M01: BT

Introduction to Business Processes and Technology
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To get started with this module, Business Processes and Technology, watch this video on Bill Gates' quote:

Intro Video:

Bill Gates:
1st rule: automation applied to an efficient operation will magnify the efficiencies
2nd rule: automation applied to an inefficient operation will magnify the inefficiencies

Many companies ignore the 2nd rule. Business processes and operations need to be the focus. If the data going into the

If the data going into a technology system is bad or difficult to gather, then no software is going to provide a real solution.

Start with looking at business systems from a people and information perspective.

Once the foundation is solid, then a good software solution is more likely.

Module Learning Outcomes
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By completing this module, you will be able to achieve the following learning outcomes:

1. Explain business processes and business technology
2. Explain business technology standard
3. Explain Technology domains
4. Summarize a business use of IT

First watch my lecture video on business processes and business technology (5:53 minutes). I introduce the context for business processes and technology in this lecture video.

Video 01: Business Processes and Business Technology

In this video, we will cover two very important and related terms in business business process and business technology.

Bill Gates said, "The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency."

The goal and the tasks of a business process must be understood and the process steps must be aligned with the goal. This is a big challenge of managing business processes as they grow in number and complexity. Here we briefly introduce the business process and business technology.

We will discuss the critical relationship between a process and a technology.

Business processes are goal driven and must be well defined.

In contrast to these illustrations, the goal of a distribution process is to efficiently deliver a product or service to a customer.

The major steps of a distribution process can be packaging, transportation and delivery. These steps are obviously interlinked and include sub-steps. These sub-steps must be clearly understood.

Deming once said, "If you can't describe what you are doing as a process, you don't know what you're doing." A clear understanding of all the details of a business process is paramount to identify the appropriate technology support the process.

Business processes can be classified in several ways.

We can use the stakeholders to group business processes. Generally, the stakeholders are customers, employees, suppliers, communities, governments, and investors.

Products services can also be included for business classification.

Each of these categories of processes are divided into three types of function based processes: management, operational and support processes.

Business processes are regularly evaluated for possible improvements. Most of these improvements are brought by technology.

Business process improvement, that is BPI, is achieved by eliminating duplicate and redundant steps, speeding up the process cycle time, improving product quality, reducing process costs, creating better customer experience.

Business technology helps in improving a business process. This example provides a simple illustration of a business process improvement.

A mid-sized wholesaler provides components for manufacturers delivering pallet loads directly to plants. The delivery driver pulls up to the address on file only to discover it's not a manufacturing facility, it's a residence. The client runs a small business and the credit card's billing address belongs to the owner's home. While the shipping address is for the manufacturing facility, delivery staff had to mix up the client's billing and shipping addresses, leading to a costly process defect.

Some of the improvement actions in this example are, update the operating procedure to require delivery staff to double check shipping addresses against billing addresses, print only the shipping address, and print it in bold letters on the packaging slip. Display the next delivery address on the dashboard. This will involve using upgrading the delivery guidance technology, Business technology, that is, emerging technologies can be used to streamline all types of processes. The technologies can be used to either automate the whole process end to end, or automate a portion of the process.

I have briefly introduced the business process and business technology.

Thank you for watching.

Video 02: Watch this video explaining a business process in simple terms (2 minutes):

What is a business process?

What is a business?

- A organization
- A group of people who coordinate their work to create value.

Often times the work of an individual person does not create value, unless it is eventually paired up with the effort of other people.

We break up the job creating value into chunks according to individual skillsets. Think of it as an assembly line. The process has a start and finish. At each step, value is added (inputs and outputs).

Display: Input (blank form) > Adding Value (fill out form) > Output (filled form)

Each decision point is sometimes called “branches.”

How well we do them? How long it takes? How accurate they are? All of these determine the success of the organization.

Video 03: This video expands on the description of a business process and discusses the importance of managing business processes. Pay special attention to the three pillars of BPM, the BPM life cycle, and common mistakes in implementing a BPM system. Watch a video on an introduction to Business Process Management (8 minutes):

Business Process Management: standardized way to convert set of inputs to desired output that a customer would find valuable.

