BAM 285 REVIEWER

Module 10: Process Analysis and Design

1. What is Process Analysis and Design?

- Process Analysis – technique used to understand a company's business process by identifying the value chain, wastes, bottlenecks, and problems.
- Process Design – creating or improving a process to make it more efficient, effective, and realistic.

Example: Analyzing your school's enrollment process, identifying delays, and then redesigning it to be faster and more organized.

2. Steps of Process Analysis

1. Draw the flow of the process – create a map of steps.
2. Analyze each step – identify problems (e.g., delays, bottlenecks, wasted time).
3. Document results & solutions – e.g., save time, optimize workloads, reduce errors.
4. Redesign the process – remove wastes and make it more efficient**.**

3. Uses of Process Analysis

- Improve and implement projects.
- Make critical changes by introducing new systems.
- Redesign business processes.
- Build a foundation for a successful business.

4. Advantages & Disadvantages

Advantages:

Creates a detailed picture of processes.
Helps redesign and improve processes.
Aids in implementing new systems.
Supports business growth and success.

Disadvantages:

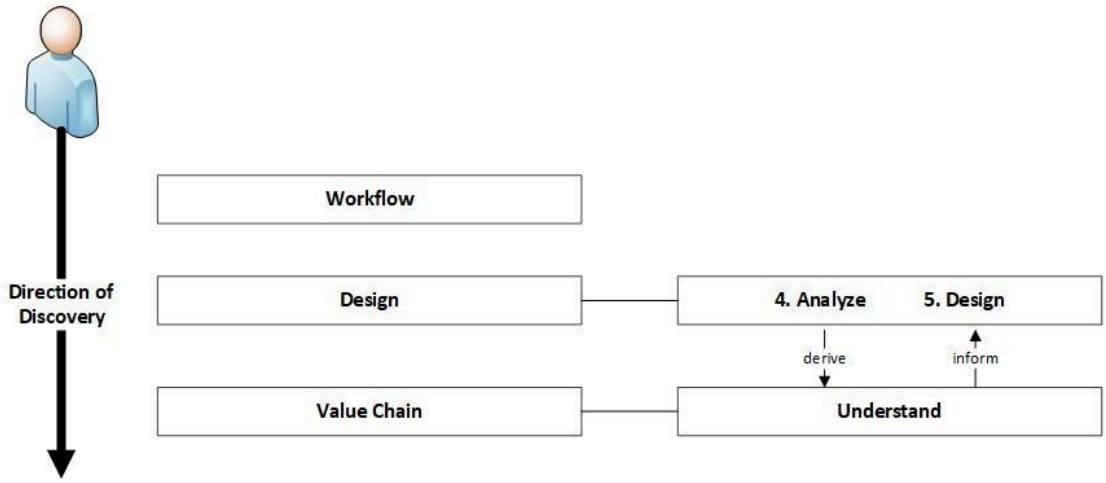
Takes a lot of time compared to benefits.

Needs close monitoring to ensure real improvements.

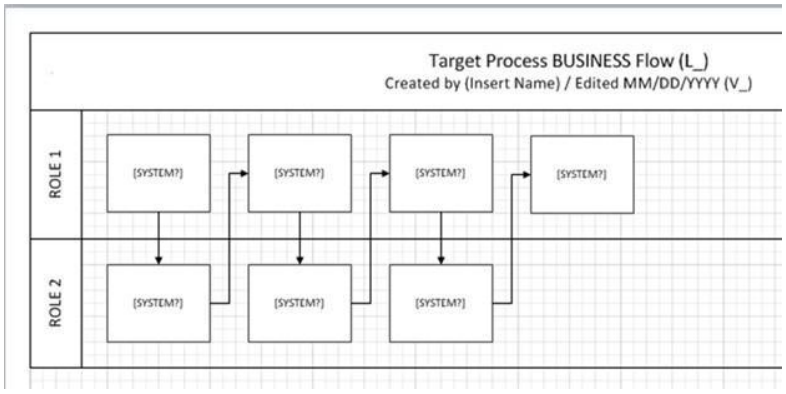
5. Value Chain

- A series of steps where value is added (e.g., sourcing raw materials, manufacturing, marketing, delivering product).
- Goal: Identify which steps add value and which create waste.

  The interconnection of process analysis and design in understanding the value-chain



Example: Use the process map given below.



