarian:** Mainly responsible for adding and modifying books, book items, and users. The Librarian can also issue, reserve, and return book items.
- **Member:** All members can search the catalog, as well as check-out, reserve, renew, and return a book.
- **System:** Mainly responsible for sending notifications for overdue books, canceled reservations, etc.

# Context Diagram: Exercise 1

- **Member** to search / reserve books
- **Librarian** to manage check out / return books
- **Librarian** to add / delete books
- **Librarian** to manage users



# Case Study 2: Online Shopping System (Amazon)

Problem Statement:

Amazon (amazon.com) is the world's largest online retailer. The company was originally a bookseller but has expanded to sell a wide variety of consumer goods and digital media. For the sake of this problem, we will focus on their online retail business where users can sell/buy their products.

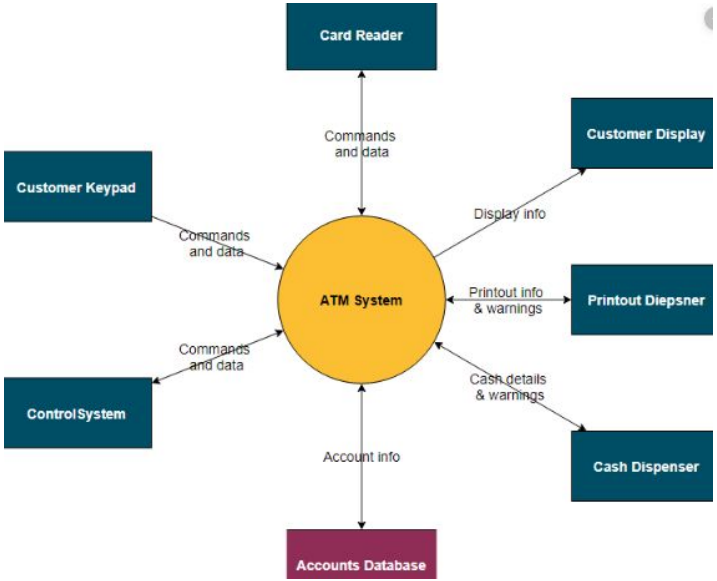
Key Actors :

- **Admin:** Mainly responsible for account management and adding or modifying new product categories.
- **Guest:** All guests can search the catalog, add/remove items to the shopping cart, as well as become registered members.
- **Member:** Members can perform all the activities that guests can, in addition to which, they can place orders and add new products to sell.
- **System:** Mainly responsible for sending notifications for orders and shipping updates.

# Context Diagram: Exercise 2

Here are the top data flow/use cases of the Online Shopping System:

1. **Admin** Add/update products; whenever a product is added or modified, we will update the catalog.
2. **Guest / Member** Search for products by their name or category.
3. **Member** Add/remove product items in the shopping cart.
4. **Member** Check-out to buy product items in the shopping cart.
5. **Member** Make a payment to place an order.
6. **Admin** Add a new product category.
7. **System** Send notifications to members with shipment updates.



# Financial Analysis

Assessment of current and potential investment options including:

- Initial costs
- Expected benefits
- Ongoing costs
- Business and project risks

**How Is It Used in Strategy Analysis?**

- Understand profitability of current state
- Estimate potential return delivered by future state
- Understand financial relationship between risk and solution
- Understand value of change strategy,comparing alternatives against targets

# Financial Analysis

- Cost Benefit Analysis
- ROI-Return on Investment

  Return on Investment = (Total Benefits – Cost of the Investment) / Cost of the Investment.

  The higher the ROI, the better the investment.
- Discount rate

  The discount rate is the assumed interest rate used in present value calculations.

  Present Value = Sum of (Net Benefits in that period / (1 + Discount Rate for that period)) for all periods in the cost-benefit analysis.
- NPV-Net present value

  Net Present Value = Present Value – Cost of Investment

  The higher the NPV, the better the investment.
- IRR-Internal rate of return

  The internal rate of return (IRR) is the interest rate at which an investment breaks even, the higher IRR would be the better investment.
- Payback period

  The **payback period** refers to the amount of time it takes to recover the cost of an investment.Shorter paybacks mean more attractive investments.

