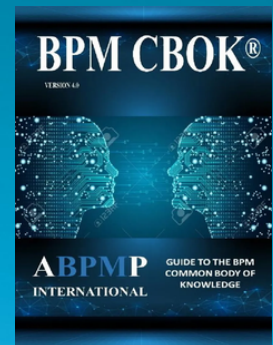
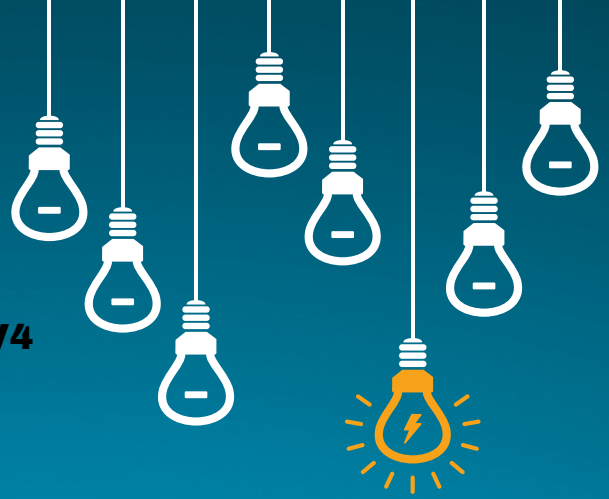


NEXUS NUGGET NOTES OF BPM CBOK® V4



CBPP® AND CBPA® TUTORIAL

**A SIMPLIFIER TO OBTAIN BPM INTERNATIONAL
CERTIFICATIONS**



Collector: Aboozar Kordi

ABPMP [CBPP®], NCMA [CPCM®], IIBA [CBAP®, CBDA®, AAC®, CPOA®, CCA®], PMI [PBA®, ACP®, PMP®]



Nexus Nugget Notes

CBPP® and CBPA® Tutorial

A simplifier to obtain BPM international Certifications

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Preface:

This collection is a summary of the body of knowledge of BPM CBOK 4th edition that can help those interested to review its contents and important points for themselves.

This collection can be seen as a flash card that covers the key and important points of the standard that can be asked.

You can first read the above body of knowledge in full and later refer to this book as an overview.

You can refer to the following tests to strengthen your knowledge:

<https://www.udemy.com/course/6-abpmp-cbpp-cloned-final-exam-tests/learn/>



Introduction



Nexus Nugget Notes

Principles of BPM CBOK Guide Development

<i>BPM CBOK Guide</i> Should (Be)	<i>BPM CBOK Guide</i> Should Not (Be)
• Use a standardized terminology • Ease the communication about BPM • Support a common understanding of BPM • Reference related disciplines • Contain commonly accepted practices • Practitioner driven • Vendor neutral • Guide (non-prescriptive) • Not a standard setting body • Facilitate evaluation of solutions • Consistent	• Sell anything (not vendor driven) • Redefine other disciplines • Too detailed • Miss the audience (practitioner) • Incomplete in width • <i>How to</i> (recipe) • Hard to read • Have an opinion

The BPM Competency Model

Equivalent Business Title	Process Analyst	Process Architect	Chief Process Architect
Primary Responsibilities	Entry Level	Middle Manager	Senior Leader
Background			
Education/ Certification	Bachelors/ CBPA®	Bachelors and/or Masters/ CBPP®	Masters/ CBPL™
Work Experience	<1 year	>4, <10 years	>10 years
Business Process Management Competencies			
Process Modeling, Analysis & Design (New Solution Design)	Beginner	Intermediate	Advanced
	<1 Methodology	2 or less Methodologies	>2 Methodologies
Process Methodology Process Measurement & Management (Performance Measurement)	Basic identification & Measurement	Benchmarking	Advanced Benchmarking and Integration into Corporate Strategy
Change Management & Facilitation	Beginner	Intermediate	Advanced
Technology	<1 Implementation, Any technology	<5 Implementations, Any Technology	>5 Implementations, Any Technology
General Business Competencies			
Individual and Leadership Behavior	Participates on Team	Participates and Leads Small to Medium Size Teams	Leads Large Teams
Solutions Delivery	Participates on Team	Participates and Leads Small to Medium Size Teams	Leads Large Teams
Business & Financial IQ	ROI	Benchmarking & ROI	Benchmarking, ROI, Corporate Scorecard



Certification Levels with Eligibility Requirements

	Process Analyst		Process Architect		Chief Process Architect
Credential	Certified Business Process Associate (CBPA®)	Credential	Certified Business Process Professional (CBPP®)	Credential	Certified Business Process Leader - CBPL™
Eligibility Requirements	1250 hours documented Working Experience in a Business Process related area OR qualifying 4 year university degree Complete Application Pass Examination Sign ABPMP Code of Ethics	Eligibility Requirements	4 years Business Process Experience May substitute half year credit for: Advanced Degree Approved Certifications such as the PMP or CPIM	Eligibility Requirements	10 years minimum Business Process Experience 5 years of Business Transformation Project Management A CBPP certification - also - 6 months credit for an Advanced Degree & Approved Industry Certifications e.g. Lean, PMP®, CBA®
Steps to Obtaining Credential	90 multiple choice questions answered within 2 hours	Steps to Obtaining Credential	Complete Application Pass Examination Abide by ABPMP Code of Ethics	Steps to Obtaining Credential	Application Process & Multiple Choice Exam
Re-certification	3 year cycle; 30 Continuing Professional Education Hours	Exam Information	130 multiple choice questions	Exam Information	3 hours; 130 questions
Standard Fees	Application Fee: USD \$40/€30 Exam Fee: USD \$400/€350 discount available for current ABPMP International professional members Re-certification Fee USD \$75/€60	Re-certification	3 hours 3 year cycles; 60 Continuing Education Hours	Credential Maintenance	3 years; 60 CE Credits
		Fees	Application Fee \$75 Exam Fee Members \$500 Non-Members \$650		

There are three BPM Certifications: CBPA, CBPP, and CBPL.

CBPA. The *Certified Business Process Associate* certificate is for new BPM practitioners.

- Those who have completed (or are in process of completing) an undergraduate degree or who have worked in a Business Process Management role for at least one year are eligible to sit for the exam.
- The exam demonstrates an understanding of business process improvement and transformation concepts across the disciplines covered by the *BPM CBOK Guide*.
- The CBPA certification allows those new to the profession to demonstrate their understanding of the concepts, approaches, techniques, and technologies needed to succeed in BPM and helps them stand out among their peers.

CBPP. The *Certified Business Process Professional* certificate is for individuals who are experienced BPM practitioners and requires a minimum of four years of BPM work. It is a pre-requisite for pursuing the Certified Business Process Leader (CBPL) certificate.



CBPL. The *Certified Business Process Leader* certificate is focused on practitioners in leadership and requires a minimum of ten years of experience.

- Those seeking this level should have experience in enterprise-level business process change that includes at least one major cross-functional process.

BPM CBOK® Philosophy

- ▶ This *BPM CBOK Guide* provides a basic reference for BPM practitioners.
- ▶ The primary purpose of the *BPM CBOK Guide* is to define the profession of Business Process Management and to identify and provide an overview of the *knowledge areas* that are generally recognized and accepted as good practice.
- ▶ It includes roles and organizational structures, as well as provisions to steer a process-driven organization.
- ▶ The guide provides a general overview of each knowledge area and a list of common activities and tasks associated with each knowledge area.
- ▶ It aims to increase capabilities of BPM Professionals so they can develop and guide process-driven business strategy for their organizations, supported by enabling BPM technologies, which leads to the success of the businesses.
- ▶ One purpose of the *BPM CBOK Guide* is to encourage the use of a common, agreed-upon vocabulary for the BPM discipline.

What Is a Body of Knowledge?

- ▶ A *body of knowledge* is a collection of all the available knowledge on a topic or all the published material on a subject.
- ▶ This definition of *corpus* (also called body of knowledge) comes from businessdictionary.com.
- ▶ For the purposes of BPM, we adapt the definition to: *A collection of all the available knowledge on the currently accepted practices of a topic, including all the published material on the subject.*