Look for waste and inefficiency in the business process design represented by the process map

Analyzing the Process

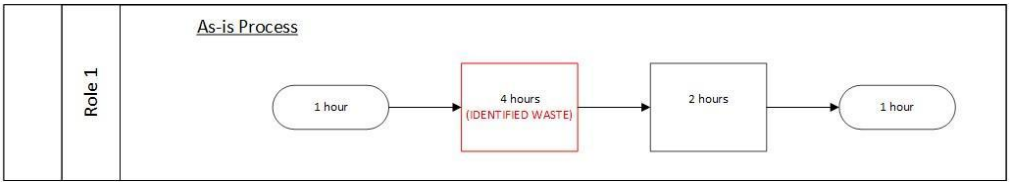
Is this the most effective flow? Are there obstacles in the flow that may be causing waste. Can it still be improved?

Your goal is to derive the value chain of the process and identify the waste existing in the process. When you derived the value chain from the process design, you can clearly see which steps add value.

Designing a better Process

Using what you learned in the process analysis, you can design a new process without wastes.

The existing process indicates an extra hours spent that can be considered unnecessary.



You can redesign the process in order to take out this wasted time.

6. Considerations in Process Analysis & Design

1. **Constraints (Limits)**

- These are boundaries in the design. It limits what you can do with the design.

- **Physical**: The design must consider the nature of things involved in the tasks.
- **People**: The design must have capable employees to perform the tasks.
- **Policy**: The design must adhere to the company's policies involved in the tasks. - **Project**: The design must consider the cost, schedule and scope of the project.

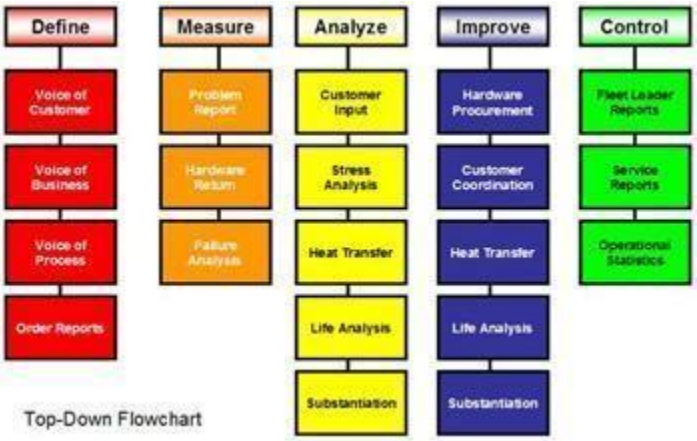
2. **Design Principles**

- Process Transparency – ensure everyone involved understands the process.
- **How?** Improve the communication, access to data, reports, data visualization
- Process Continuity **–** remove obstacles and waste to keep workflow smooth.

- **How?** Avoid creating waste/obstacles, make the flow in higher volume to reduce the cost of resources (people or technology), design the process on work functions

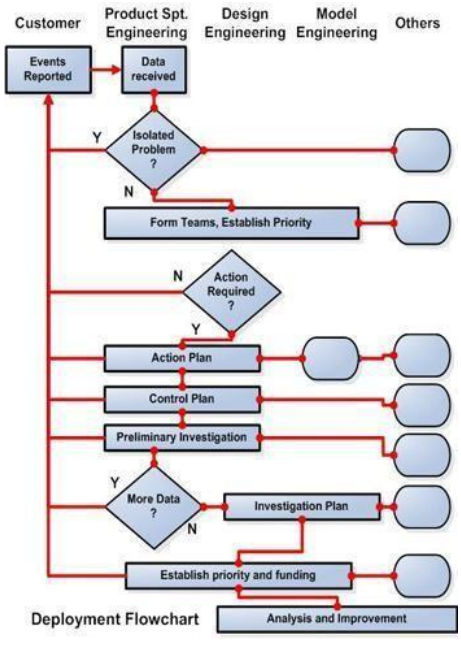
7. Process Analysis Techniques

1. **Flowchart – graphical representation of a process.**
   - **Top-down Flowchart** - It is a basic flowchart with no more than 5 steps.