Example: loan application at a bank.

- Input: customer fills out application
- Process: Credit check, other activities that enables the bank to make a decision of whether or not to approve.
- Output: decision that is communicated to the customer.

Output: everything that emerges from the processes.

Input can often be in the form of information.

The business process transforms several inputs to more valuable outputs. Out

*3 Pillars of BPM: all need to work for the process to be a success.

- Technology: needs to work properly in order for system to work.
- People: if the customer neglects to provide all of the necessary information, the system will alert that it is incomplete.
- Process

*The BPM Life Cycle:

- 5 Phases:
  - Design: processes are carefully designed to be as straightforward and simple as possible.
  - Modeling/Simulation: process is documented in the form of an activity model. It is then possible to simulate the behavior of the system through a “what if” approach.

- Execution: process is deployed.
- Monitoring: checks to see if anything goes wrong.
- Optimization: corrections and enhancements are made to fix the process.

Benefits of BPM:

- Increased visibility
- Provides management with increased opportunity identify bottlenecks
- Provides increased ability to provide further insight to optimization
- Reduced lead times
- Better definition of roles
- Fraud prevention, auditing, regulatory compliance

BPM uses a cross-functional approach. It requires training so that people know what is expected of them. It requires that customers listen to customer feedback.

*Common Mistakes in Implementing a BPM System:

- Neglecting end user
- Too much automation
- Silo thinking
- No training
- Inflexibility
- Gut feel
- Retrenchment (i.e. don't use it as a method to reduce headcount)
- No recognition
- Early software configuration

Read this article which supplements the previous video on BPM. It talks about business process implementation, similar to the idea of business process life cycle. It provides some good examples of business processes. Pay attention to business process examples, business process automation, and its benefits. 6 Business Process Examples and Automation Ideas.

https://www.comindware.com/blog-6-business-process-examples-automation-ideas/

A Business Process is a set of related, structured activities and steps performed by the people or equipment in an organization in order to achieve the basic organizational goals like Profit maximization and Customer satisfaction.

A Business process is often regarded as a flowchart or workflow of logical steps, and it serves as a primary foundation for several related ideas like Business Process Management, Process optimization, Process mapping, Process Simulation, Process Automation, etc.

Basic Steps of Business Process Implementation:

1. Define your goals: At this stage, you will first define the basic purpose of the process as well as the reasons for creating it.
2. Plan and map your process: Here you ruminate on effective strategies you can adopt to achieve the set goals
3. Set actions and assign people that will handle it: Who are the best individuals to handle the tasks? What are the machines they will need to execute the plan? These and more are what you will make decisions about here
4. Test the process: The goal here is to first scrutinize the process at a low-key level and see how it faired.
5. Implement the process : If you are convinced with the results you get after testing the process, then it is time to run it on a global level. At this stage, you must communicate properly with all those who will be handling the tasks and you will also need to train them for better results.
6. Monitor the results: Try reviewing the process and check for any threats it may later bring, and find a way to mitigate the risk.
7. Repeat: If you were able to achieve the set goals with the process, continue to replicate it and always track its effectiveness and progress along the line

*Business Process examples:

- Manufacturing: Order processing, engineering change control, product assembly, product line process, quality assurance, maintenance
- Finance: Invoicing process, risk management process, the billing process
- Health: Medical assessment process, drug approval process, financial process.
- Banking: Customer onboarding process, credit check process, the risk assessment process
- Travel: Agent billing, trip booking, leave management process, business travel management process.
- Procurement: Purchasing, invoice reconciliation, account receivable
- Advertising: Cost estimating, cost approval, cost reviewing
- Sales and Marketing: Product delivery process, product development process, the marketing research process

*Business Process Automation (BPA):

- Business Process Automation involves the use of assisted technology such as software & apps in performing business processes and activities, with the sole aim of minimizing cost and increasing productivity. When a business has its processes automated, it stands a chance to reap some benefits like greater efficiency, minimal error, reduced labor stress, cost minimization, profit maximization, better customer satisfaction, among others. A great example of common process automation found in businesses is the sales process automation and IT process automation.
- Business process automation (BPA) allows businesses to organize their personnel and systems through workflows and thus facilitating the move towards achieving the set organizational goals.
- Business process automation is not restricted to data management and record keeping alone; it allows you to exercise absolute control over various business issues like facility management, marketing, customer relationships, employee analytics, staff recruitment, standardization, but to mention a few.