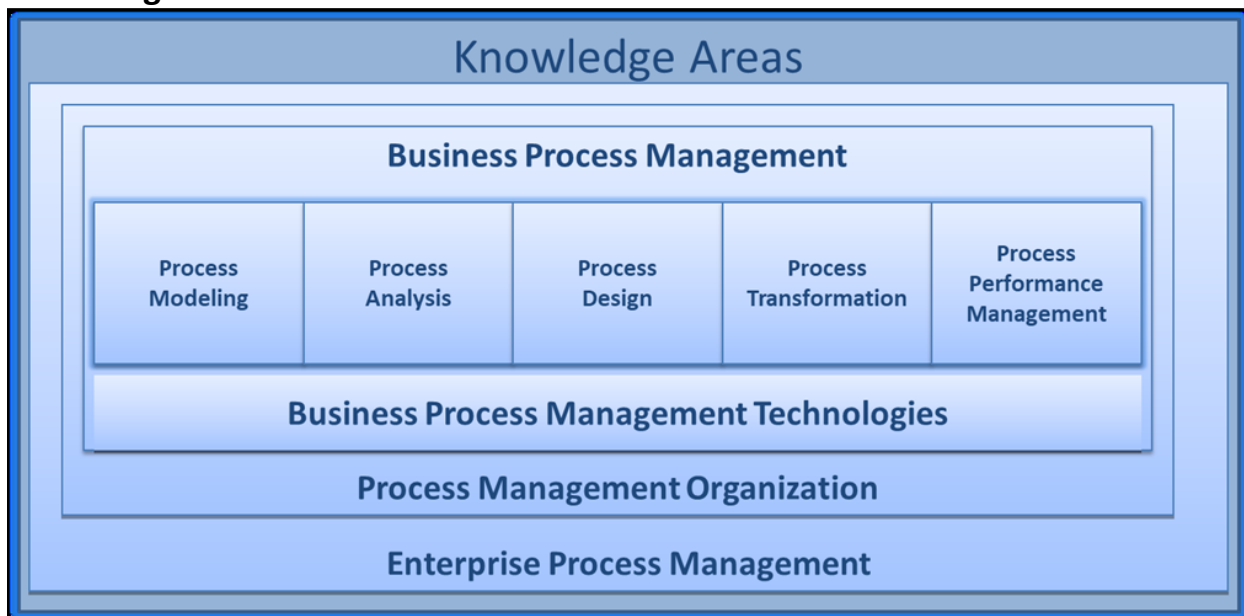
Business Process Management



Nexus Nugget Notes

- ▶ The Business Process Management chapter focuses on the concepts of BPM, such as key definitions, end-to-end processes, customer value, and the nature of cross-functional work.
- ▶ Process types, process components, the BPM life cycle, along with critical skills and success factors are introduced and explored.
- ▶ This section defines BPM and provides the foundation for exploring the core knowledge areas of BPM.

Knowledge Areas of the BPM CBOK



Process Modeling

- ▶ *Process modeling* includes a critical set of skills and processes that enable people to understand, communicate, measure, and manage the primary components of business processes.
- ▶ The Process Modeling Core Area provides an overview of these skills, activities, and key definitions, along with an explanation of the purpose and benefits of process modeling, a discussion of the types and uses of process models, and the tools, techniques, and modeling standards.
- ▶ As of Version 4, the concept of a *process repository* is included and referenced in other chapters as appropriate.

Process Analysis



Nexus Nugget Notes

- ▶ Process analysis involves a systematic review and an in-depth examination of business processes, including the efficiency and effectiveness of business processes.
- ▶ This chapter explores process analysis purpose, activities to support process decomposition, and analytical frameworks.
- ▶ It covers the roles, scope, business context, rules, and performance metrics that make up process analysis.
- ▶ The focus is on understanding current-state processes with a view to achieving improvements in the future state.
- ▶ A variety of process analysis types, tools, and techniques are included within this knowledge area.

Process Design

- ▶ Process design involves creating the future state or design for business processes within the context of the organizational strategy and linking process performance objectives to the strategy and goals.
- ▶ It provides the plans and guidelines for how work processes flow, how rules are applied, simulation of the future state, process compliance, and operational controls.
- ▶ The value of process design is discussed along with planning for how business processes function and are measured, governed, and managed.
- ▶ This knowledge area explores process design roles, techniques, and principles of good design.
- ▶ The chapter also explores common process design patterns and considerations such as compliance, executive leadership, and strategic alignment.

Process Performance Measurement

- ▶ Process performance measurement is the formal, planned monitoring of process execution and the tracking of results to determine the effectiveness and efficiency of the process.
- ▶ This information is used to make decisions for improving or retiring existing processes and/or introducing new processes in order to meet the strategic objectives of the organization.
- ▶ Topics covered include the importance and benefits of performance measurement, key process performance definitions, monitoring and



Nexus Nugget Notes

controlling operations, alignment of business processes and enterprise performance, what to measure, process and measurement methods and frameworks, modeling and simulation, decision support for Process Owners and managers, and considerations for success.

Business Process Transformation

- ▶ *Process transformation* emphasizes that the BPM life cycle, including business and/or digital transformation, begins with strategy and cascades down to execution.
- ▶ The chapter also addresses change management associated with these transformations.
- ▶ Process changes are discussed in the context of the BPM life cycle from planning to implementation.
- ▶ Various process improvement, redesign, and reengineering methodologies are explored, along with the tasks associated with *construction*, quality control, and the introduction and evaluation of new processes.
- ▶ The topic of organizational change management, including change management best practices for transformation are also addressed.

Technology and Transformation

- ▶ The technology and transformation knowledge area covers enterprise technologies that support organizational business transformation.
- ▶ Enterprise technologies, including BPM, enable business and digital transformation.
- ▶ BPM is a technology-enabled and technology-supported management discipline.
- ▶ Integrated Business Process Management Suites (iBPMS), process repositories, and cloud-based platforms for modeling, analysis, design, execution, and monitoring are discussed. BPM standards, methodologies, and emerging trends are also covered.
- ▶ As of Version 4, robotic process automation (RPA), blockchain, artificial intelligence, machine learning, and Internet of things (IoT) are included in this chapter.

Process Management Organization and Culture



Nexus Nugget Notes

- ▶ The process management organization knowledge area addresses the roles, responsibilities, and reporting structure to support process-driven organizations.
- ▶ The chapter includes a discussion of what defines a process-driven enterprise, along with cultural considerations and cross-functional, team-based performance.
- ▶ The importance of business process governance is explored, along with a variety of governance structures and the notion of a BPM Center of Excellence (CoE).
- ▶ As of Version 4, the role of collaboration in BPM is included here and referenced in other chapters.

Enterprise Process Management

- ▶ Enterprise Process Management is driven by the need to maximize the results of business processes consistent with well-defined business strategies and functional goals based on these strategies.
- ▶ Process portfolio management ensures that the process portfolio supports corporate or business-unit strategies and provides a method to manage and evaluate initiatives.
- ▶ The Enterprise Process Management knowledge area identifies tools and methods to assess process management maturity levels, along with required BPM practice areas that can improve a BPM organization state.
- ▶ Several business process frameworks are discussed, along with the notion of process integration — that is, interaction of various processes with each other and with models that tie performance, goals, technologies, people, and controls (both financial and operational) to business strategy and performance objectives.
- ▶ The topics of process architecture and best practices in Enterprise Process Management are explored.

Business Process Management (BPM)

- ▶ Business Process Management (BPM) is a disciplined management approach to identify, design, execute, document, measure, monitor, and control both automated and non-automated business processes to achieve consistent, targeted results aligned with an organization's strategic goals.



Nexus Nugget Notes

- ▶ BPM involves the deliberate, collaborative and increasingly technology-aided definition, improvement, innovation, and management of end-to-end business processes that drive business results, create value for customers, and enable an organization to meet its business objectives with more agility.

Scope of BPM Initiatives

Business Process Management (BPM) Scope		
Business Process Improvement	Enterprise Process Management	Continuous Improvement
Singular initiative (project driven) • Selection, Analysis • Design and Implementation of a particular process in order to improve the alignment and performance	• Application of BPM Principles and Methods to cross functional processes aligning to strategy • Includes governance, portfolio and architecture management	Sustained feedback control system to monitor performance of processes
Applied methods: • BPM Life Cycle • Lean Six Sigma • TQM • Process Engineering • Performance improvement • ABC	Process Management Maturity Level assessment and management to achieve standard level of a process managed organization and process maturity	

Business process improvement (BPI)

- ▶ Business process improvement (BPI) is a singular initiative or project to improve the alignment and performance of a particular process with the organizational strategy and customer expectations.
- ▶ BPI includes the selection, analysis, design, and implementation of the (improved) process.

Enterprise Process Management (EPM)

- ▶ Enterprise Process Management (EPM) is the application of BPM principles, methods, and processes to an individual enterprise.
- ▶ EPM (a) assures the alignment of the portfolio and architecture of end-to-end processes with the organization's strategy and resources and (b) provides a governance model for the management and evaluation of BPM initiatives.

Business process continuous improvement



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- ▶ **Business process continuous improvement** is the sustained approach to monitor process performance to ensure processes are more efficient and effective by applying a concurrent and responsive feedback control system.
- ▶ **Continuous process improvement** is an approach in which BPM practitioners continuously evaluate the performance of the business processes, and if the results fall below expectations, start the BPM life cycle again.