# Metrics and Key Performance Indicators (KPIs)

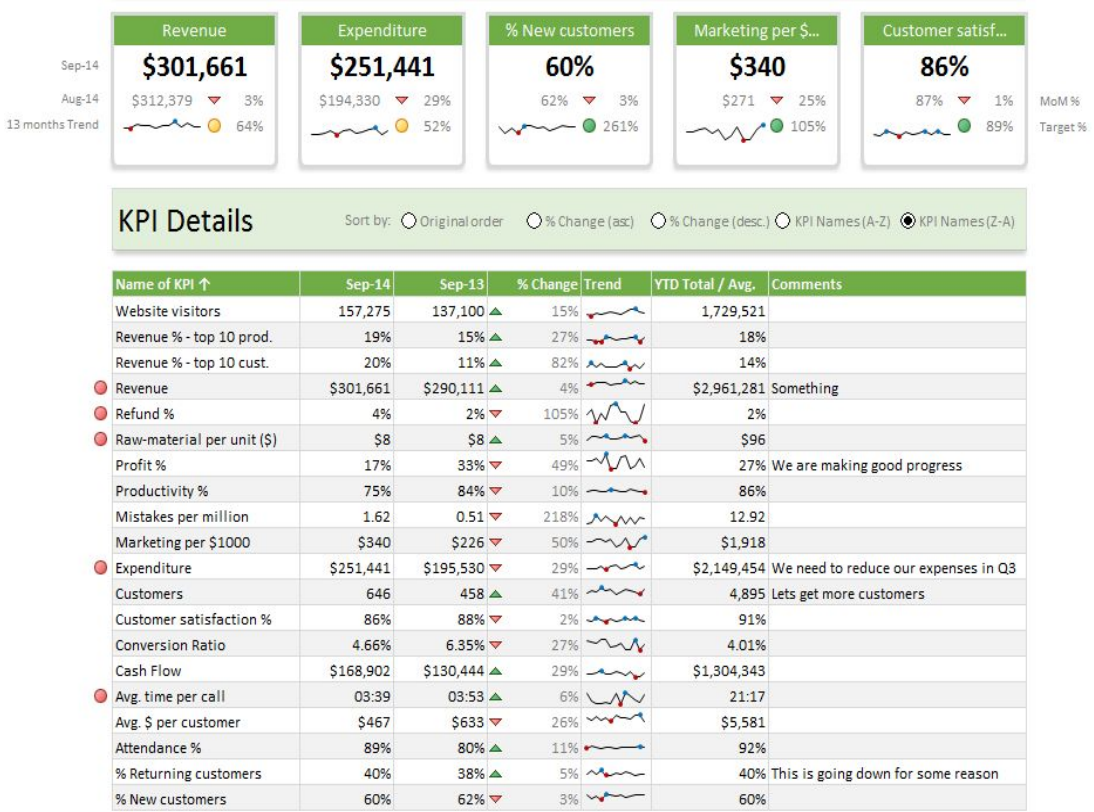
- Measure performance of
  - Solutions
  - Solution components
- Metric: standard to measure
- KPI: metric chosen to indicate performance

**Usage in Strategy Analysis?**

- Assess current state performance
- Track performance to business objectives
- Confirm future state has been achieved

# KPI: Example

| Business Function | KPI |
|---|---|
| Marketing/Sales | Market share, Sales/employee |
| Supply Chain Management | Inventory turns, Procurement cost index |
| Manufacturing | Cycle time, Defect rates |



# SWOT Analysis

- Valuable tool to quickly analyze various aspects of the current state of the business process undergoing change
- **Strengths** and **Weakness** relate to the **Internal** aspects of the business (Products, Skills)
- **Opportunities** and **Threats** relate to the **External** aspects of the business (Markets, Gov’t, Competitors)

# SWOT Analysis – Internal Environment

**Strengths**

- Capabilities, knowledge, experience
- Innovations
- Systems
- Management
- Certifications
- Locations, distribution
- Assets
- People
- Price
- Value

**Weaknesses**

- Capability gaps
- Financials
- Reputation
- Robustness of processes and systems
- Morale and staff turnover
- Management succession

# SWOT Analysis – External Environment

## Opportunities

- Competitor vulnerabilities
- Technological advances
- Innovations
- Material dominance
- Major contracts
- Research
- Partnerships
- Economies of scale

## Threats

- Political issues
- Regulatory changes
- Environmental issues
- Competitor intentions
- Technological obstacles
- Weaknesses that cannot be overcome
- Key staff turnover
- Financial shortages
- Economic downturn

# SWOT Analysis - Exercise

| | SWOT |
|---|---|
| Micromanaging managers | |
| Loss of key staff | |
| Excellent HR Department | |
| Out-dated Processes | |
| Client may source another vendor (lose business) | |
| Great Employees Benefits | |
| Potential New Competitors | |
| Introduce new product line | |
| Great marketing Team Strength | |
| Government legislation changes | |
| New Technology available | |
| Improved Economics | |

# SWOT Analysis –How Is It Used in Strategy Analysis?

- Evaluate strengths, weaknesses, opportunity and threats
  - –Current state
  - –May be exploited or mitigated by future state
- Utilized as a decision criteria to select a change strategy

# 3 BA TECHNIQUES I: Elicitation & Collaboration Techniques

- Utilizes variety of elicitation activities
- Gathers requirements by executing against the **elicitation plan** as well as **informal** as-needed sessions
- Conduct **iterative activities** as needs evolve
- **Communicate** BA information
- **Engage Stakeholders** in BA process

- Document Analysis 269
- **Stakeholder List, Map, or Personas 344**
- Brainstorming 227
- Interface Analysis 287
- Collaborative Games 243
- Business Rules Analysis 240
- Focus Groups 279
- **Interviews 290**
- **Observation 305**

# Document Analysis

**Study available documentation such as:**

- Marketing studies
- Industry standards
- **Existing solution information**

**– Business Rules**

**– Previous requirements documentation**

– Others?

