CHAPTER 1 BUSINESS PROCESS MANAGEMENT AND IT

PROCESS-
❖ It is defined as a sequence of events that uses inputs to produce output.
❖ It is a coordinated and standardized flow of activities performed by people or machines, which can traverse functional or departmental boundaries to achieve business objective and creates value for internal and external customers.

BUSINESS PROCESS-
❖ It is a coordinated and standardized flow of activities performed by people or machines, in an organisational & technical environment which can traverse functional or departmental boundaries to achieve business objective and creates value for internal and external customers.
❖ These are enacted by the single organisation but may interact with business processes performed by other organisations
❖ A business process 1. has a goal, 2. has specific inputs, 3. has specific outputs, 4. uses resources, 5. has a number of activities that are performed in some order, 6. may affect more than one organisational unit, & 7. creates value of some kind for the customer.

PROCESS MANAGEMENT-
❖ Process management is based on a view of an organisation as a system of interlinked processes which involves concerted efforts to map improve and adhere to organisational processes
❖ Its key concept is the convergence of technologies with process management theories.
❖ End to end process means all the work that should be done to achieve the process goals, that is, from very beginning to very end.

BUSINESS PROCESS FLOW-
❖ Accounting- This cycle covers the business processes involved in recording and processing accounting events of a company.
❖ Sales/order to cash- It covers all the business processes relating to fulfilling customer request for goods or services.
❖ Procure/purchase to pay- It covers all the business processes related to obtaining raw materials required for production of a product or for providing a service.
❖ Finance- It is one of the most important & limited resources available with government. Its proper use can help target areas of need, bring in efficiency and improved services. One of the principle of good governance is helping Government and their Agencies to use their funds better, so they can ensure that public resources are used effectively and reach the intended beneficiaries.

CLASSIFICATION OF BUSINESS PROCESSES-
❖ These are pervasive in an organisation and represent all activities that an organisation undertakes
❖ These are classified into two parts: Organisational & Operational business processes
❖ Different levels of Business Process Management-
  ❖ BUSINESS STRATEGY-
    It is the strategy of the company which describes its long-term concepts to develop a sustainable competitive advantage in the market.
  ❖ GOALS- At the second level the business strategy is broken down to operational goals which can be organised so that each goal can be divided into a set of Sub goals.
• ORGANISATIONAL BUSINESS PROCESSES-
  These are high level processes that are typically specified in textual form by their inputs
  outputs and expected results and their dependencies on other organisational business
  processes.

• OPERATIONAL BUSINESS PROCESSES-
  In it, the activities and their relationships are specified by Business Process models. These
  are the basis for developing implemented business processes.

• IMPLEMENTED BUSINESS PROCESSES-
  It contains information on the execution of the process activities and the technical and
  organisational environment in which they will be executed.

BUSINESS PROCESS MANAGEMENT-

  The achievement of an organisation's objectives through the improvement, management and
  control of essential business processes.

  Key aspects are defined below-

  Achievement
  Realising the strategic objectives as outlined.

  Organisation
  It refers to in Enterprises parts of an enterprise perhaps a business unit that is discrete in its own
  right.

  Objectives
  Objectives of a BPM implementation range from the strategic goals of the organisation through to
  the individual process goals.

  Improvement
  It is about making the business processes more efficient and effective.

  Management
  It is about organising all the essential components and sub components for a process and includes
  arranging the people there skills motivation performance measures reward process itself and the
  structure and Systems necessary.

  Control
  It involves full cycle of PDCA its essential component is to have the ability to measure correctly if we
  cannot measure something we cannot control and manage it.

  Essential
  Not every process in an organisation contributes towards the achievement of the organisations
  strategic objectives essential processes are the ones that do.

  Business
  BPM must have any impact on the business by delivering benefits.

  Processes- Already done
  BPM evaluate the efficacy & usefulness of business processes for reducing costs & ensure value
  creation.

BUSINESS PROCESS MANAGEMENT PRINCIPLES-

  Processes are assets that create value for customers. Because processes are assets, core processes
  and processes that generate the most value to customers should be carefully managed and
  continuously improved.
A managed process produces **consistent value to customers**. Management of processes entails the tasks of measuring, monitoring, controlling and analysing business processes

**continuous improvement** is a natural result of process management and is facilitated by the availability of process information to stay competitive.