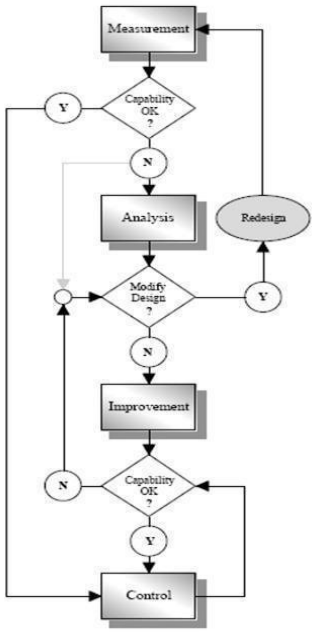
Top-Down Flowchart

   - **Deployment Flowchart** - It show “what” and “who” in the flowchart.

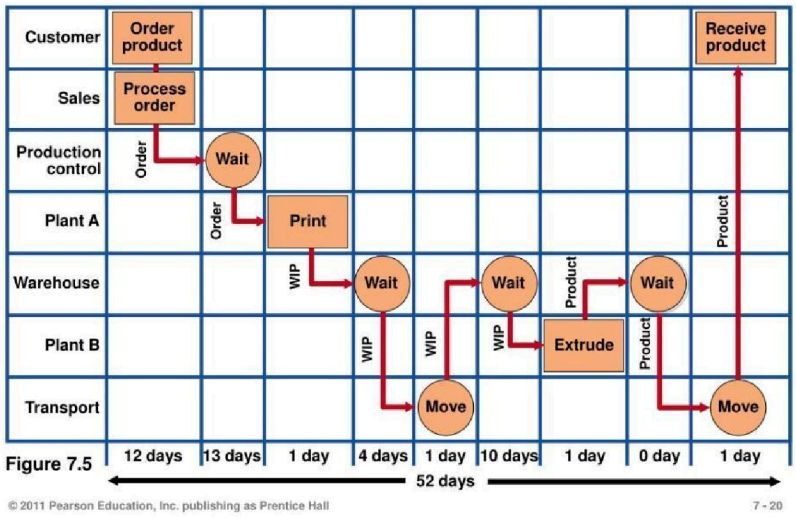


Deployment Flowchart

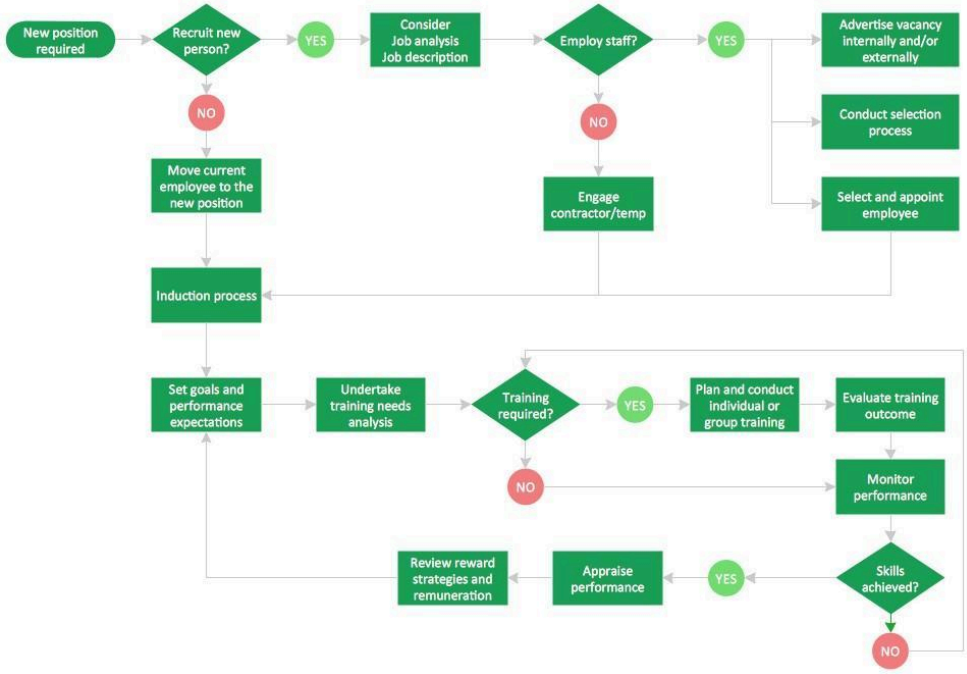
- **Detailed Flowchart** - It shows details of every step