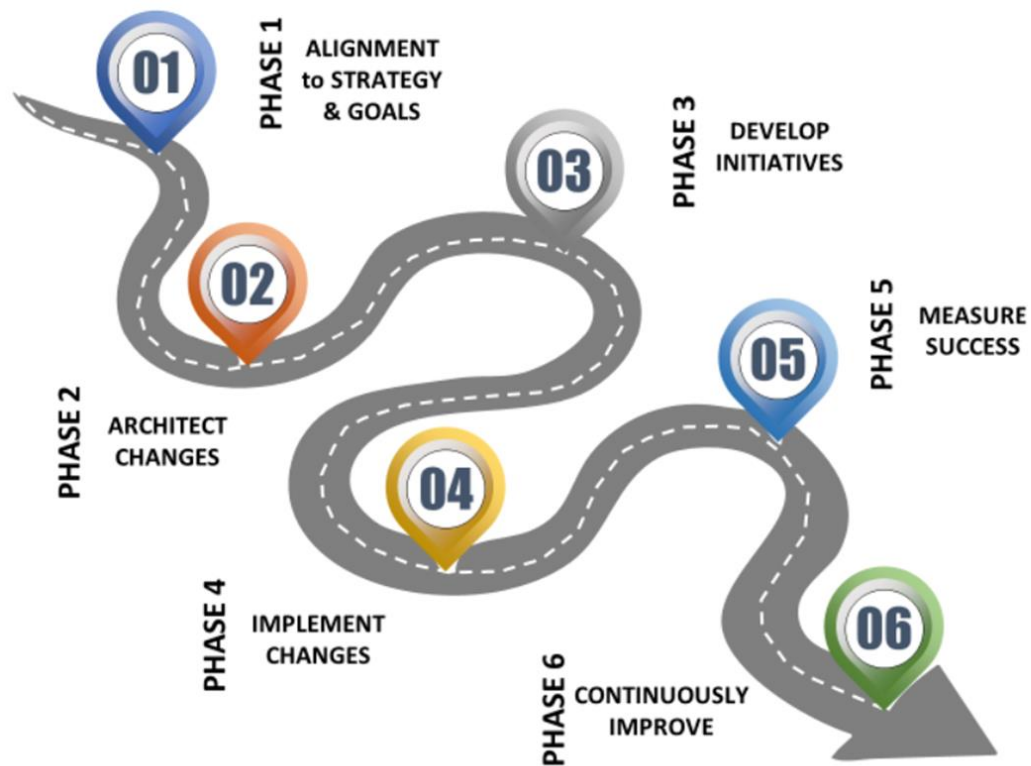
Core Principles of Business Process Management

- ▶ • Business change is a performance-driven management discipline
- ▶ • Business change must involve all relevant stakeholders involved in the process
- ▶ • Business process change must be approached from the outside in (customer-driven)
- ▶ • Business processes must be managed holistically within any organization
- ▶ • Business change must be linked to the stakeholder criteria
- ▶ • Business process change must be aligned to the corporate strategy and the goals of the operational plan metrics
- ▶ • The organization must segment the primary, cross-functional processes that deliver value to the customer
- ▶ • Business change is about people as much as process
- ▶ • Business Process Management is a journey, not a destination
- ▶ • Business processes must be managed continuously in a life cycle model



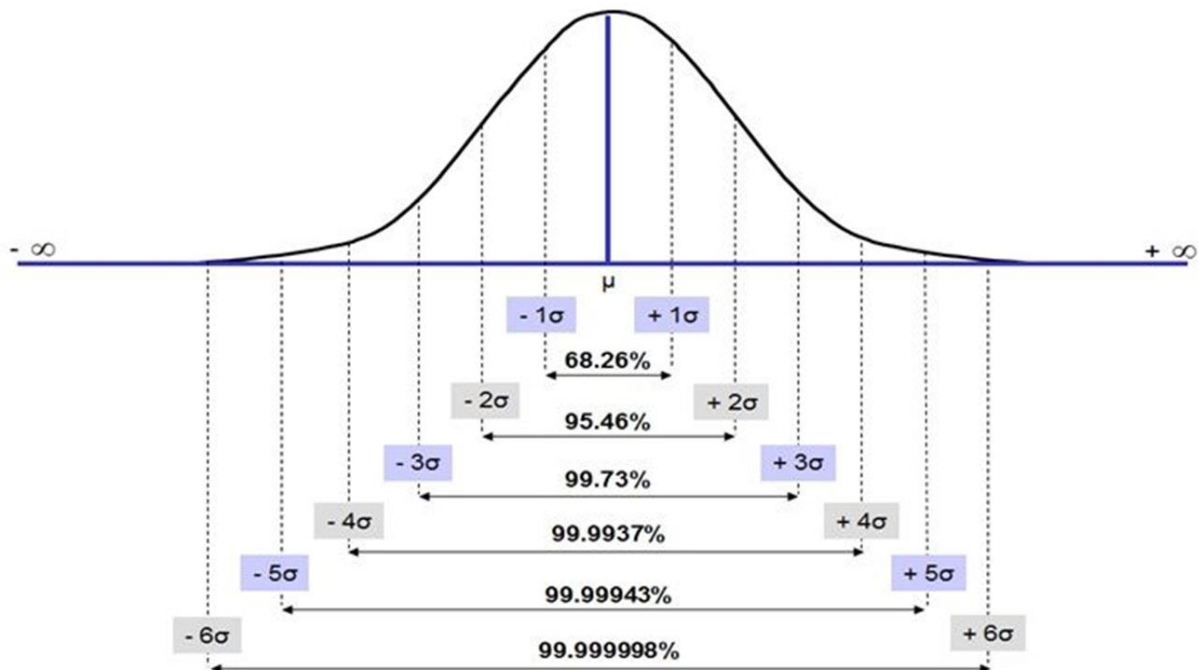
DIGITAL TRANSFORMATION ROADMAP

For the Customer Journey



6 Sigma Method

- ▶ Six Sigma (6σ) is a set of techniques and tools for process improvement. It was introduced by American engineer Bill Smith while working at Motorola in 1986.
- ▶ Six Sigma strategies seek to improve manufacturing quality by identifying and removing the causes of defects and minimizing variability in manufacturing and business processes.
- ▶ Each Six Sigma project follows a defined methodology and has specific value targets, such as reducing pollution or increasing customer satisfaction.
- ▶ The term *Six Sigma* originates from statistical quality control, a reference to the fraction of a normal curve that lies within six standard deviations of the mean, used to represent a defect rate.



Lean Method

- Different types of waste have been defined in the form of a mnemonic of "downtime":



Lean 6 Sigma Method

- ▶ Lean Six Sigma is a process improvement approach that uses a collaborative team effort to improve performance by systematically removing operational waste and reducing process variation.
- ▶ It combines Lean Management and Six Sigma to increase the velocity of value creation in business processes.

TQM

- ▶ **Total quality management (TQM)** is an organization-wide effort to "install and make a permanent climate where employees continuously improve their ability to provide on-demand products and services that customers will find of particular value."
- ▶ *Total* emphasizes that departments in addition to production (for example sales and marketing, accounting and finance, engineering and design) are



Nexus Nugget Notes

obligated to improve their operations; *management* emphasizes that executives are obligated to actively manage quality through funding, training, staffing, and goal setting.

- ▶ While there is no widely agreed-upon approach, TQM efforts typically draw heavily on the previously developed tools and techniques of quality control.
- ▶ TQM enjoyed widespread attention during the late 1980s and early 1990s before being overshadowed by ISO 9000, Lean manufacturing, and Six Sigma.

The BPM Life Cycle Framework

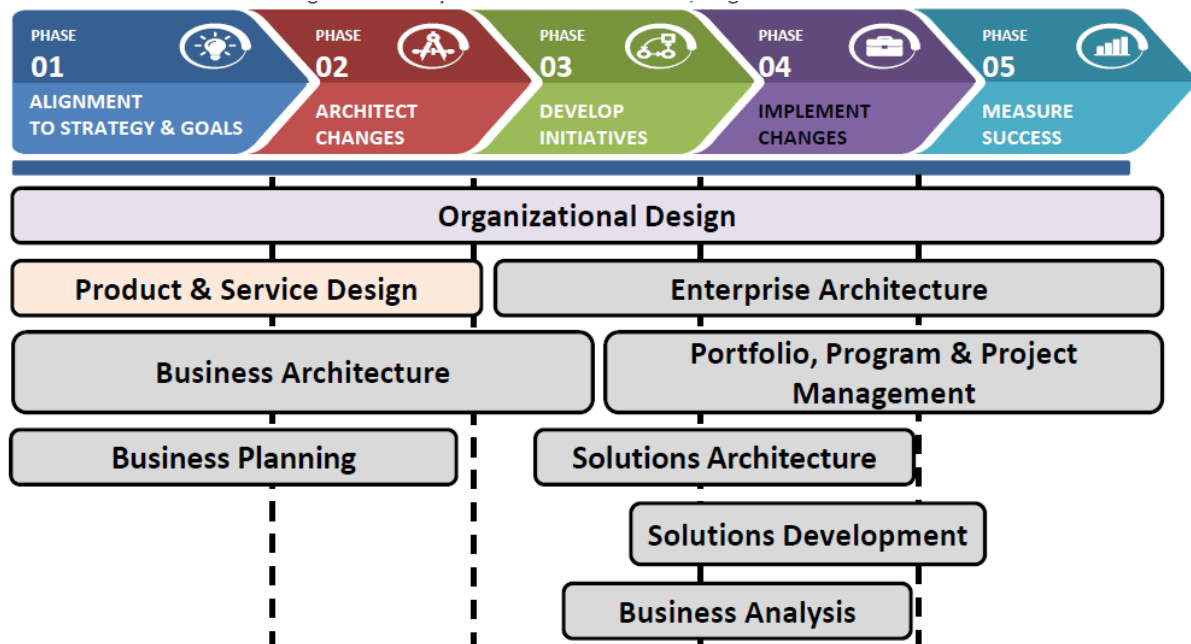


- ▶ Starts with BPM Life Cycle Model Framework and explains each Phase
- ▶ Strategy to Execution content to show scope and breadth of change
- ▶ Introduce Process Organization early (instead of later)
- ❖ –Phase 1: New section that focuses on aligning Process to Strategy and Goals
- ❖ –Phase 2: Process Modeling, Process Analysis, Process Design, Process Performance Measurement, Business Process Transformation, Technology and Transformation
- ❖ –Phase 3: Process Transformation, Process Organization
- ❖ –Phase 4: This is new section based on BPM Life Cycle and covers Organizational Design, Job training, Technology go-live and stabilization
- ❖ –Phase 5: Enterprise Process Management