**In order to:**

- Elicit requirements
- Detail context of a business need
- Validate findings
- Address information gaps

# Document Analysis - how is it used in E & C?

- Identify and assess potential sources of supporting material for elicitation
- Review **existing systems, and historical documentation**
- Confirm elicitation results by reviewing source information
- Creates **trust** with stakeholders
- **Optimizes face time** with stakeholders

# Stakeholder List, Map, or Personas

Analyze stakeholders and the characteristics of:

- **Stakeholder lists**
- Stakeholder map
- **RACI Matrix**
- Personas

# Stakeholder List, Map, or Personas - How Is It Used in E & C?

- Determine which stakeholders will be consulted during elicitation preparations
- Determine **participation list and roles** for elicitation activities
- Determine availability for BA work

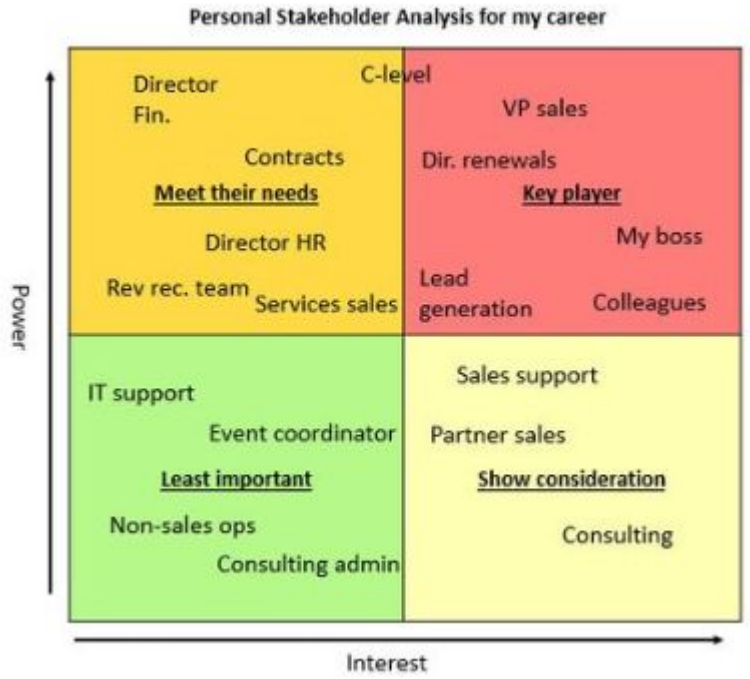
– Participating in creation of BA deliverables

– Consulted before decisions are made

– Informed after decisions are made

# Stakeholder List , Map example

| Name | Title | Role | External Agent | Sign-off Authority | Notes |
|---|---|---|---|---|---|
| **John Smith** | VP of Marketing | Executive Sponsor | No | Yes | Wants big picture, bullet points |
| **Jane Brown** | Project Manager | Project Manager | | | Prefers daily updates |
| **Marcia Karmak** | Sr. Business Systems Analyst | Business Analyst | No | No | |
| **Jim House** | Marketing Administrator | SME, Marketing | No | No | Will validate/review and advise the executive sponsor on the requirements |
| **Dave Stringent** | QA Analyst | Quality Assurance | No | Yes | |
| **Outside Advertising Agency** | Ad execs | SMEs, content creation | Yes | No | |
| **Bob Smith** | Sr. DBA | Database Admin | No | Yes | Knows system interfaces and data feeds inside and out |



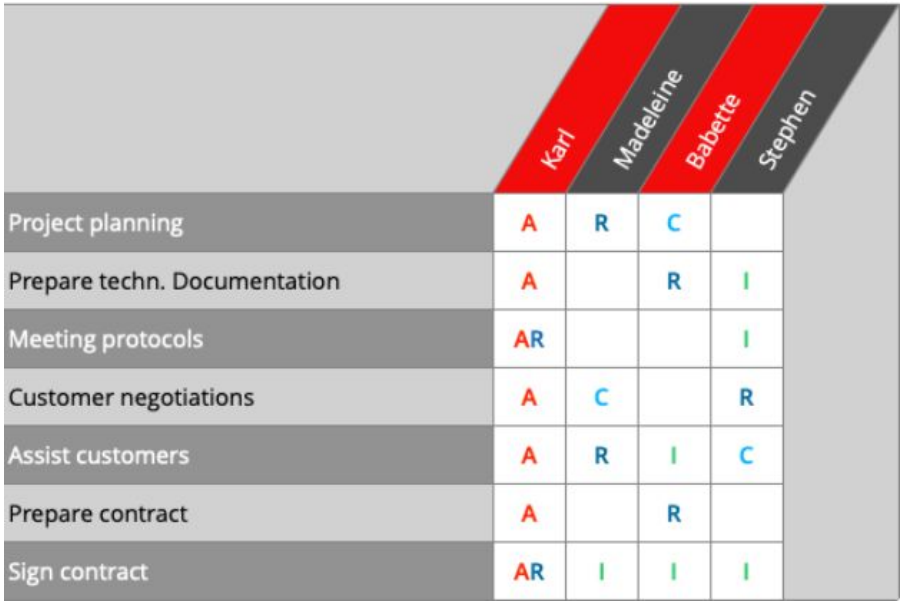
# RACI Matrix

• **Responsible (R)**: the persons who will be **performing the work** on the task.

• **Accountable (A):** the person who is **ultimately held accountable** for successful completion of the task and is the decision maker. **Only one stakeholder** receives this assignment.

• **Consulted (C):** the stakeholder or stakeholder group who will be asked to **provide an opinion or information** about the task. This assignment is often provided to the subject matter experts (SMEs).