**BUSINESS PROCESS MANAGEMENT PRACTICES**

1. **Process-oriented organisational structure**-
   - It identifies three types of process oriented structure:
     - **Process organisation**-
       - Each process unit would contain various functions that support the process
     - **Case Management Organisation**-
       - Employees would still report to case managers in addition to functional heads
     - **Horizontal Process Management Organization**-
       - Organisation would create process owners who are responsible for core processes.

2. **Appoint process owners**-
   - The process owners are assigned to the core processors who are responsible for the performance of the process assigned.
   - The process owner should be a senior member of the organisation who has the power to influence others senior managers

3. **Top-down commitment, bottom-up execution**-
   - Top management needs to commit to it and support the process focused management approach it requires.
   - Executing process improvement should use a bottom-up approach as it encounters less resistance from the employees most directly affected by the change.

4. **Use information technology to manage the processes**-
   - Put in place IT system to monitor, control, analyse & improve processes

5. **Collaborate with business partners**-
   - It is necessary to extend process management outside the enterprise that involves sharing information with business partners and helping business partners with their business processes.

6. **Continuous learning & process improvement**-
   - The broadening of tasks workers are expected to perform and new technologies that are implemented to support BPM require workers to be updated on their skills and knowledge and such organisations thrive on continuous improvement.

7. **Align employee rewards to process performance**-
   - When employee rewards are aligned to process performance, they further collaborate among workers who are engaged in the same process, to increase the business process performance.

8. **Utilize BPR, TQM & other process improvement tools**-
   - Under the BPM approach the previous process focused business improvement approaches could be seen as tools for improving the processes.
BUSINESS PROCESS MANAGEMENT LIFE CYCLE-

❖ **Analysis Phase** - Analyse the current environment, current processes, identification of needs and definition of requirements.
❖ **Design Phase** - Evaluate potential solutions to meet the identified needs
❖ **Implementation Phase** - involves project preparation & blueprinting
❖ **Run & Monitor Phase** - execute business process and monitor them.
❖ **Optimize** - Improve continuously.

THEORIES OF PROCESS MANAGEMENT-

**SIX SIGMA**-

❖ Six Sigma is a set of strategies, techniques and tools for process improvement
❖ it seeks to improve the quality of process outputs by identifying and removing the causes of defects and minimising variability in manufacturing and business processes.
❖ it follows a defined sequence of steps and has quantified value targets
❖ Life cycle of Six Sigma (DMAIC)-
❖ Define - customers are identified and their requirements are gathered. Measurements that are critical to customer satisfaction are identified for further project improvement
❖ Measure - process output measures that are attributes of CTQs are determined and variables that affect these output measures are identified
❖ Analyze - using statistical methods and graphical displays, possible causes of process output variations are identified to determine root cause of variation
❖ Improve - solution alternatives are generated to fix the root cause. The most appropriate solution is identified and validated
❖ Control - process is standardized and documented, before and after analysis is performed on the new process to validate expected results & monitoring system is implemented to ensure process is performing as designed.

**TOTAL QUALITY MANAGEMENT**-

❖ It is the organisation wide effort to install and make permanent the climate in which it continuously improve its ability to deliver high quality products and services to customers
❖ it is a comprehensive & structured approach to organisational Management that seeks to improve the quality of products/services through ongoing refinements in response to continuous feedback
❖ it is based on quality management from the customer's point of view
❖ **Plan** - people define the problem to be addressed, collect relevant data and ascertain the problem’s root cause
❖ **Do** - develop and implement solution
❖ **Check** - confirm the results through before-and-after data comparison
❖ **Act** - document the results, inform others about process changes and make recommendations for the problem to be addressed in the next PDCA cycle.

**BUSINESS PROCESS REENGINEERING**-

❖ BPR is the fundamental rethinking and radical redesign of processes to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality, service and speed

Contact on twitter- @tweetopians
❖ Dramatic Achievement- it means to achieve 80% or 90% reduction and not just 5% or 10% reduction by making major improvements and breakthroughs
❖ Radical Redesign- it means reinventing and not enhancing or improving. It is a clean slate approach where whatever you were doing in the past is all wrong and you do not get biased by it
❖ Fundamental Rethinking- it means asking question “why do you do what do you do” thereby, eliminating business processes altogether if it does not add any value to the customer

BPR SUCCESS FACTORS-

❖ Organization wide commitment-
  • changes to business processes would have a direct impact on processes, organisational structures, work culture, information flows, infrastructure & technologies, and job competencies which requires strong leadership and support from the top management.