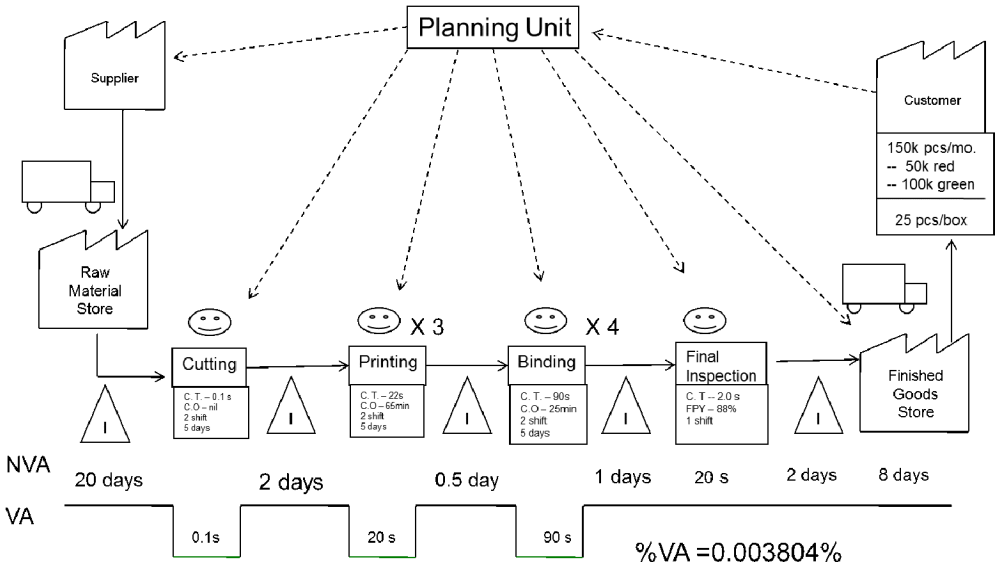
- **Time Function Mapping** - A flowchart that shows responsible parties on the vertical axis. (deployment flowchart) and a time line on the horizontal axis.



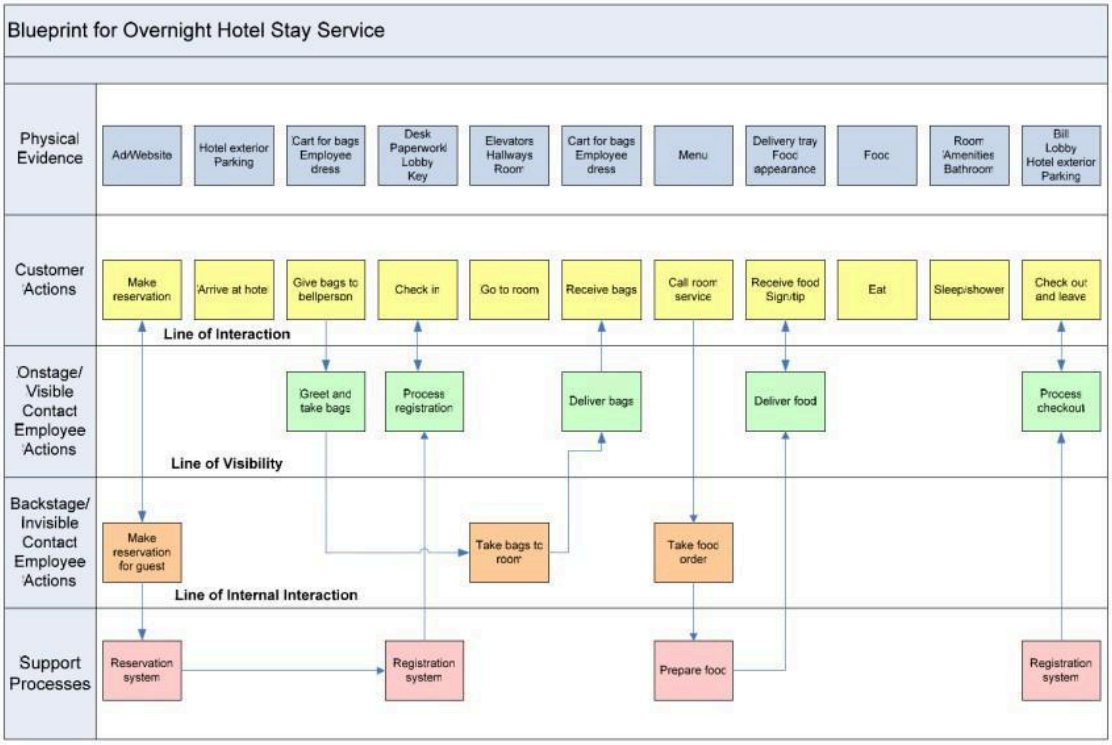
- **Process Chart** - It shows detailed level of activity at a specific work station or workplace.