• **Informed (I):** a stakeholder or stakeholder group that is kept up to date on the task and **notified** of its outcome. Informed is different from Consulted as with Informed the communication is one-direction (business analyst to stakeholder) and with Consulted the communication is two-way.



| | Karl | Madeleine | Babette | Stephen |
|---|---|---|---|---|
| Project planning | A | R | C | |
| Prepare techn. Documentation | A | | R | I |
| Meeting protocols | AR | | | I |
| Customer negotiations | A | C | | R |
| Assist customers | A | R | I | C |
| Prepare contract | A | | R | |
| Sign contract | AR | I | I | I |

# Personas

A persona is defined as a fictional character or archetype that exemplifies the way a **typical user** interacts with a product

## Customer Persona

"I'm looking for a website that I can book travel and accommodation together at the last minute"

### Bio

Jim is a train driver in London and loves to travel. Due to working part-time he often goes away and explores new places in Europe. He always leaves booking his travel and accommodation to the last minute.

**Age:** 55
**Family:** Married and 1 child
**Profession:** Train driver
**Location:** London

### Frustrations

- Expensive last minute travel and accommodation
- Has to look at multiple sites to find the best deal
- Struggles to book both travel and accommodation on the same website

### Goals

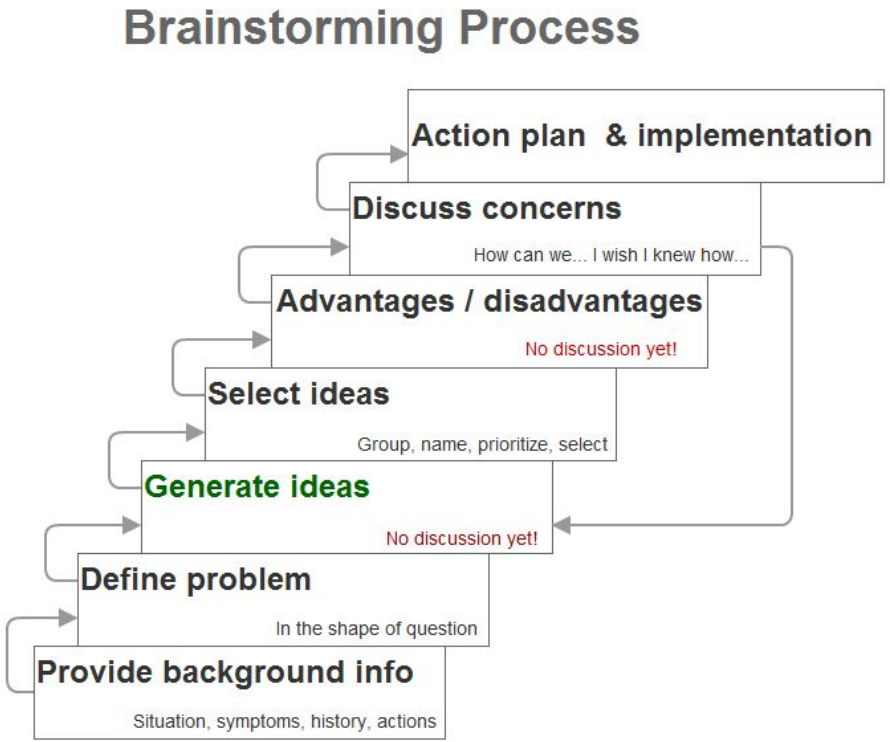
- Find affordable travel and accommodation
- Find travel and accommodation at short notice
- Spend as little time on booking as possible

# Brainstorming


- Idea generation
- Run by a facilitator

## How Is It Used in E & C?

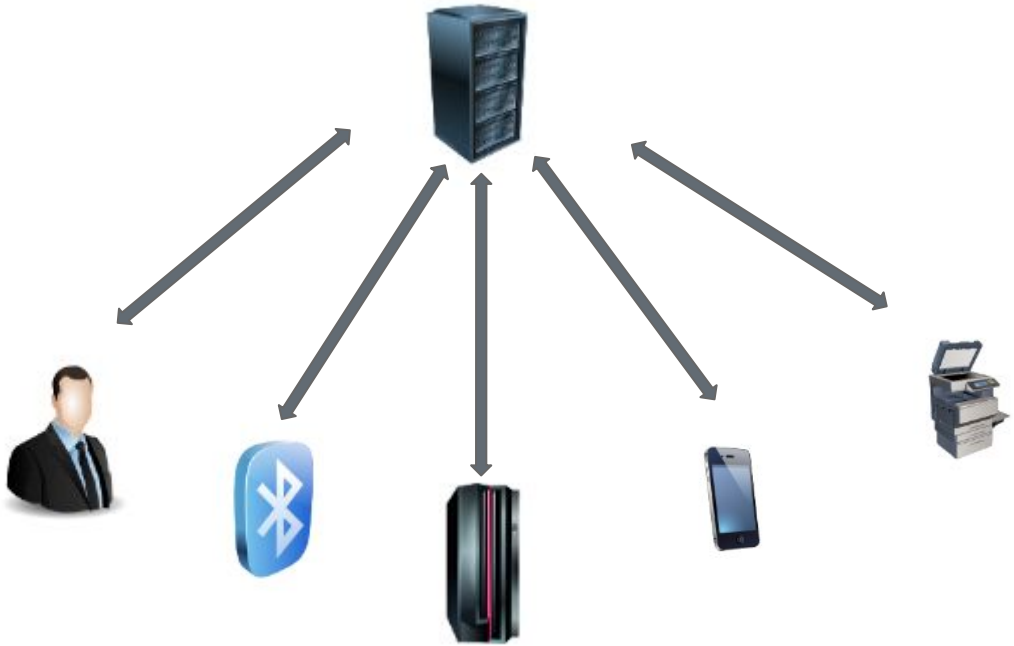
- Identify sources of BA information
- Identify elicitation techniques
- Generate many ideas, organize and prioritize for purposes of elicitation
  - Brainstorm interview questions
  - Brainstorm survey questions