❖ BPR team composition-
  • It is formed, which would be responsible to take the BPR project forward and make key decisions and recommendations
  • it would include active representatives from top management, business process owners, technical experts and users

❖ business need analysis-
  • it is important to identify exactly what current processes need engineering
  • a series of sessions are held with the process owners and stakeholders and all the ideas would be evaluated to outline and conceptualize the desired business process

❖ adequate IT infrastructure-
  • an IT infrastructure is a set of hardware, software, networks facilities etc in order to develop, test, deliver, monitor, control or support IT services
  • effective alignment of IT infrastructure to BPR strategy will determine success of BPR efforts

❖ effective change management-
  • BPR involves changes in people behaviour and culture, processes and technologies.
  • An effective Change management process would consider the current culture to foster a change in the prevailing beliefs, attitudes and behaviours effectively

❖ Ongoing continuous improvement-
  • it is an ongoing process hence Innovation and continuous improvement are key to the successful implementation of BPR

NEED FOR BPM IMPLEMENTATION-

❖ it creates the long-term future positioning of the business
❖ it creates short term cost effectiveness and improvement to current customer service
❖ it initiates continuous improvement
❖ It re-engineers the business radically.
❖ It provides clear future competitive differentiation
❖ it introduces leadership and the role for managers and empowered staff.
KEY FACTORS TO BE CONSIDERED IN IMPLEMENTING BPM:

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>KEY CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>Single process, department, company</td>
</tr>
<tr>
<td>Goals</td>
<td>Improvement, automation, re-engineering</td>
</tr>
<tr>
<td>Methods to be used</td>
<td>Six sigma, TQM</td>
</tr>
<tr>
<td>Skills required</td>
<td>Consultants, basic education, formal certification</td>
</tr>
<tr>
<td>Tools to be used</td>
<td>White-boards, sticky notes</td>
</tr>
<tr>
<td>Investments to make</td>
<td>Training, tools, time</td>
</tr>
<tr>
<td>Sponsorship needed</td>
<td>Executive level, department level, process owner level</td>
</tr>
</tbody>
</table>

BPM TECHNOLOGY:
- It gives organisations the ability to implement a real time process improvement without the extensive process conversion efforts as the original business processes already exist.
- It provides an independent process layer, linking the various independent applications needed to execute a single end to end business process.
- It can then manage the flow of activities along different applications and the people involved and also reduce execution time.

VALUE CHAIN AUTOMATION:
- It refers to separate activities which are necessary to strengthen an organisation’s strategies and are linked together both inside and outside the organisation.
- It is the chain of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market.
- Value chain consists of primary and supportive activities already done in SM.

PROCESSING CYCLES OF ACCOUNTS BPM:
- Financing cycle provides a clear view of firm’s processing framework & involves activities of obtaining necessary funds to run org., repay creditors, distribute profits to investors.
- Revenue cycle involves activities of selling goods/services & collecting payment for sales.
- Expenditure cycle involves activities of buying/paying for goods/services used by org.
- Human resource/payroll cycle involves activities of hiring & paying employees.
- Production cycle involves recurring set of business activities & related data processing operations associated with manufacturers of products.
- General ledger & reporting system involves information processing operations involved in updating general ledger & preparing reports that summarize the results of activities of org.

Data Processing Cycle:
- It consists of following steps with alerts controls and feedback at each step.
  - Data Input- Involves data capturing, control implementation, record in journal, post to ledger and prepare reports
  - Data Storage- organises the data in master file for easy and efficient access
  - Data Processing- add, delete and update the data in the master file
  - Information Output- generate documents and managerial reports

Contact on twitter- @tweetopians
IMPACT OF IT ON BPM

❖ gains ability to integrate people and systems that participate in business processes
❖ gains ability to monitor, control and improve business processes in real time