*Business Process Automation (BPA) benefits:

- Automated is modern and it is more accurate, standardized or optimized compared to the manual method. We will discuss more about Business process example and automation ideas later in this article.
- Business Process Automation brings about Increasing Value Per Work – When you automate your business the burden on the employees will reduce and they will be able to channel their strength and exuberance to other essential assignments and tasks. This will, in turn, enhance their focus and productivity.
- Business Process Automation leads to Higher Employee Satisfaction – There are some business processes that are extremely complicated and if you leave them for the employees to handle, it may demotivate them and may even reduce their productivity. But the case would be reverse when you automate it because the employees will only be required to perform little tasks.
- Business Process Automation Minimizes Human Error – As long as human beings are involved in a process, the error is inevitable, and some errors can be colossal at times. Automating your business will help eliminate every form of human error, and thus giving you a more accurate result.
- Streamlined communication
- Cost minimization
- Improved workflows
- Increased flexibility

- Better customer satisfaction
- Consistent maintenance of a work standard
- Increased product/service quality
- Increased administrative control.

Video 05: Watch this webinar on Business Process Analysis (50 minutes). This webinar goes into the details of business process analysis, business process goals and metrics. It introduces the terms like business analyst, process quality characteristics, process goals and metrics, process change management, and BPA life cycle, etc. Pay attention to the role of a business analyst, process quality characteristics, and the difference between goal and metric. Relate the BPA life cycle to the BPM life cycle discussed earlier.

https://youtu.be/zCi19eNcjgw

*Role of Business Analyst: is the process really broken? What is the true story? This helps management make fact-based decision.

- Understand the problem or opportunity, know our goals, and always work with facts
- Do not accept information at face value; double check its validity
- Obtain information from all available sources
- Where possible, obtain the same information from multiple sources
- Dig for facts in the face of assertions and suppositions
- Do not assume that management is correct
- Identify the actual problem(s) and related root causes
- Help management make fact-based decisions
- Goal is to make improvements or recommendations

*Process Quality Characteristics - a high quality process should have these attributes:

- Process goal: the business purpose of the process is known; agreed upon; appropriate
- Repeatable: can be done the same way again and again
- Predictable: outcome is reliably produced
- Flexible: can be adapted to meet new requirements
- Usable: easy to learn; easy to carry out
- High quality output: process outputs have acceptable quality
- Timely: result occurs when needed
- Efficient: requires minimal time, resources, and cost

- Effective: gets the job done every time
- Verifiable: it is possible to validate the outcome

Factors that impact Process Quality - if you want to improve a process, you will work with the following factors:

- Process:
  - Well defined; adequately documented
  - Practitioners under and follow it
  - Requirements are clear
  - Includes validation points
  - Continuously improved
- Tools:
  - Available to those who need them
  - Correctly calibrated
  - Appropriate to the tasks at hand
- Inputs:
  - Available where and when needed
  - Appropriate quality and grade
  - Sufficient quantity
  - Correct type
  - Acceptable packaging
- People:
  - Have adequate training
  - Have correct aptitude and experience
  - Have a suitable level of motivation

*Difference between Goals and Metrics:

- Goals:
  - At the start of the BPA, the BA should verify there actually is a problem, and that the problem is properly understood. To do this:
    - Identify the process business goal
    - Select metrics that will help you to determine if:
      - Process goals are being met
      - The process is sufficient and efficient
      - There are other problems to consider
  - Examples of process goals:
    - Tactical result of the process
      - Correct item is delivered
      - Delivery is on time
      - Delivery is to the correct party
    - Measurable business impact of process:
      - Prompt and correct deliveries promote repeat business by