- **Value Stream Mapping** - It all the steps – both value added and non value added – required to take a product or service from its raw materials state and deliver it to a customer.



- **Service Blueprinting** - It visualizes the service development process in its early stages.

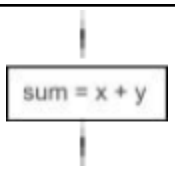
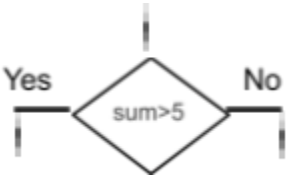
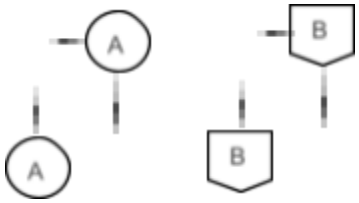
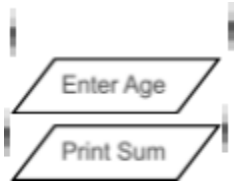
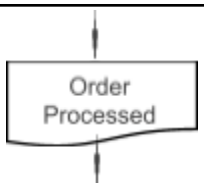
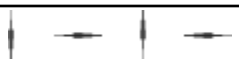


12. When to Use Different Techniques?

- Flowchart - when you need to visualize a step-by-step process.
- Time Function Mapping - when analyzing delays and responsibilities.
- Process Chart - when studying detailed workstation activities.
- Value Stream Mapping - when analyzing both value-added & non-value-added steps.
- Service Blueprinting - when improving customer service and separating visible vs. hidden tasks.

Flowchart Symbols

Terminator - It indicates the **start** or **end** of the process. - It has only 1 outgoing line	

Process - It indicate an actions or operation or calculation. - It has 1 incoming line and 1 outgoing line	
Decision - It shows branching (Yes/No) in the flow. - It has 1 incoming line and 2 outgoing line	
Connector - It is used to connect or jump from one point in the process flow to another. - Connectors are usually labeled with capital letters (A, B, AA) to show matching jump points.	**Same Page Different Page** 
Data - It indicates data input or output (I/O) for a process.	
Document - It indicates a document or report.	
Flow Line (Arrow line) - It show the direction of the flow of the process.	

M11: <u>Business Process Automation (BPA)</u>

Business Process Automation means that technology is used to **automate manual, repetitive tasks** so that employees can focus on a more critical tasks.

- Benefits:
  Minimizes costs

Increases efficiency
Streamlines processes (from simple to complex)

2. Why Do We Automate Business Processes?

1. **Stepping-stone to Digital Transformation** – adopting digital culture in a company.
2. **Get More Clarity About the Process** – Automating business processes requires clarity about the process.
3. **Streamline Processes** – ensures accountability, useful notifications, insights, and faster turnaround.
4. **Get Compliance Records** – all details are recorded for audits.
5. **Standardize Operations** – consistent results every time; increases customer trust.
6. **Increase Customer Satisfaction** – exceeding customer expectations through process excellence.

3. Factors That Indicate the Need for Automation

- High volume of tasks
- Multiple people required to execute tasks
- Time-sensitive nature
- Significant impact on other processes/systems
- Need for compliance and audit trails

4. Commonly Automated Processes

- E-mail & push notifications
- Help-desk support
- Customer case studies
- Data aggregation & migration
- Backup & restoration
- Employee leave requests
- Procurement
- Call center processes
- Sales orders
- Time & attendance tracking
- Payroll, Invoicing, Collections
- Product launches, Lead nurturing

5. BPA in Industries

- BPA **reduces or removes human intervention** - faster, simpler, more accurate workflows.
- **Trends:** Robotics and automation in business management - leading to digital transformation.
- **Fields where automation is applied:** Sales, marketing, governance, production, manufacturing, education, healthcare.