BENEFITS OF BPMS-

❖ automating repetitive business processes-
  • it reduces the manual operational costs and helps employees to concentrate on activities that are important for success of business
❖ operational savings-
  • it optimises the processes that are repetitive and the lead to reduced expenses which translate to immediate cost saving
❖ reduction in the administration involved in compliance-
  • companies worldwide are seeing the need to manage compliance as part of their everyday business activity & is ideal suited to help companies in compliance
❖ freeing-up employee time-
  • time is money
  • in business for each additional hour the employee takes to complete a manual business process, there is a hard cost associated in terms of time and soft cost associated with losing business or lowered productivity

BUSINESS RISKS OF FAILURE OF IT-

❖ superficial or deficient executive involvement
❖ deficient project management
❖ breakdown in gap analysis
❖ failure to identify future business needs
❖ inadequate assessment of the need for Change management
❖ software fails to meet business needs
❖ technological obsolescence

APPROACHES TO MAPPING SYSTEMS-

❖ Documentation includes flowcharts, narrative and other written communications that describe the inputs, processing and outputs of an accounting information system
❖ it also describes the logical flow of data within a computer system and the procedures that employee must follow to accomplish application task

Need for documentation-

❖ Depicting how the system works-
  • in computerised systems the processing is electronic and invisible
  • therefore, documentation is required to help employees understand how a system works
❖ training users-
  • it aids help train users to operate information system
❖ designing new systems-
  • it helps system designers to develop new systems
  • well written documentation play key role in reducing system failures and decreasing the time spent correcting emergency error

Contact on twitter- @tweetopians
❖ **standardizing communications with others**-
  - it aids such as ER diagrams, system flowchart and data flow diagrams are more standardized tools and they are more likely to be interpreted same way by all parties viewing them.

❖ **Auditing information systems**-
  - It helps depict audit trail.

**ENTITY RELATIONSHIP DIAGRAM**-

- It is a data modelling technique that creates a graphical representation of the entities and the relationships between entities within an information system
  - BOXES are commonly used to represent entities
  - DIAMONDS are normally used to represent relationship
  - OVALS are used to represent attributes, characteristics & features

❖ **TYPES OF RELATIONSHIPS**-
  - ONE-TO-ONE RELATIONSHIP (1:1) is shown by a line connecting the two entities
  - ONE-TO-MANY RELATIONSHIP (1:N) is shown by a line connecting the two entities with a crows-foot symbol denoting the many-end of the relationship
  - MANY-TO-ONE RELATIONSHIP (M:1) is the reverse of one-to-many relationship
  - MANY-TO-MANY RELATIONSHIP (M:N) is shown by a line connecting the two entities with crows-foot symbol at both ends

❖ **ADVANTAGES**-
  - it is simple
  - it is easily understandable
  - it can be generalized and specialised based on needs
  - it can help in database design

❖ **LIMITATIONS**-
  - physical design derived may have some amount of inconsistency or ambiguity
  - sometimes diagram may lead to misinterpretations.

**DATA FLOW DIAGRAM**-

- DFD is a graphical representation of the flow of data through an information system

❖ **Major DFD components**-
  - ENTITY-
    - it is the source or destination of data
    - entities either provide data to the system sink (source) or receive data from it (sink)
    - entities are also referred to as agents, terminators or source/sink.
  - PROCESS- (already done)
  - DATA STORE
    - It is where I process stores data between processes for later retrieval
  - DATA FLOW
    - it is the movement of data between the entity, the process and the data store and is represented by an arrow

❖ **CONTEXT DIAGRAM** is a high level DFD that shows the entire system as a single process and shows interaction between the system and external agents, which acts as data sources and data Sink and gives no clues as to its internal organisation

Contact on twitter- @tweetopians
Symbols used in DFD:

<table>
<thead>
<tr>
<th>Process</th>
<th>Data Store</th>
<th>Entity</th>
<th>Data Flow</th>
</tr>
</thead>
</table>

DFD are of two types:
- LOGICAL DATA FLOW DIAGRAM describes the business events that take place and the data required and product by each event
- PHYSICAL DATA FLOW DIAGRAM shows how the system will be implemented

ADVANTAGES:
- it describes the boundaries of the system
- it is a straightforward graphical technique which is easy to recognise
- it is a detailed representation of system components
- it is easier to understand

LIMITATIONS:
- it takes a long time to create, so long that the analyst may not receive support from management to complete it
- physical considerations are left out