maintaining customer satisfaction
        - Prompt and correct deliveries support prompt billing which improves revenue collection
    - In improvement projects, process goals can be used as success criteria in the follow-on implementation projects
- "As-Is" versus "To-Be" Goals
    - If your intent is to keep an existing process as is after it is repaired, document and use "As-Is" process goals
    - If your intent is either to change a process or to define a new one, use "To-Be" process goals
- Process Goals
    - What are the process goals of the business process you selected earlier?
        - What are its outputs?
        - Is there a deadline?
    - What are the business goals?
        - Why would the CEO care about this process?
- Metrics:
    - Determine root cause of failure
    - Determine if the to-be process will be sufficient and efficient
    - Calculate the Return on Investment (ROI)
    - Evaluate the Process with Metrics Data
        - Ask the following questions:
            - Is the process as designed sufficient to meet process goals?
            - Is the process efficient in meeting those goals?
                - If process goals are not being met, efficiency is not relevant
            - Based on the data, what are the process problems?
            - Which problems are most significant?
                - It may be necessary to use a Pareto Analysis to answer this question
    - Process Metrics
        - What questions could you ask that, when answered, would indicate that each goal has been reached, or will be reached?
    - Source of Metrics Data
        - Metrics data can be obtained from the following sources:
            - The data may already exist
        - It may be possible to calculate or estimate the data from existing data
            - In this case, collect the data that is available and then perform whatever operations that may be needed to create the data you need

- You may have to collect new data
  - This is true when the data you need simply is not available

*Relate the Business Process Analysis (BPA) life cycle to the Business Process Manage (BPM) life cycle

- Business Process Analysis (BPA) Lifecycle
- Spiral Process
- Goal: clear understanding of the process
  1. Select Process
  2. Identify Stakeholders
  3. Plan BPA
  4. Elicit Process Information
  5. ***Document Goals; Identify Metrics***
  6. Model the As-Is Process
  7. Root Cause Analysis
  8. Improvement Options
  9. Stakeholder Validation
  10. Model To-Be Process
  11. Present Recommendations

Video 06: Watch this simple video discussing the role of a technology in a business process (3.5 minutes). Pay attention to the generation of transactional data in a business process and the technology to help manage that data through hardware and software. See the "connection" between hardware, software, and the process and the importance of having the right process.

*Transactional data in a business process and the technology to help manage that data through hardware and software

- Creating a mathematical model
- Databases

*See the "connection" between hardware, software, and the process and the importance of having the right process

- Support the process through a means of maintaining the mathematical model
- The hardware supports the software that supports the processes
- IT is merely supporting business processes
- However, improving processes is done so by improving the hardware,

improving the software, etc.

Understanding Business Technology and Business Technology Standards

Business technology is a catch-all phrase for any kind of applications of science, data, engineering, and computing systems to support a business process. Emerging technologies can be used as a business technology to improve a business process. Therefore, it is important to understand the various role and usage of business technology. Business technology standards are framework to organize and categorize the various usage of business technology.

1. Read the following article (about 10 pages). It is a good introduction to business technology and various technology domains. This introduction leads to the discussion of business technology standards in the next video. Introduction to Business Technology
2. Watch a webinar on Business Technology Standards Part I: (35 minutes). This is a comprehensive and quick introduction to the BTS framework relating different aspects of business technology together. It highlights the breadth and depth of the use of technology in business.

https://www.managebt.org/book/introduction/introduction-to-business-technology/

Business technology is a strategy for organizing and coordinating technology management across the entire enterprise. It is a set of management practices, tools, organisational structures, and technology governance designed to ensure that the use of technology is optimized across the enterprise with the overarching aim of satisfying customer needs and expectations.

Today's technology function should work alongside all business areas to make their skills available, whilst embracing those disciplines of customer focus, revenue generation, and product development from other parts of the organisation.

Business Technology introduces three core elements:

- Transform Business Capabilities: innovation and data leadership
  - Business capabilities are the sum of all processes and assets (systems and data) within the company and comprise the entire business organisation, including any supporting functions within the organisation.
- Build Digital Frontline: customer experience and loyalty leadership

    - The digital frontline can be defined as any digital means that connects the company to the user and is visible to the user, whether the user is a customer or a partner, or whether the customer is internal or external.
- Modernize Technology Backbone: cost, quality, and performance leadership
    - The technology backbone consists of all information technology systems and processes that support the running of the businesses operations, through the management of end-user services, plus enterprise and business applications.