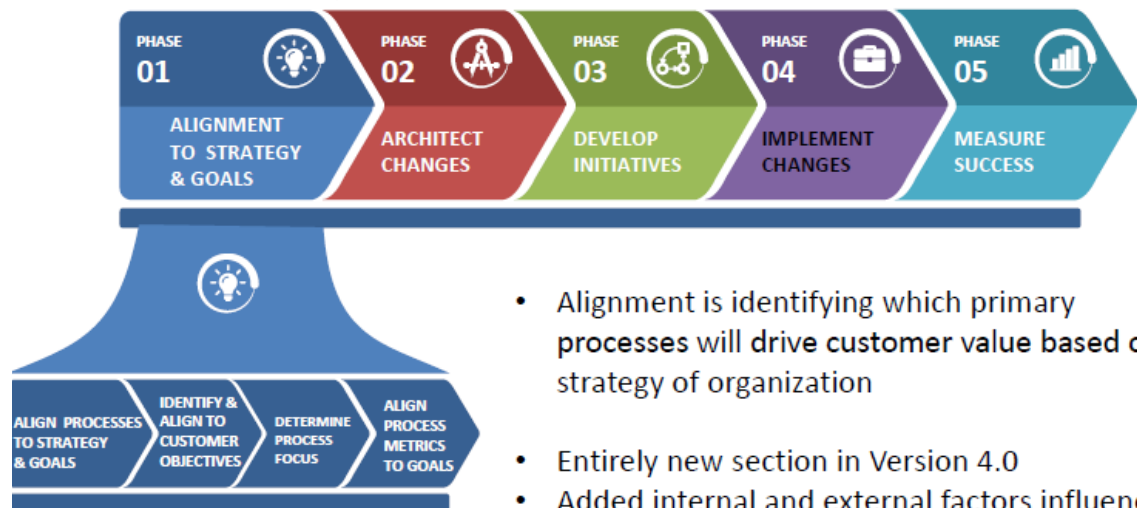
Business Knowledge in BPM Lifecycle



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Phase 1 in BPM Lifecycle

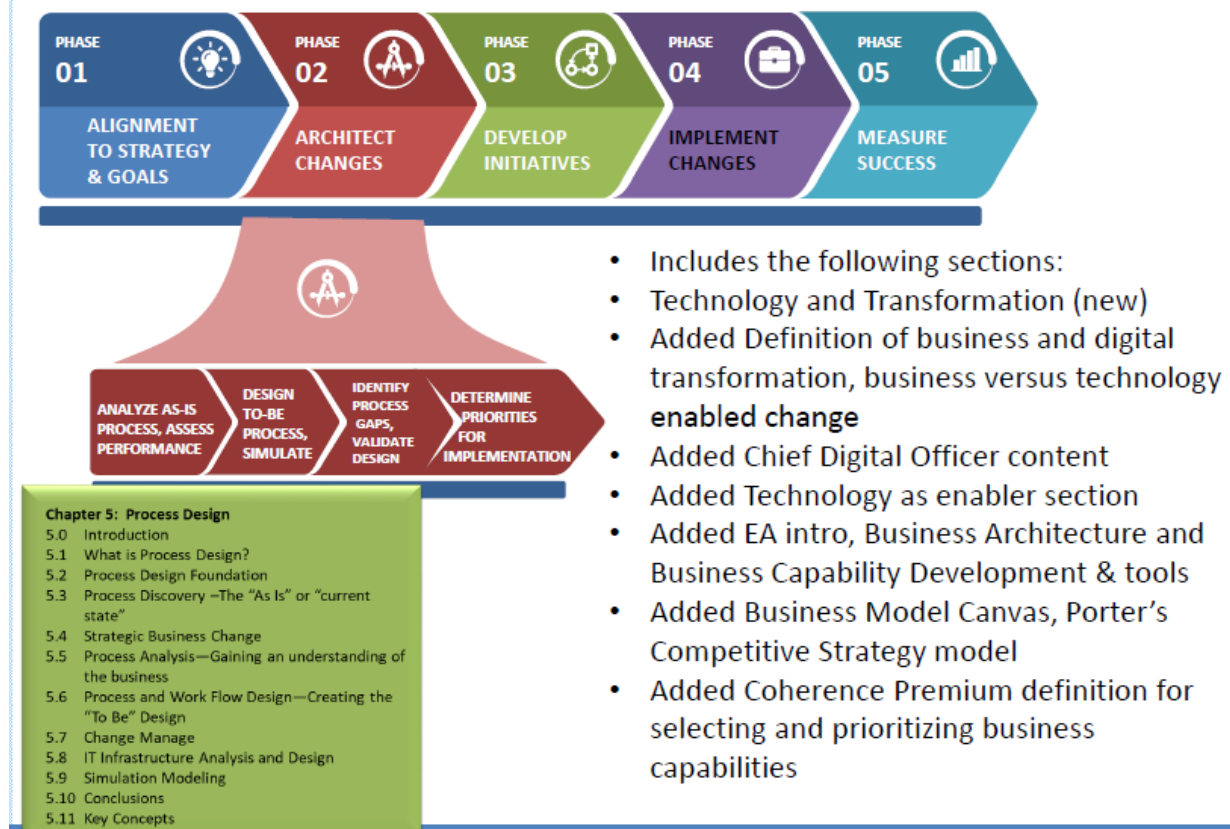
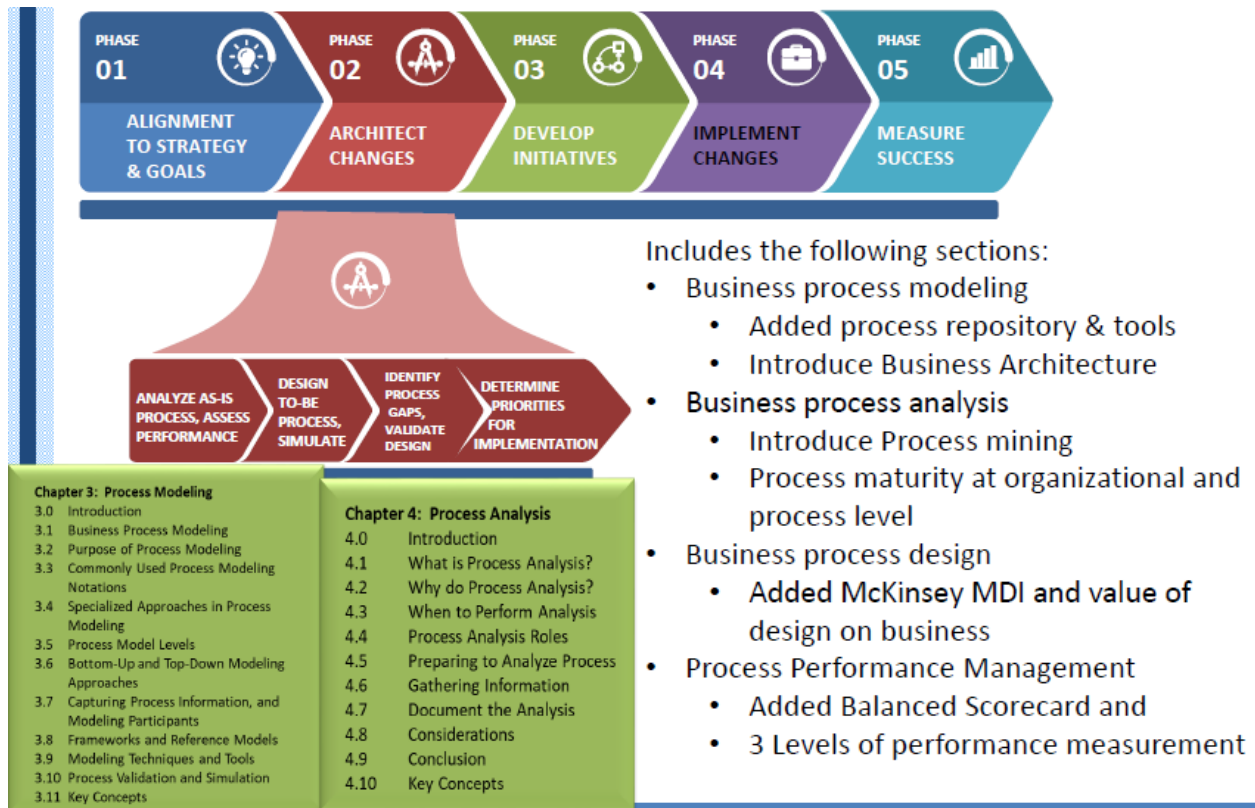


- Alignment is identifying which primary processes will drive customer value based on strategy of organization
- Entirely new section in Version 4.0
- Added internal and external factors influencing business change
- Internal: Bring in Porter's Value Chain model and Strategy Maps for aligning Strategy
- External: Bring in Porter's 5 Forces and SWOT models for aligning Strategy