Automation helps small business owners in the following:

- Reduce human error

- Maintain compliance
- Monitor errors
- Eliminate inefficiencies
- Improve decision-making
- Simplify and standardize complex functions
- Improve the experience of the customer
- Improve communications with the vendor
- Improve accountability to stakeholders
- Accountability to stakeholders

7. BPA Market Segments

- **By Product** - PLC (Programmable Logic Controller): quick, flexible, low power, reliable.
- **By Application** - RPA, AI, ML, biometrics, blockchain (especially in banking & finance).
    - Used in risk analysis, compliance, loans, credit, fraud detection, customer service.
    - Enhances accounts, collections, receivables, underwritings.
- **By Deployment** - Cloud solutions (efficient, cost-effective, agile).

8. Real-Life Examples of BPA

1. **HR Onboarding (Texas A&M University)** – eliminated inefficiencies, automated onboarding process.
2. **Accounts Payable (City of Boca Raton)** – reduced paperwork, faster vendor communication, fewer errors.
3. **Contact Management** – centralized data for easier collaboration, review, and back-office operations.

9. Steps in Automating a Business Process

1. Define automation goals
2. Identify the target process
3. Establish process boundaries
4. Map the current process
5. Identify automation opportunities
6. Build an automation wishlist
7. Assess tools and capabilities
8. Configure the automation

10. Risks Without Automation

- Endless paperwork
- Missed tasks
- Employee dissatisfaction
- Low productivity

11. Best Practices in BPA

- Understand tasks, responsibilities, and timing
- Define clear goals
- Measure results
- Train employees properly
- Adopt a long-term perspective (ROI focus)
- Use ready-made solutions when available

12. Types of BPA

1. **Task Automation** – eliminates manual tasks (e.g., sending emails, generating reports).
2. **Workflow Automation** – defines series of tasks & decisions (e.g., reviewing contracts).
3. **Process Automation** – automates end-to-end processes.
4. **Robotic Process Automation (RPA)** – uses software bots for structured, repetitive tasks.
5. **Intelligent Automation** – combines automation + AI + data analysis for decision-making.

M12: Business Transformation

1. Business Transformation – The act of planning for business growth and changes across the organization by making innovative tweaks in processes involving personnel, finances, operations, technologies, and culture.

   Purpose – Helps companies adapt to internal & external changes, improve efficiency, and stay competitive.

   Benefits – Captures new markets, increases business value, improves processes, maximizes human resources.

   Different Types of Business Transformation

1.Organizational Transformation

- It is **redesigning** a company's **structure** and its mode of **operation**.
- It is driven by general management and heavily focuses on the employees.

2. Management Transformation

- It **redefines** hierarchical structures and internal relations.
- Flexible leadership model with good collaboration helps in adapting to changes.

3. Cultural Transformation
   - It changes the mindset of the individual and the people comprising the organization.
   - Cultural transformation can take place after managerial transformation.

4. Digital Transformation
   - It is a digital business transformation strategy that uses modern technology to improve the product and customer experience.

5. Information Systems Transformation
   - It includes integration of new technologies to all information management resources like technologies, processes, and staff that can be used to analyze and share newly available data across all departments.

6. Transformation of Business Processes
   - It is the automation of repetitive tasks by using digital tools to minimize working hours and focus more on the main business processes.

Drivers of Business Transformation

1. **Lead**
   - Leaders made decisions that were best for the whole organization.

2. **Inspire**
   - It is important for everyone to be part of success and give confidence to meet the goal.

3. **Care**
   - Leaders must allow employees to express their opinion to keep them motivated and engaged.

4. **Collaborate**
   - Leaders must provide a safe space where working together can help nurture innovation and engagement.

5. **Empower**

- Leaders must provide structure for transformation and provide room for creative freedom.
- Leaders must empower employees to be part of the change and be involve in the process.

6. **Build**

- The use of the right technology is critical to the successful transformation.
- Leaders need to prove the value of new technology-enabled approaches in the process of transformation.

Steps in Business Transformation

1. **Strategy**

- Develop realistic business transformation strategies.
- Understand the current state of the business.
- Map out a vision for the future.
- Every action and decision must be aligned with the vision.

2. **Establish Leadership**

- Assign a program director or team that will oversee the transition to a new operating model.
- It involves tasks like budget control.
- Make sure the vision is at the core of all actions and decisions.
- CEO, CFO, and members of the board are ideal candidates for these roles.

3. **Planning and Scoping**

- Identify the areas, work processes, and systems that will be affected by the transformation.
- It helps outline sub-projects, goals, time frames, and budget limits.
- It helps plan how the changes will be communicated to staff and customers.