# Interface Analysis

Identify interfaces between solutions and/or solution components and define requirements that describe how they will interact

Interface types include:
- **user interfaces**, including human users directly interacting with the solution within the organization,
- people external to the solution such as stakeholders or regulators,
- **business processes**,
- **data interfaces** between systems,
- **application programming interfaces (APIs)**, and
- any **hardware devices**.



# Business Rules Analysis

Define, clarify , explore the **rules that govern decisions** in an organization that define, constrain or enable organizational operations

Examples:
• Policies must be paid up-to-date to pay out claims
• An insurance policy must have at least one beneficiary
• A customer may belong to many buying groups

**How Is It Used in E & C?**
• Capture business rules from sources
• Express them clearly
• Validate & Refine
• Sources
– Documented business policies, regulations, or contracts
– Undocumented stakeholder know-how, generally accepted business practices

# Focus Groups

• **Elicit ideas and attitudes** about a specific product,service or opportunity
• **Pre-qualified participants** share needs and opinions in an interactive group
• Moderated by a BA, or moderator works with business analyst to analyze results
• Not typically used to elicit information about a problem

Difference between Brainstorming and Focus Group
https://www.modernanalyst.com/Community/CommunityBlog/tabid/182/ID/1904/Difference-between-a-Brainstorm-and-Focus-Group.aspx

**How Is It Used in E & C?**
• Identify and understand ideas and attitudes from a group
• Business Analyst may
– Moderate the session
– Selecting the stakeholders including subject matter experts
– Analyze results

# Interviews

- **Elicit information** from a person or a small group
- Can be formal or informal
- Can be structured or unstructured
- Opportunity to build trust with stakeholders
- **Most common** BA elicitation technique

**How Is It Used in E & C?**

- Identify concerns related to planned elicitation activities
- Ask questions to uncover needs, opportunities and problems
- Confirm and communicate BA information

# Interviews - keys to success

## Prepare

- Document Analysis
- Questions
- Objectives

## Conduct

- Communicate objectives
- Listen (actively)
- Document
- Seek clarification
- Time keeping
- Schedule follow–up time
- Thank interviewee

## Follow up

- Provide a copy of notes to interviewee
- Confirm information gathered in interview

# Observation

• Conducting an **assessment** of the stakeholder's current work environment.
• Appropriate if the project in intended to **enhance or change a current process**.
• Watching someone doing their work can be disconcerting to the person being observed

  • Pick a **timeframe that is representative** of the typical work activities (may require multiple visits)

  •Make sure that the person's manager advises the person of the **reason for the observation** in advance and advises others in the area as to that reason (Avoid unnecessary rumours)

  •Follow the same rules as the Interview format

**How Is It Used in E & C?**

Used to gain insight into how work is executed in the **current state** to analyze

• Business processes
• Performance standards
• Existing solution performance
• Training and development

# 4 BA TECHNIQUES I:
## Requirements Analysis & Design definition (RADD) Techniques

- Review the requirements and designs to ensure that they are complete, comprehensive, and add value
- Ensure that any **conflicting requirements** are resolved between the stakeholders
- Define and assess solution options and alternatives

- Decision Modelling 265
- **Process Modelling 318**
- Functional Decomposition 283
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- Glossary 286
- Prototyping 323
- **Sequence Diagrams 341**
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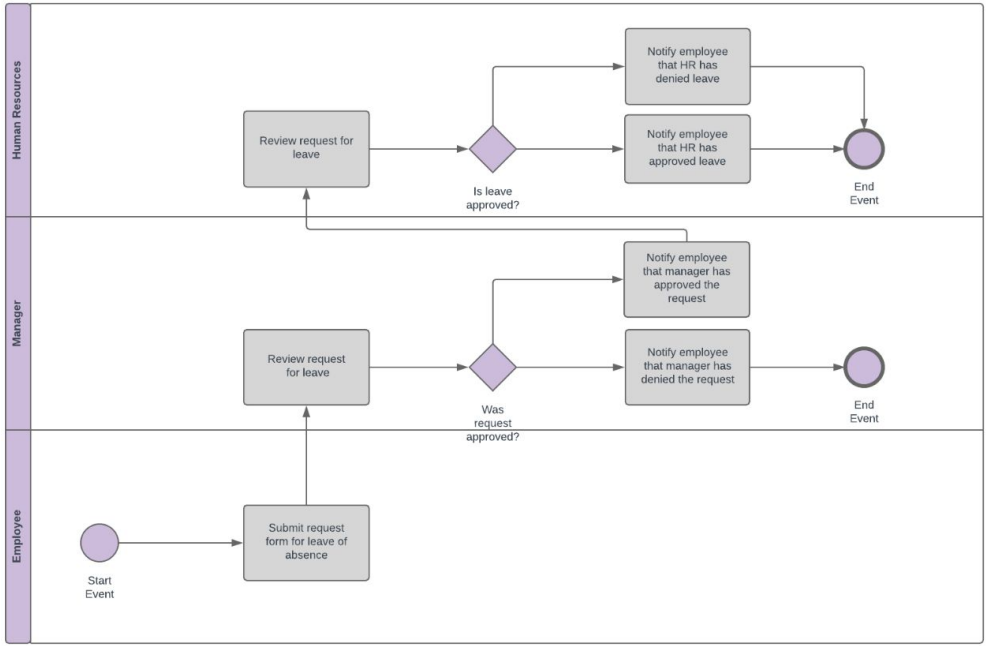
- **User Stories 359**