Phase 2 in BPM Lifecycle

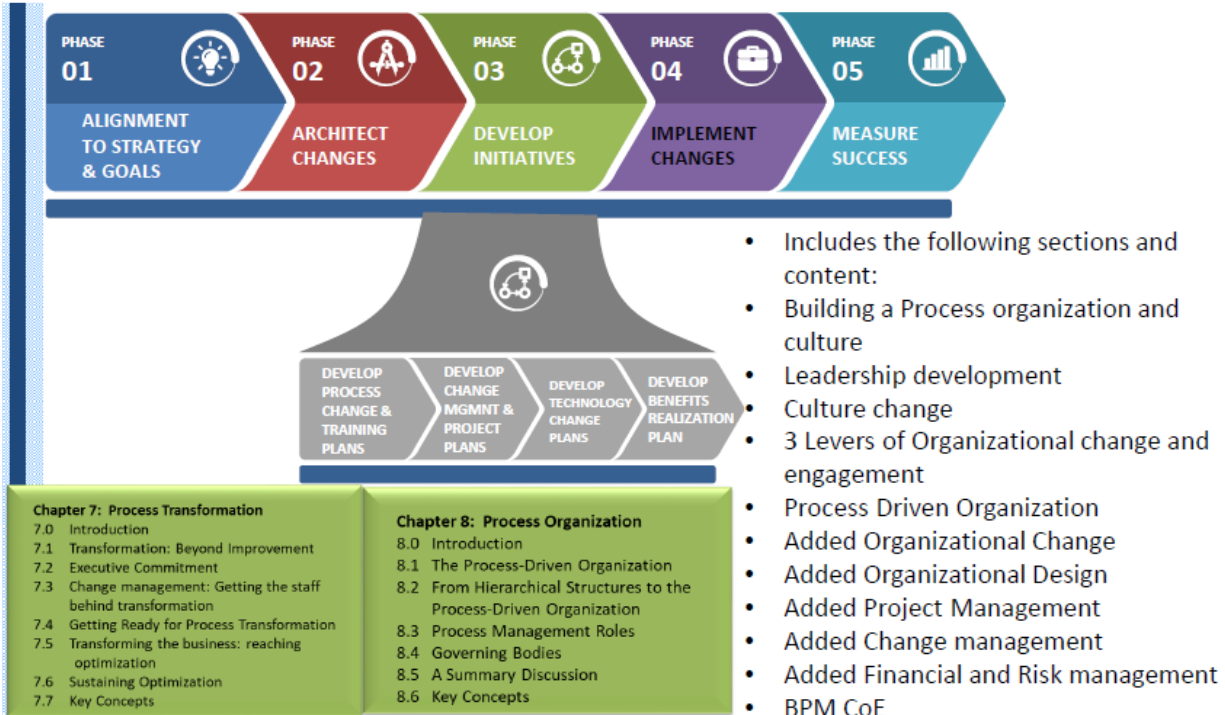


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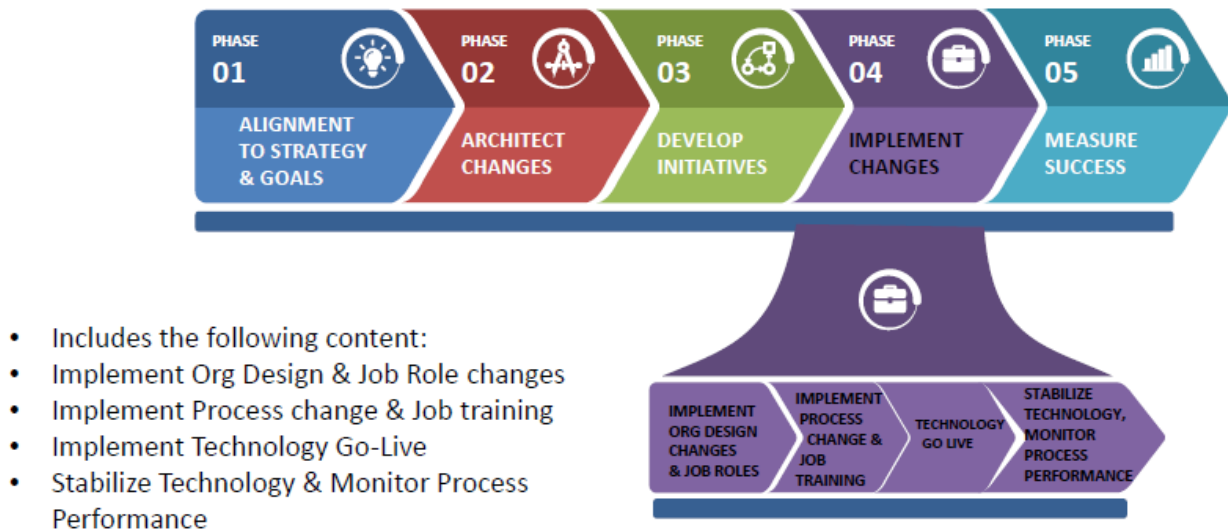




Phase 3 in BPM Lifecycle



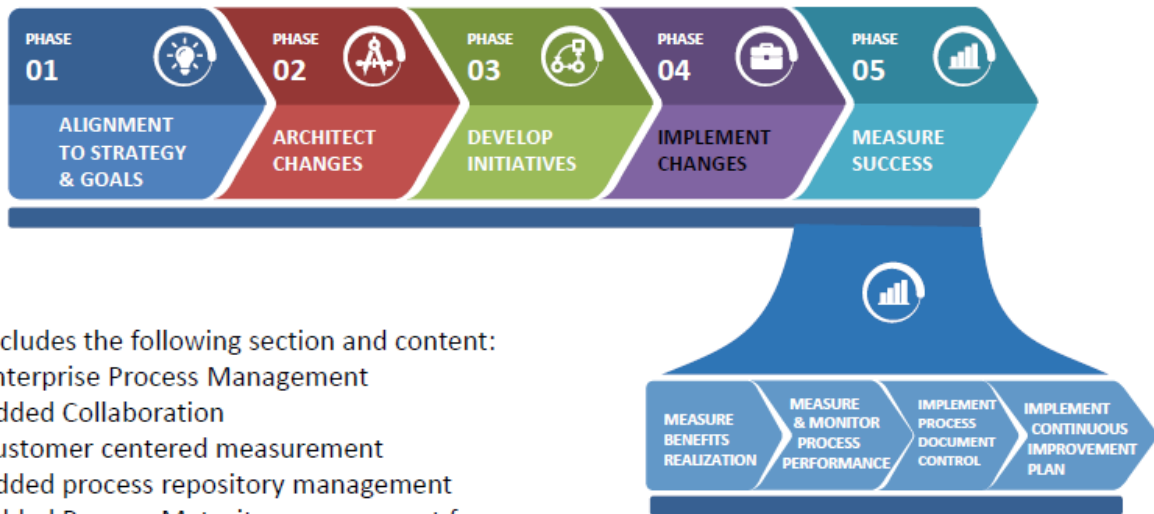
Phase 4 in BPM Lifecycle



Phase 5 in BPM Lifecycle



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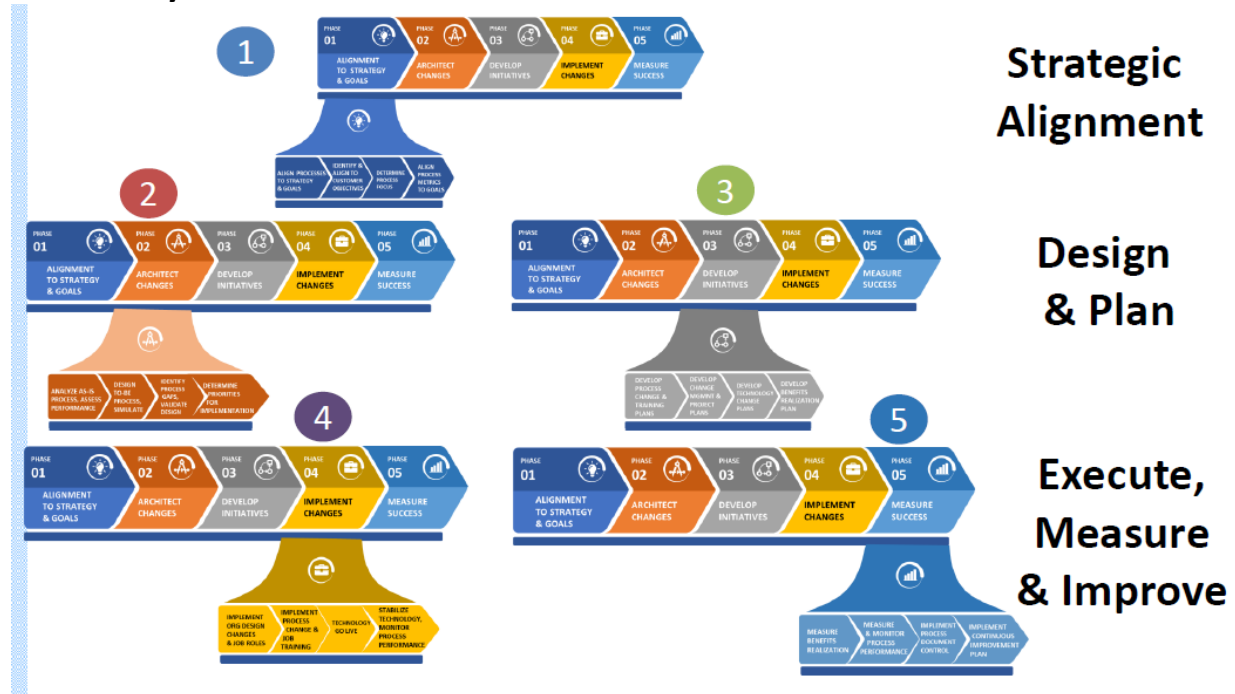