4. **Set up Program Management**

- Appoints transformation managers in each individual work stream like HR, Finance, and IT.
- It is their responsibility to deliver on time, motivate the team and stick to the road map.

5. **Build Resource**

- Seek outside help and hire experienced experts to work with the program director and internal transformation managers.
- A well-blended team ensures neutral perspective.

6. Execution

- Engage the staff to regularly re-evaluate the implementation plan and adjust if necessary.

7. Integration

- Employees need to have training during the integration phase - Integration architects must provide critical data about the integrations.

Challenges in Business Transformation

- Needs clear strategy and vision.
- Risk of losing momentum without stakeholder engagement.
- Requires organization-wide readiness for change.

Examples of Successful Business Transformations

Nokia

- Nokia Corporation dramatically transform in the face of shifting market dynamics.
- Between the years 1985-1995, Nokia expanded its original product portfolio that was comprised of paper, rubber, and cables and started specializing in consumer electronics and then into mobile telecommunication networks.
- Nokia kept on re-adjusting through periods of mergers and acquisitions that was followed by organic growth.
- Nokia was not always quick to react to market changes, customer complaints or inefficient production.

IBM

- IBM has an impressive business transformation that spanned over several decades.
- IBM started out producing clocks and typewriters.
- With the rise of computers, IBM expanded its portfolio and become a leader in “business machines”.

- Nowadays, IBM is shifting its focus from hardware to software and services model.
- IBM achieved transition by acquiring companies in the software and services industry.

Netflix

- Netflix displayed exceptional use of technology and the ability to quickly adapt to a changing market.
- Netflix started out as a DVD rental by mail service and then switched over to digital distribution.
- In 2012, Netflix produced original films and television series.
- Netflix switched from a monolith architecture to a cloud-based microservices architecture in order to avoid server outages.
- Netflix is also known for a working culture that is defined by freedom and responsibility.

M13 – Process Optimization

Process Optimization – The discipline of improving a specified set of process parameters without violating constraints.

Goal – Minimize cost, maximize efficiency, improve decision-making.

Business Process Optimization (BPO) – The practice of increasing organizational efficiency by improving processes.

Relation to BPM – It is part of the broader discipline of Business Process Management (BPM).

Examples of Optimization

- Eliminating redundancies
- Streamlining workflows
- Improving communication
- Forecasting changes

Examples of Process Optimization

1. Purchase Orders
    - Multiple purchase orders clog the queue of the purchasing department.
    - **Dedicated workflow management system** is used to streamline requests.
    - It allows the employees to choose the item and send it for approvals automatically.
2. Travel Reimbursement
    - The finance department makes frequent errors when reimbursing expenses.
    - The entire process is paper-based.
    - **Digital Form** is used where employees fill the amount in form fields.
3. Employee On-boarding
    - HR manager sends the employee agreement over email to be signed prior to IT provisions.
    - But this process is done manually.
    - **Email trigger** is used to make the process faster.
    - Once the employee signs and sends the employee agreement, an email is automatically sent to IT.

Benefits of Process Optimization

1. Identifies & eliminates bottlenecks or redundancies.
2. Improves process outputs & overall quality.
3. Strengthens collaboration across departments.
4. Increases productivity & efficiency.
5. Saves time, resources, and finances.
6. Reduces risks by avoiding errors and rework.
7. Helps organizations stay competitive.
8. Delivers better results in dynamic markets.

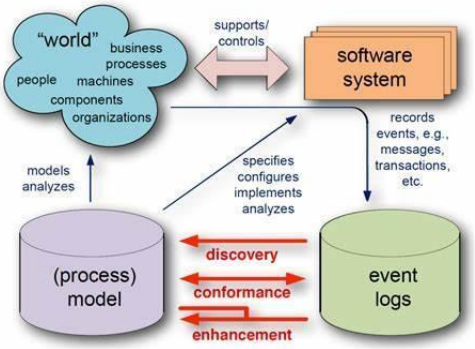
Steps in Business Process Optimization

1. Identify Processes for Optimization – Analyze using metrics (cycle time, error rate, customer feedback).
2. Map the Processes – Outline steps, inputs, outputs; detect inefficiencies.
3. Analyze & Prioritize – Rank improvements by impact, feasibility, and cost.
4. Redesign the Processes – Remove redundancies, automate tasks, adjust sequences.
5. Test the new Processes – Check effectiveness and efficiency.
6. Implement & Monitor the ew– Roll out, collect feedback, measure success.
7. Continue Improving – Keep optimizing with feedback & monitoring.