# Process Modelling

- Understand how work that involves multiple roles and departments is performed
- Communicate the way the process works and make all stakeholders aware of the process details
- Demonstrate how to handle a large number of scenarios and parallel branches
- Used for training and orientation

**How Is It Used in RADD?**

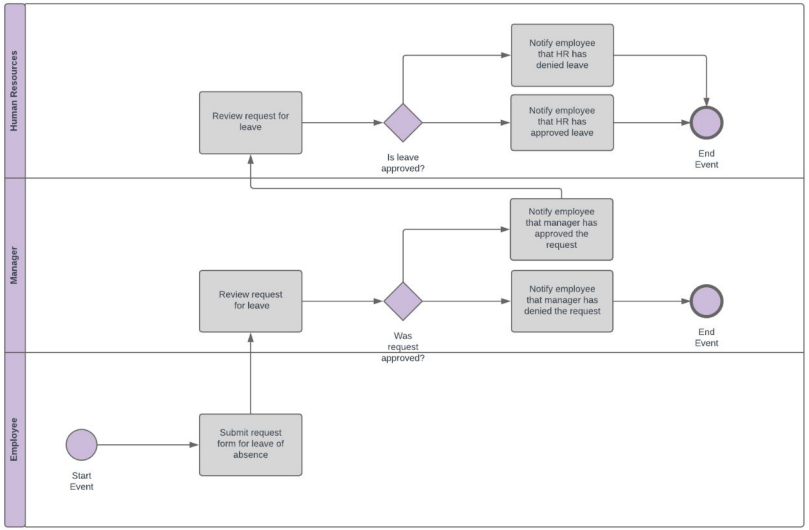
Shows steps or activities performed in current state and/or future state



# Process Modelling: Exercise 1

Do this exercise in a group : Draw a Process model (swimming lanes) based on the following processes

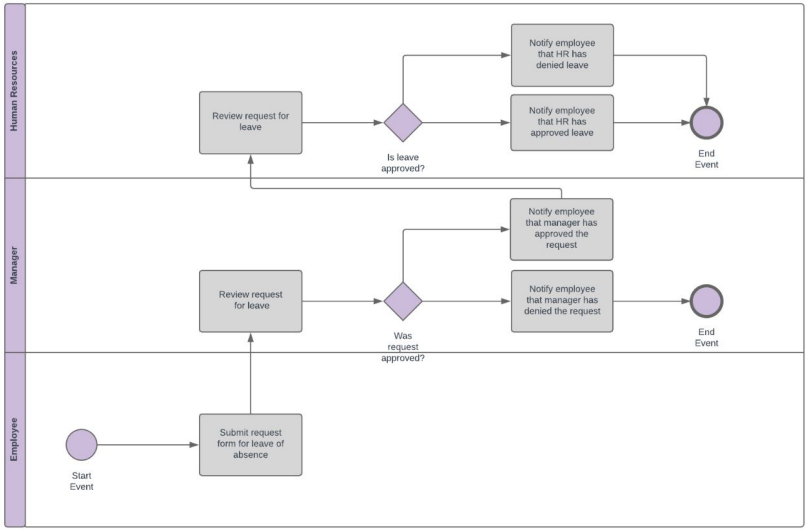
1. Member Login and Authentication
2. Member Search book operation
3. Member reserve books
4. Status of the books updated in the Books Database
5. Librarian to check out the book.



# Process Modelling: Exercise 2

Do this exercise in a group : Draw a Process model (swimming lanes) based on the following processes

1. Member Login and authentication
2. Member Search for products by their name or category.
3. Member Add/remove product items in the shopping cart.
4. Member Check-out to buy product items in the shopping cart.
5. Member Make a payment to place an order.
6. System send a confirmation of the order.

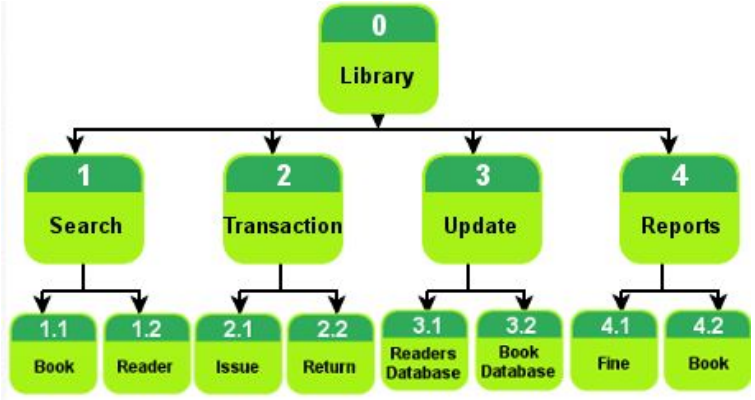


# Functional Decomposition

• Decompose processes, functional areas, or deliverables into their component parts in order to analyze independently
• Provide stakeholders with a consistent view of scope of the effort