- Includes the following section and content:
- Enterprise Process Management
- Added Collaboration
- Customer centered measurement
- Added process repository management
- Added Process Maturity measurement for organization and process
- Added Benefits realization and Balanced Scorecard
- Added content on transformation as a journey not destination

Chapter 9: Enterprise Process Management

- 9.0 Introduction
- 9.1 Transitioning to Enterprise Process Management
- 9.2 Current state: Assessing Process Maturity
- 9.3 Process Enablement
- 9.4 Process Governance
- 9.5 Business Process Management Roadmap
- 9.6 Process Management Center of Excellence
- 9.7 BPM Integration in Support of Process Management

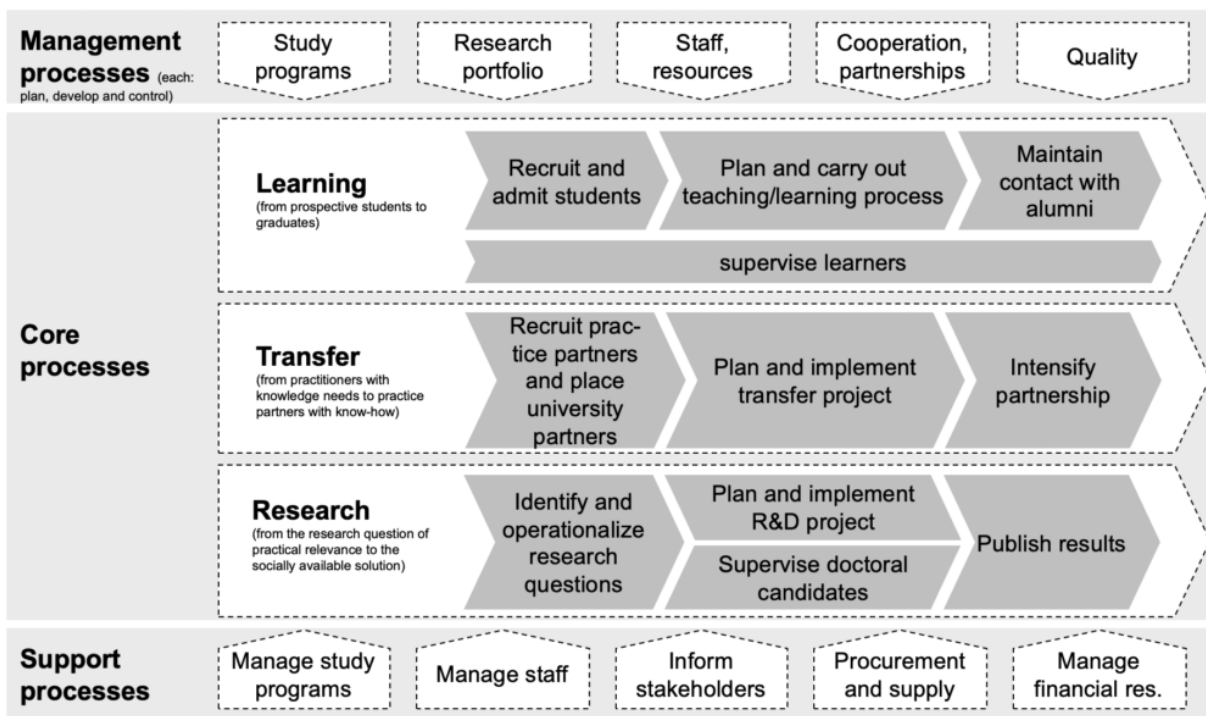
BPM Lifecycle Classification





Types of Processes

- ▶ There are 3 different types of end-to-end business processes:
 - ❑ Primary processes (often referred to as core processes) – 20%
 - ❑ Support processes – 70%
 - ❑ Management processes – 10%



Primary Processes

- ▶ Primary processes are end-to-end, cross-functional processes that directly deliver value to customers.
- ▶ These processes make up a value chain, where each step adds value to the preceding step as measured by its contribution to the creation or delivery of a product or service, ultimately delivering value to customers.
- ▶ The enterprise-wide business process value chain is a way of looking at the chain of activities (processes) that provides value to the customer.

Support Processes

- ▶ Support processes are designed to support primary processes, often by managing resources and/or infrastructure required by primary processes.



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- ▶ The primary difference between support and primary processes is that support processes do not directly deliver value to customers, while primary processes do.

Management Processes

- ▶ Management processes are used to measure, monitor, and control business activities.
- ▶ Management processes do not directly add value to customers, but are necessary in order to ensure the organization operates effectively and efficiently.



Types of Activities

- ▶ Value-adding activities are those that contribute to the process output in a positive way.
- ▶ Handoff activities pass control of the process to another department or organization.
- ▶ Control activities assure that the processes behave within desired tolerances.

Types of Activities - Example

- ▶ Product Design (Value-adding)
 - ☐ Create initial product concept
 - ☐ Develop detailed specifications
- ▶ Design Review (Control)
 - ☐ Evaluate design against quality standards
 - ☐ Approve or request revisions



Nexus Nugget Notes

- ▶ **Production Planning (Handoff)**
 - ☐ Transfer approved design to manufacturing team
- ▶ **Manufacturing (Value-adding)**
 - ☐ Source materials
 - ☐ Assemble product
- ▶ **Quality Control (Control)**
 - ☐ Inspect finished products
 - ☐ Identify and address any defects
- ▶ **Packaging (Value-adding)**
 - ☐ Package products for shipment
- ▶ **Logistics Handover (Handoff)**
 - ☐ Transfer packaged products to distribution team
- ▶ **Distribution (Value-adding)**
 - ☐ Ship products to retailers or customers
- ▶ **Customer Feedback Collection (Control)**
 - ☐ Gather and analyze customer reviews
 - ☐ Identify areas for improvement

Aligning Processes to Strategy and Goals

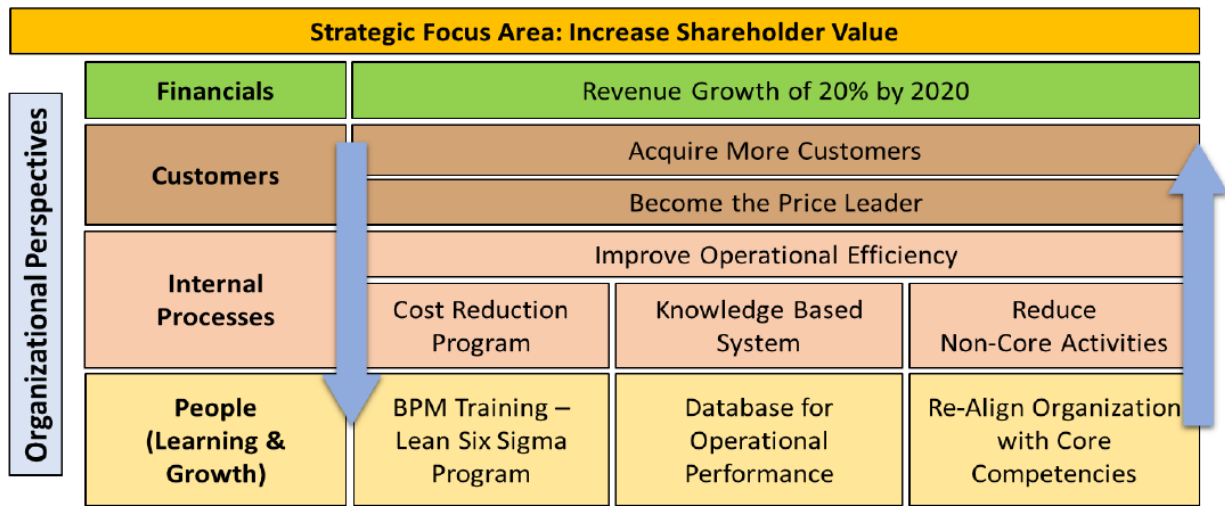
- ▶ Fortunately, there are several strategic analysis frameworks organizations can use to help develop relevant answers.
- ▶ There are internal and external drivers of business change and we will elaborate on two of the most commonly used, providing some examples using the airline industry.