E. Process Optimization Methods

1. PDSA Method

- It helps improve the quality of the process and achieve optimization
- **Plan**: Map out and define the achievements to be accomplished.
- **Do**: Test the potential changes on a small scale
- **Study**: Study the results of the method and determine if successful
- **Act:** Implement the changes in the bigger scale



2. Process Mining Method

- Take the data from the event log and analyze the actions of the team members
- Review the steps the team members perform to complete a duty or task
- Convert the collected data into meaningful insights to identify concerns
- Optimize the necessary processes

3. DMAIC Method

- It is a data-driven strategy.
- It has the following cycle of steps:
  - **Define**: Define the processes that require optimization.
  - **Measure**: Measure and identify how the process performs.
  - **Analyze**: Analyze how you can optimize the process.
  - **Improve**: Improve the process.
  - **Control**: Control the future performance of the new or upgraded performance.

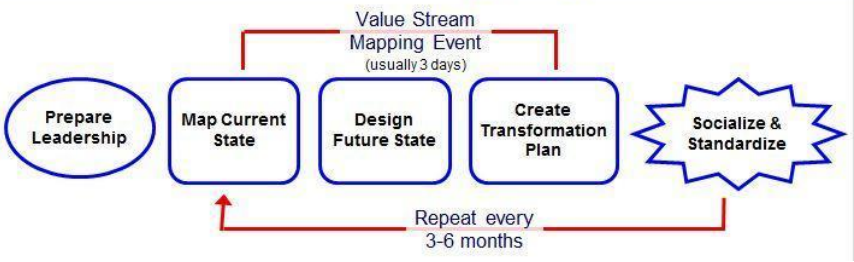
4. BPO Project Management Method

- It has the following cycle of steps:
  - **Initiating**: Authorize the phase, process or project as part of the overall initiative.

Planning: Define and redefine the objectives and select the best actions to achieve them.
- **Executing**: Coordinate and collaborate with people who will help execute the plan/strategy.
- **Controlling**: Ensure the objectives are met. Regularly monitor and measure the progress.
- **Closing**: Formally close the project once the optimization method achieves its purpose.

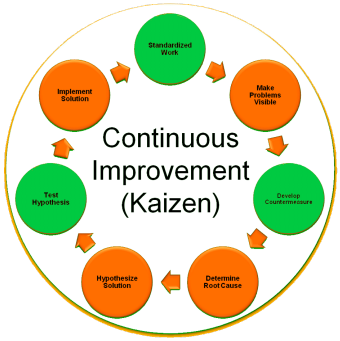
5. Value Stream Mapping Method

- It is a process that relies on a value stream map.
- It represents data and information that flows throughout the project.
- It is used to bring the services and products to the customers.
- Its benefits are the following:
    - Identifying and eliminating waste
    - Gaining valuable insight into decision-making processes and process flows
    - Setting measurable and realistic goals for process improvement
    - Determining the areas that need improvement



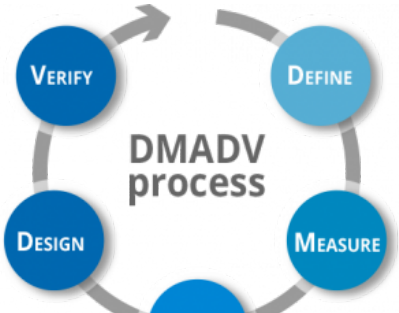
6. Kaizen Method

- It helps improve all business function regularly
- Its benefits are the following:
    - Promotes faster deliverable and safety measures
    - Improves job satisfaction and productivity
    - Improves business processes
    - Enhances product quality and customer approval ratings.



7. **DMADV Method**

- It focuses on helping increase quality levels
- It brings out dramatic change
- Its benefits are the following:



- Increases revenue and profits
- Improves ratings and satisfaction of customers
- Reduces number of errors
- Develops complete new products and processes

8. SIPOC Analysis Method

- It is used in organizing the data collected on customers and products involved in the process
- Its uses are the following:
    - Identifies any relevant aspects that need improvement
    - Defines complex projects and giving them purpose
    - Understands how a process should work