Types:
• Tree Diagrams
• Nested Diagrams
• Use Case Diagrams
• Flow Diagrams
• Cause-Effect Diagrams
• Decision Trees
• Mind Maps

**How Is It Used in RADD?**
• Identify parts of a complex business function
• Break down an organizational unit, product scope, or other elements



# Data Dictionary

- Standardize a definition of a data element
- Records details about data involved in the change

| Field Name | Data Type | Data Format | Field Size | Description | Example |
|---|---|---|---|---|---|
| License ID | Integer | NNNNNN | 6 | Unique number ID for all drivers | 12345 |
| Surname | Text | | 20 | Surname for Driver | Jones |
| First Name | Text | | 20 | First Name for Driver | Arnold |
| Address | Text | | 50 | First Name for Driver | 11 Rocky st Como 2233 |
| Phone No. | Text | | 10 | License holders contact number | 0400111222 |
| D.O.B | Date / Time | DD/MM/YYYY | 10 | Drivers Date of Birth | 08/05/1956 |

# Glossary

- Definitions of business terms and acronyms used when analyzing requirements
- Documents terms and acronyms unique to the study area
- Accessible in read-only format to all stakeholders
- Edited by designated stakeholders

| Term | Definition |
|---|---|
| BRD | Business requirement document |
| EA | Enterprise Architecture |
| Extranet Partner | A stakeholder with a higher level of trust based on contractual agreements (e.g. business partners, Health Authorities). |
| GNL | Government of Newfoundland and Labrador |
| IM | Information Management |
| OCG | Office of the Comptroller General |
| RFP | Request for proposal |
| SDLC | System development lifecycle |
| SME | Subject matter expert |
| TRA | Threat risk assessment |
| TRD | Technical requirements document |
| | |
| | |

# Prototyping

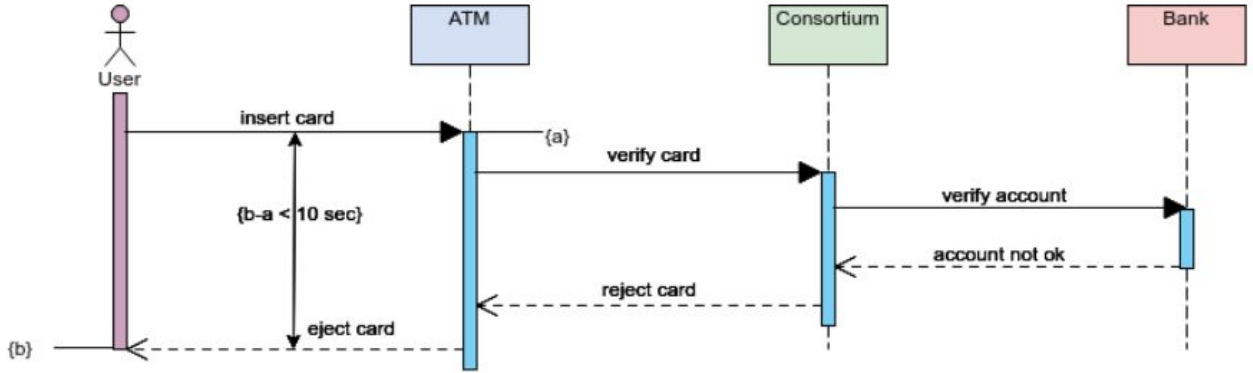
Visualize the appearance and capabilities of a planned solution

- Storyboards
- Wireframes
- Screen and report mockups
- Engineering drawings
- Floor Plans
- Sketches

# Sequence Diagrams

- Model the logic of usage scenarios
- Shows
  - Information passed between objects in the system
  - Actor interaction with system
  - Sequence of interactions as messages during activity flow

Demonstrates how processes operate and interact with one another, and in what order.

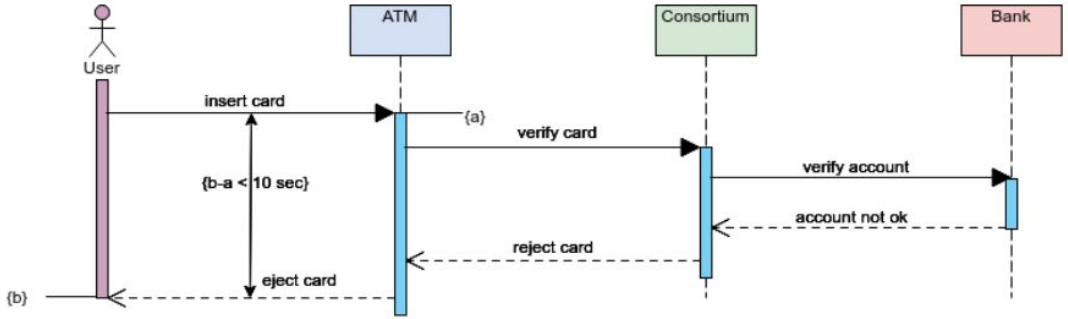


# Sequence Diagrams: exercise

Do this exercise in a group : Draw a Sequence Diagram based on the following processes

1. Member Login and Authentication
2. Member Search book operation for Reader
3. Acknowledge and reserve books to the users
4. Status of the books updated in the Books Database
5. Logout

compare against the
process model/mapping we did earlier
and see what is the difference?