Internal drivers

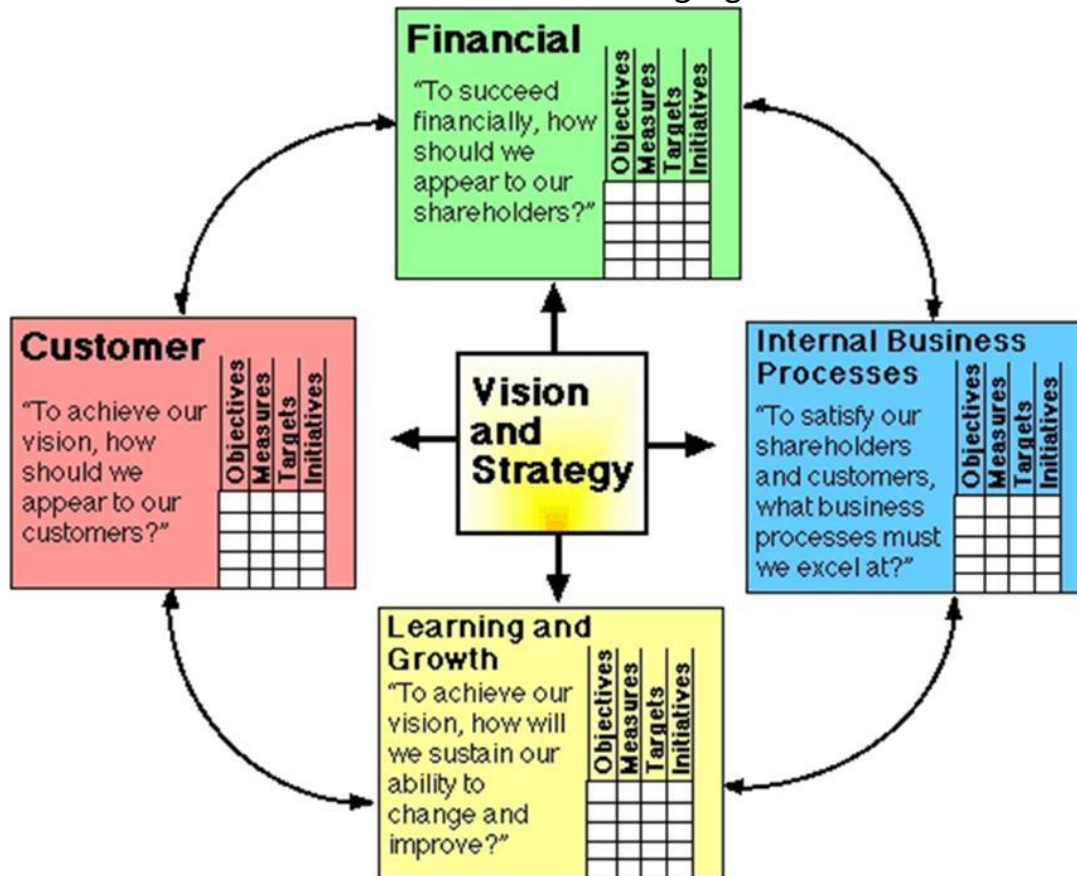
- ▶ Strategy Maps
- ▶ One technique is the strategy map, which is a diagram that shows your organization's strategy on a single page.
- ▶ The strategy map is usually associated with the *balanced scorecard*, which is a management system.
- ▶ While we won't go into detail about the balanced scorecard, the strategy map has been adapted to other frameworks, like Operational Excellence, for developing strategy.



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- Balanced Scorecard
- The balanced scorecard is a management tool that provides stakeholders with a comprehensive measure of how the organization is progressing towards the achievement of its strategic goals.



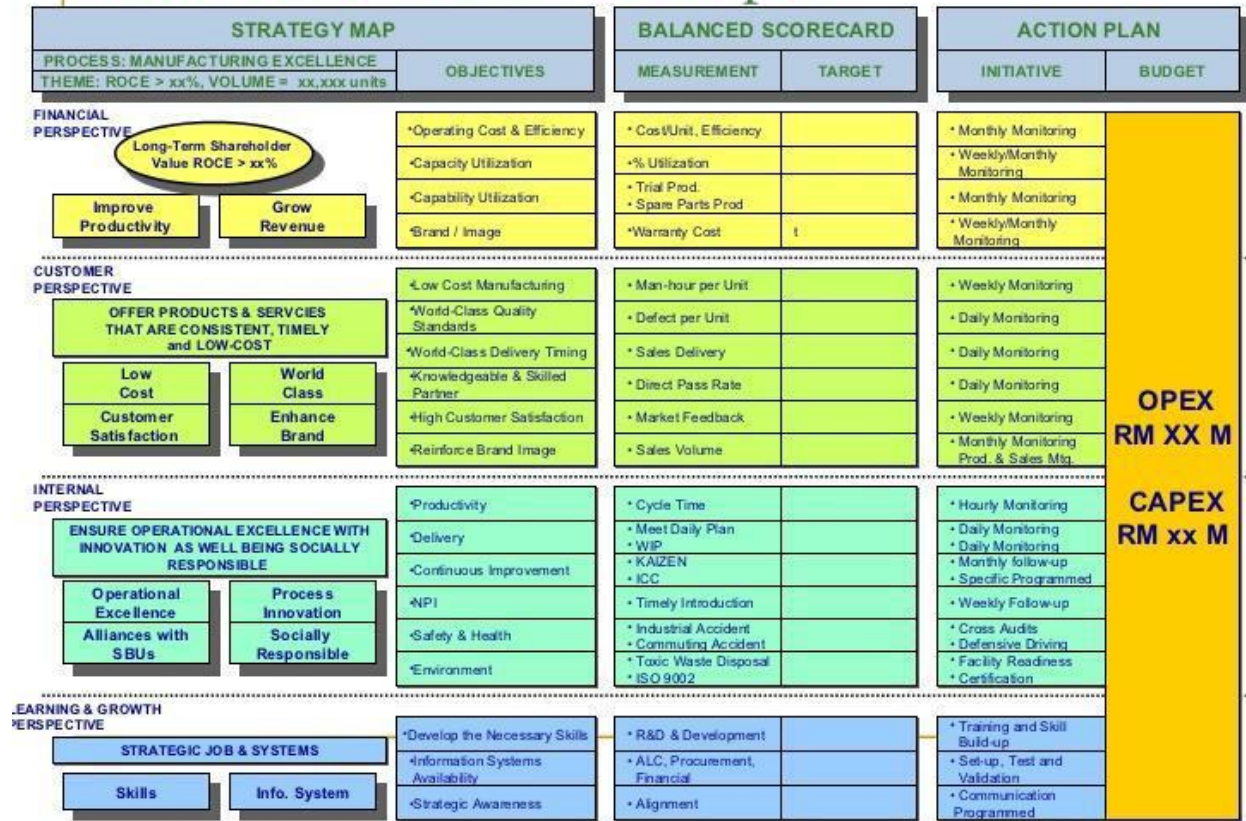


Nexus Nugget Notes

- ▶ A balanced scorecard is intended to:
 - ☐ Balance financial and non-financial measures
 - ☐ Balance short and long-term measures
 - ☐ Balance performance drivers (leading indicators) with outcome measures (lagging indicators)
 - ☐ Contain just enough data to give a complete picture of organizational performance... and no more!
 - ☐ Lead to strategic focus and organizational alignment
- ▶ The five principles of a balanced scorecard are:
 - ☐ (1) Translate the strategy to operational terms
 - ☐ (2) Align the organization to the strategy
 - ☐ (3) Make strategy everyone's job
 - ☐ (4) Make strategy a continual process
 - ☐ (5) Mobilize change through executive leadership
- ▶ **Strategy maps are a template for building out the full BSC.**



Balanced Scorecard Example

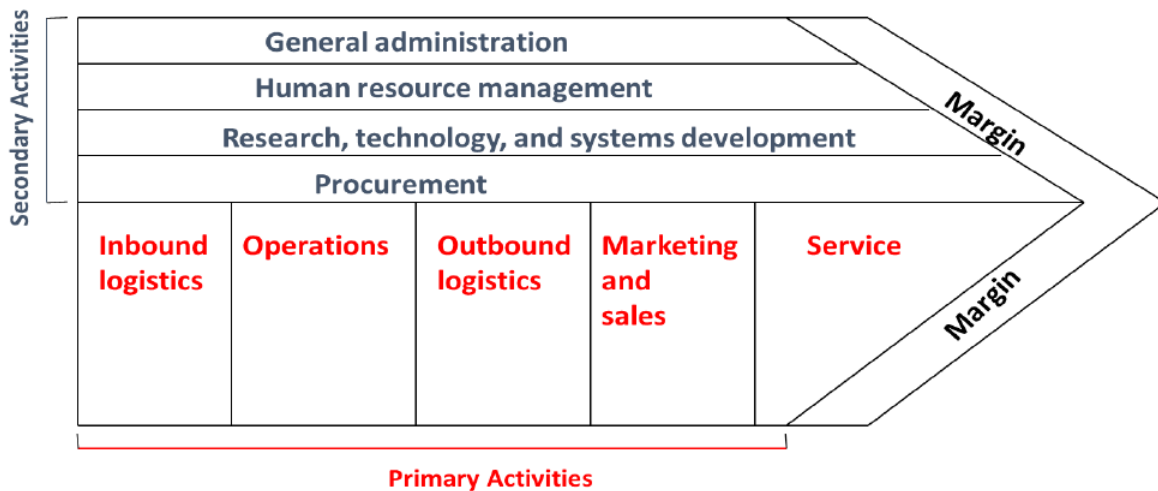


Porter's Value Chain Analysis

- ▶ Michael Porter introduced a generic value chain model that describes a sequence of five primary activities and several support activities that are common to most organizations.
- ▶ Since his introduction of these concepts, they have become adaptable to all organizations.