Technology domains: Technology exists within many areas of the enterprise today. Often this technology is outside of the influence of the traditional CIO and technology function. Every business is different, and the type, location and amount of technology will rightly vary within each area.

- Data, Security, and Infrastructure:
    - Customer Interfacing Technology: The key characteristic of this technology type is interaction with the customer and the technology centres around the customer experience.
    - Product Technology: This area consists of information technology embedded within the products the company sells: technology that can be operated, monitored and/or interfaced remotely and can interact with its environment 24/7.
    - Operational Technology: Operational technology contains all information systems used for managing, operating and monitoring automation systems and other “shop floor” systems (e.g. laser assisted wheel alignment machine).
    - Business Process Technology: Business Process Technology consists of information technology and solutions that are used for managing business processes and executing business transactions, i.e. systems that support day-to-day business operations (e.g. ERP: enterprise resource planning; and CRM: Customer Relationship Management).

https://www.managebt.org/book/introduction/introduction-to-business-technology-standard/

The Business Technology Standard is a concise, consistent, and straightforward framework for managing technology to bring value to the business. Many organizations are, however, facing challenges combining traditional information technology operations with new digital development. The Business Technology Standard provides clear guidance on how to fit these two worlds together.

The Business Technology Standard consists of three complementary and consistent models and perspectives for unified information and digitalization management:

- **Operating model** to define value-creating flows and disciplines
- **Capability model** to define disciplines and associated capabilities
- **Roles and responsibilities model** to define identities, roles, and responsibilities.

The Business Technology Standard introduces several unique elements addressing the current challenges many organizations are facing with the digital development such as:

- **Value streams** to cope with business diversity and differences in speed, agility, and culture
- **Minimum viable governance** to balance flexibility and governance in decision-making
- **Multi-speed development flows** to respect development method differences
- **Unified roles** to clarify the roles and responsibilities in a unified way.

Operating Model
The Business Technology Standard operating model defines how business value can be created with technology management. The operating model has five value-adding disciplines: demand, development and services, complemented with the two overarching disciplines: strategy and governance, and sourcing and optimization (see the picture below). Specifically, it consists of planning, building and running the value streams with a common strategy, governance, sourcing and optimization.

Capability Model
The Business Technology Standard capability model defines five disciplines and 28 related capabilities in the form of a standardized framework. The framework consists of four horizontal disciplines (strategy and governance, sourcing and optimization, development and services) and a vertical demand discipline intersecting with the other four disciplines. The demand discipline defines strategy-to-plans capabilities, while the other four disciplines define capabilities for plans-to-capability and plans-to-benefits progress flows. The outcome-to-insights is a progress flow closing the loop and providing input back to the demand.

Roles and Responsibilities Model
The Business Technology Standard roles and responsibilities define over 70 standardized roles with the related accountability and contribution to capabilities.

The roles are split into five career identities each defining passion, mission and key measurements. In agile terms, the identities can be described as tribes consisting of people with a similar type of passion and competence and sharing best practices and experiences.

The roles in Business Technology Standard fall into three categories: **owners** who ensure the business value, **implementers** who deliver the outcome for business value, and **orchestrators** who create the capability to deliver the value.

Hertz Case Study:

Challenge:

- To better manage new construction and maintenance of rental car locations worldwide, Hertz needed to adopt an improved workplace technology and collaboration solution. The key processes for rental car locations include CapEx approval for new location construction and ongoing maintenance projects. However, these processes were made complex because of the way required information was stored and collaboration was organized. Documents, CapEx requests, their statuses, and other related information were scattered across Excel files and email chains. There was a need to automate these projects and CapEx approvals. With little standardization for sharing information and collaboration, Hertz business units used Excel files and nonstandardized processes. This fragmented approach to information sharing and inaccurate request routing needed to be improved in order to ensure lower operating expenses and capital risks, and increase overall business value

Approach:

- During the initial planning stage, Hertz recognized that it needed to implement a system that would ensure single work environment for employees, processes and data, and allow for workflow collaboration and automation. The company needed flexible solution to ensure consistent expense request processes across the company. This approach would allow for better accuracy, transparency and efficiency of processes.
- “We had a number of separate Excel files that all served different business units within our finance and car locations management,“ said Hertz’s representative. “In order to improve capital productivity, we needed a way to access all projects in a single place and ensure flexible solution for all field employees”.