# State Modelling

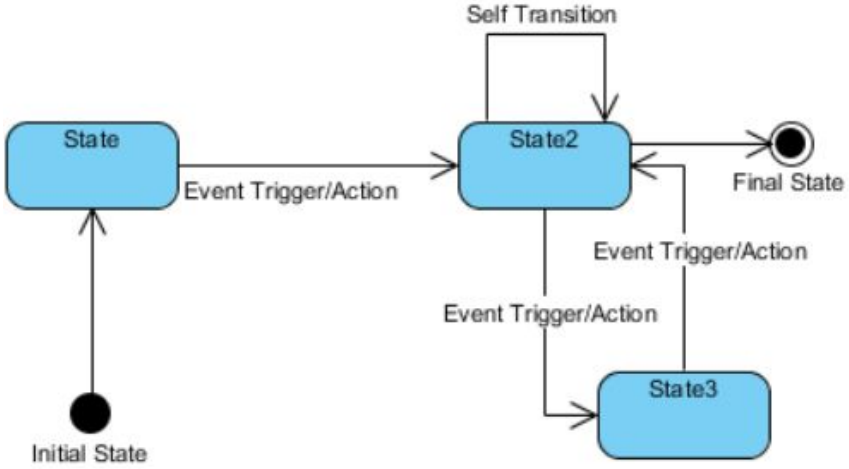
**Demonstrates how the behavior of a concept, entity, or object changes in response to events.**

- **State Table**
  - Two dimensional matrix
  - Used in conjunction or in place of State Diagram
- **State Diagram**
  - Models object states and transitions
  - Describe the behavior of system
  - Describes the possible states of an object as events occur

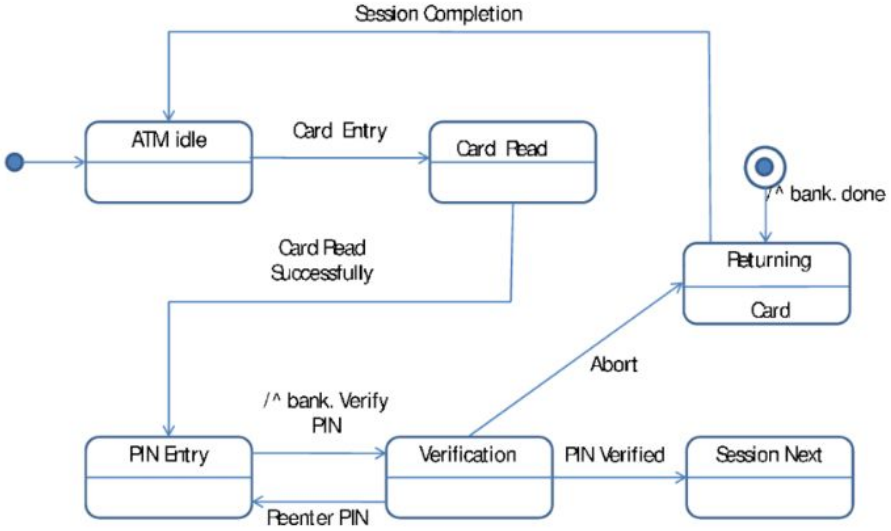
Shows how the product or service evolves throughout its life cycle, in terms of the activities performed by the organization and external entities

| | Event 1 (Insert card) | Event 2 (Enter Pin) | Event 3 (Pin OK) | Event 4 (Pin not OK) |
|---|---|---|---|---|
| S1:Start | S2 | - | - | - |
| S2:Wait for Pin | - | S3 | - | - |
| S3: 1st try | - | - | S6 | S4 |
| S4: 2nd Try | - | - | S6 | S5 |
| S5: 3rd Try | - | - | S6 | S7 |
| S6: access to account | - | - | - | - |
| S7: eat card | S1 | - | - | - |

# State Modelling




State Diagram ATM



# User Stories

• Brief description of functionality that users need from a solution to meet a business objective.
• System requirement formulated as one or two sentences in the everyday or business language of the user.
• Can serve the same purpose as use cases

User Stories can be a basis for:
• Estimating and prioritizing development time
• Generating user acceptance test
• Measuring the delivery of value
• Tracing related requirements,
• Project management reporting

Used to specify requirements by having a brief statement about what a user does or needs to do when using a solution

**Formats**

• "As a <who>, I need to <what>, so that <why>."
• "Given...When...Then" is another common format.

**Example**

• As a <homeowner>, I want to <read reviews written by members of our site> so that I can <decide who to hire to do some work on my house>

# User Stories : Practice

User the following format to construct user stories for the various library users.
• "As a <who>, I need to <what>, so that <why>."

**Librarian**
•Issue a book
•Update and maintain records
•Request the vendor for a book
•Track complaints
•Add / Update / Delete users

**Member**
•Register
•Login
•Search a book
•Request for reservation
•View history
•Request to the Librarian
•Unregister

# Any Questions?

# Thank You!