FLOWCHART:
- it is a type of diagram that represents an algorithm, workflow or process showing the steps as boxes of various kind and their order by connecting them with arrows
- it allows the programmer to compare different approaches and alternatives on paper and often shows interrelationships that are not immediately apparent
- it helps the programmer avoid fuzzy thinking and accidental omissions of intermediate steps

Symbols used:

<table>
<thead>
<tr>
<th>Process</th>
<th>Decision</th>
<th>Document</th>
<th>Data</th>
<th>Start</th>
</tr>
</thead>
</table>

TYPES OF FLOWCHART:
- DOCUMENT FLOWCHART traces the physical flow of documents through an organisation
- SYSTEM FLOWCHART depicts electronic flow of data & processing steps in an information system
- PROGRAM FLOWCHART is concerned with the logical or arithmetical operations on data within the CPU and the flow of data between the CPU and the input/output peripherals

Advantages:
- Quicker grasp of relationship - the programmer can chart a lengthy procedure more easily with the help of a flowchart than by describing it by means of written notes
- Communication - it aids in communicating the facts of a business problem to those whose skills are needed for arriving at the solution
- Documentation - they serve as a good documentation which aids greatly in future program conversions and serve as training function
- Orderly check out of problem - it is an important tool during program debugging by helping in detecting, locating and removing mistakes

Contact on twitter- @tweetopians
LIMITATIONS -
- **Complex logic** - it becomes complex and clumsy where the problem logic is complex
- **Modifications** - if modifications to a flowchart are required, it may require complete redrawning
- **Reproduction** - its reproduction is often a problem as the symbols used cannot be typed

FLOWCHART vs DFD -

<table>
<thead>
<tr>
<th>FLOWCHART</th>
<th>DFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presents steps to complete a process</td>
<td>Presents data flow</td>
</tr>
<tr>
<td>Doesn’t have any input from or output to an</td>
<td>Describes the path of data from an external</td>
</tr>
<tr>
<td>external source</td>
<td>source to internal source or vice-versa</td>
</tr>
<tr>
<td>Shows timing &amp; sequence of process aptly</td>
<td>Describes whether data processing is taking</td>
</tr>
<tr>
<td></td>
<td>place in a particular order or several</td>
</tr>
<tr>
<td></td>
<td>processes are taking place simultaneously</td>
</tr>
<tr>
<td>Shows how to make a system function</td>
<td>Defines the functionality of the system</td>
</tr>
<tr>
<td>Types - system, document, program</td>
<td>Types - Physical Data Flow, Logical Data Flow</td>
</tr>
</tbody>
</table>

DECISION TREE -

- It is also termed as an inference or logical tree and is a collection of a basis (condition) and a conclusion (action)
- The logical operators AND & OR are used to replicate the structure of the if-then rules
- It is a decision support tool that uses a tree-like graph or model of decision and their possible consequences
- These are simple but powerful form of multiple variable analyses

Advantages -
- It is simple to understand and interpret
- Possible scenarios can be added
- Worst, best and expected values can be determined for different scenarios

Limitations -
- Information gain in decision trees are biased in favour of those attributes with more levels
- Calculation can get very complex, particularly if many values are uncertain and/or if many outcomes are linked
- It consists of decision node, leaf node and root node.

DECISION TABLE -

- A decision table is a table which may accompany a flowchart, defining the possible contingencies that may be considered within the program and the appropriate course of action for each contingency
- CONDITION STUB comprehensively lists the comparisons or conditions
- ACTION STUB comprehensively list the actions to be taken along the various program branches
- CONDITION ENTRIES list possible permutations of answers to the questions in the conditions stub
- ACTION ENTRIES list, corresponding to the condition entries, the actions contingent upon the set of answers to questions of that column

Advantages -
- **Easy to draw** - it is easy to draw and modify as compared to flowchart
- **Compact documentation** - one decision table may replace few pages of a flowchart

Contact on twitter- @tweetopians
• **Simplicity** - it is easier to follow a particular path in one column of a decision table than it is to go through several pages of the flowchart
• **Non-technical** - no knowledge of computer language or CPU working is necessary for drawing decision tables

❖ **Limitations**-
  • All programmers may not be familiar with decision tables and therefore flow charts are more common
  • Flowcharts can better represent a simple logic of the system rather than a decision table
  • It does not express the total sequence of the events needed to solve the problem