- Hertz chose Comindware Tracker, a low-code workflow software by Comindware, to unify the management of data, ensure consistent workflows and improve collaboration throughout the company. Hertz chose cloud delivery of Comindware's product not only for compliance to initial requirements and cost-effectivity, but also for Comindware Tracker's proven ease of implementation and use, flexibility, and integration with MS Outlook.

Solution:

- Using Comindware's powerful and intuitive low-code software, Hertz developed a workflow application to streamline CapEx approval processes across multiple divisions, as well as internal collaboration amongst company employees.
- The CapEx Approval application acts as a solution for fielding capital expenditure requests, and ensuring proper request routing according to purpose of the requested budget and its volume. Using Comindware Tracker's mobile capabilities, Hertz employees can easily submit expenditure request via a web form and keep track of approval progress from personal dashboard while discussing specific matters beyond or across the request and uploading additional files in a special comment thread integrated into the request form. When needed, workflows and web forms can be modified by non-technical users with drag-and-drop simplicity. By leveraging CapEx Approval app, Hertz employees distributed across multiple business units get capital expenditure requests approved at a much quicker rate. In addition, the CapEx Approval application handles key budgets and projects dates, making sure that projects are completed on time and within budget.
- Given the level of complexity in fragmented data storage, it was a challenge to capture all the existing data into a single environment and ensure data format consistency for further usage. Comindware came up with an idea of an algorithm to bridge the gap between Comindware Tracker and complex Excel spreadsheets, developed it, and ensured that solution implementation and adoption processes are as smooth as possible.
- According to Hertz's employees, Comindware helped accelerate their CapEx processes and improve collaboration throughout the company. They also highlight that as a bonus to these improvements it became dramatically easier to compile annual CapEx reports and on-demand expenditure reports by regions.

Results:

- Through the deployment of CapEx Approval application, Comindware

Tracker has connected Hertz employees across the company to the enterprise data, workflows, and social collaboration needed to best manage funding of their worldwide rental car locations. Within the first 2 months of operation Hertz saw tangible productivity gains and transparency of task flows thanks to a single application platform and scheduled to expand its usage of Comindware Tracker by rolling out a workflow app to manage lease renewal process for rental car locations across the world within the next quarter.

- By harnessing a workflow app methodology, global CapEx management processes have been automated to reduce the expenditure approval cycle time, decrease operational expenses and minimize financial risks. Enhanced solution visibility allows for quicker and more reliable access to CapEx data throughout the company, easily identifying gaps and errors that can be proactively addressed.
- Success with resolving CapEx management challenge inspired Hertz to develop the next great solution to address one more of their toughest challenges - management of 9,700 real estate facilities. Real Estate Management application based on Comindware Tracker got up and running within days and acts as a solution for onboarding new estate property. It automates and streamlines handling of requests for leasing new buildings, such as garages, carports, car rental locations, etc., managing lease expenses and profit potential, and more.
- Hertz executives note that the use of Comindware Tracker has already been showing huge benefits even just a few months after the deployment of the solution and they hope to continue extending the usage of Comindware's product and service.

More about Comidware:

- Comindware delivers innovative Business Operations Management solutions enabling performance and efficiency optimization. Powered by award-winning Elastic Data technology, change-oriented workflow engine, and advanced social collaboration capabilities, Comindware's low-code product subtly reinforces the orientation towards business users versus IT dependency. Even more, Comindware Tracker provides full personalization of the user interface, flexible and open integration with enterprise applications and supports both Cloud and on-premise https://www.comindware.com/?utm_source=whitepaper&utm_medium=case&