Nexus Nugget Notes



- ▶ • **Inbound logistics.** All activities required to receive, store, and disseminate inputs. Involves relationships with suppliers.
 - ▶ • **Operations.** All activities required to transform inputs into outputs.
 - ▶ • **Outbound logistics.** All activities required to collect, store, and distribute output.
 - ▶ • **Marketing and sales.** Activities that inform buyers about products and services, induce buyers to purchase them, and facilitate their purchase.
 - ▶ • **Service and support.** All activities required to keep the product or service working effectively for the buyer after it is sold and delivered
-
- ▶ • **Procurement.** Acquisition of inputs for the organization.
 - ▶ • **Human resource management.** All activities involved in recruiting, hiring, training, developing, compensating, and (if necessary) dismissing or laying off personnel.
 - ▶ • **Technological development.** Equipment, hardware, software, procedures, and technical knowledge brought to bear on transformation of inputs into outputs.
 - ▶ • **Infrastructure.** Serves the organization's needs and ties its parts together. Consists of functions or departments such as accounting, legal, finance, planning, public affairs, government relations, quality assurance, and general management.

External drivers



Porter's Five Forces



SWOT

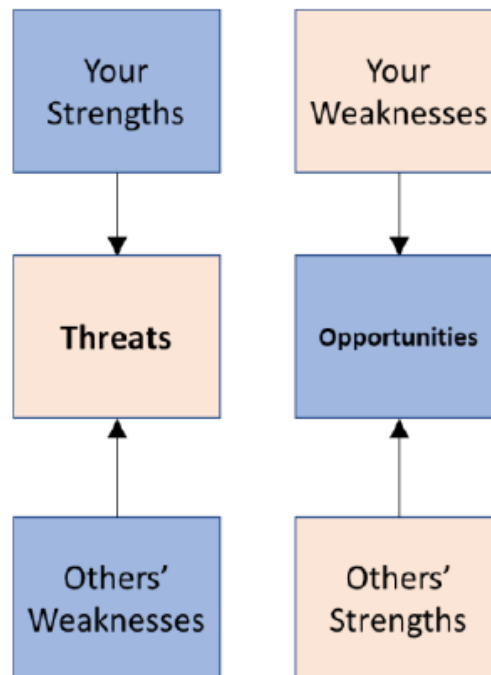
Strengths (internal, positive factors) Strengths describe the positive attributes, tangible and intangible, of your organization. These are within your control.	Weaknesses (internal, negative factors) Weaknesses are aspects of your business that detract from the value you offer or place you at a competitive disadvantage.
• 1 • 2 • 3	• 1 • 2 • 3
Opportunities (external, positive factors) Opportunities are external attractive factors that represent reasons for your business to exist and prosper	Threats (external, negative factors) Threats are external factors beyond your control that could put your business at risk. You may benefit from having contingency plans for them.
• 1 • 2 • 3	• 1 • 2 • 3

► SWOT Retooled



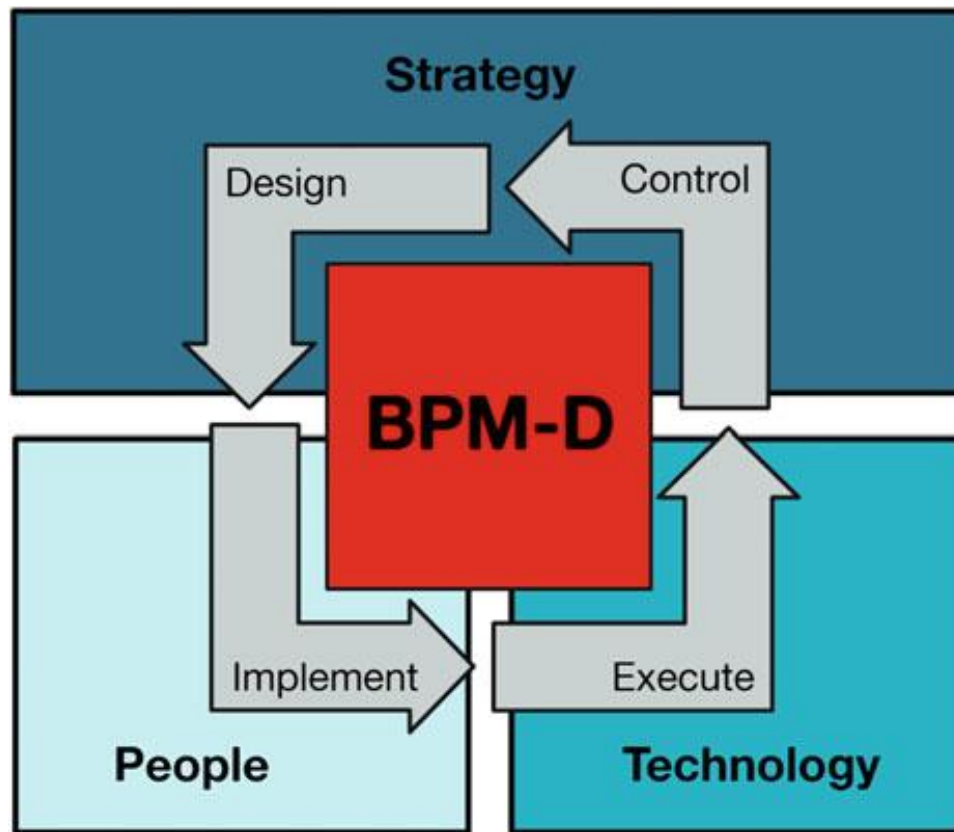
Nexus Nugget Notes

- ▶ In an article titled, “Are Your Company’s Strengths Really Weaknesses?” author and NYU professor, Adam Brandenburger, recommends retooling SWOT to include *others’* strengths and *others’* weaknesses — those of your competitors (2019).
- ▶ The logic behind this retooling is that an organization’s core competencies can *harden* over time, becoming less agile and less flexible to change.



BPM Links Strategy to Execution

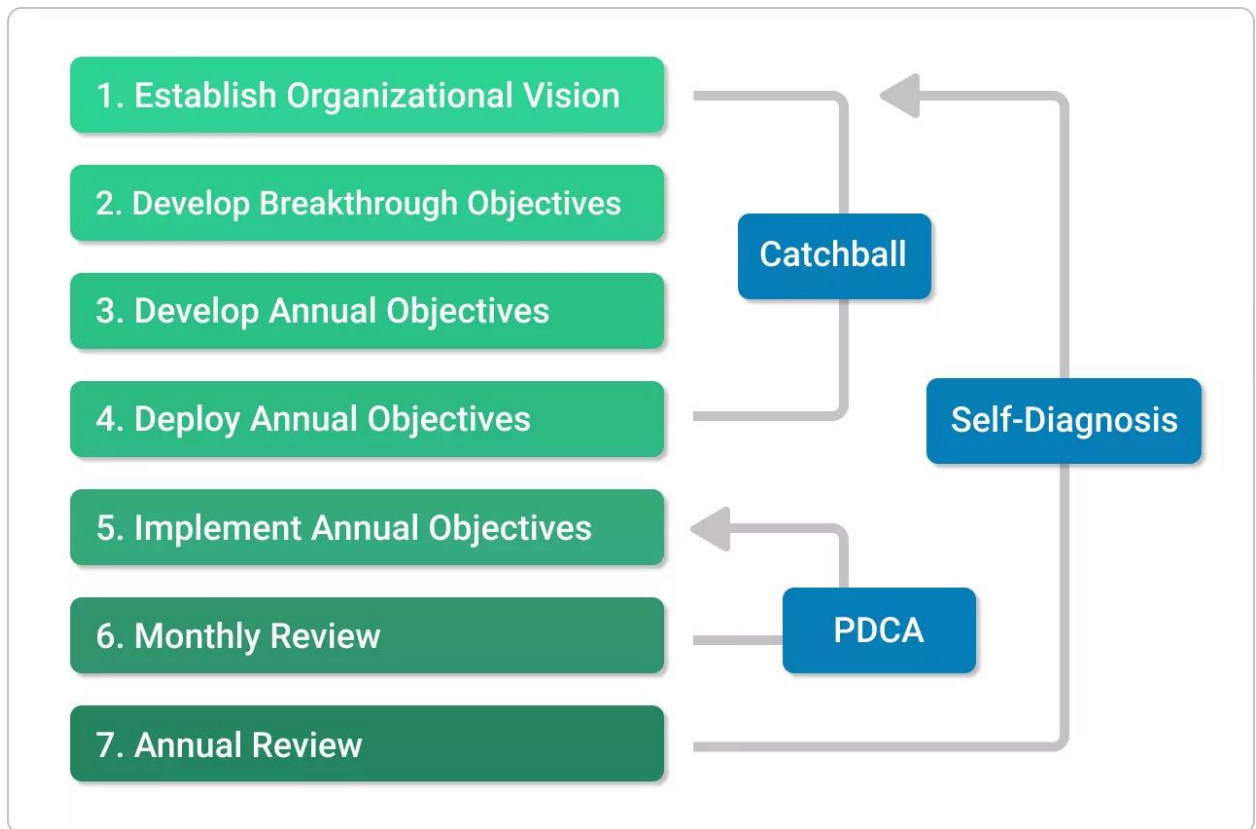
- ▶ **BPM-Discipline**
- ▶ A key component of a BPM-Discipline is a structured approach to designing processes that are value-driven and focused on realizing the business strategy of an organization.
- ▶ The Hoshin Kanri management approach is sometimes mentioned in relation to BPM-Discipline.
- ▶ This is a seven-step procedure used in strategic planning.
- ▶ Strategic goals are communicated throughout the organization and then turned into action.



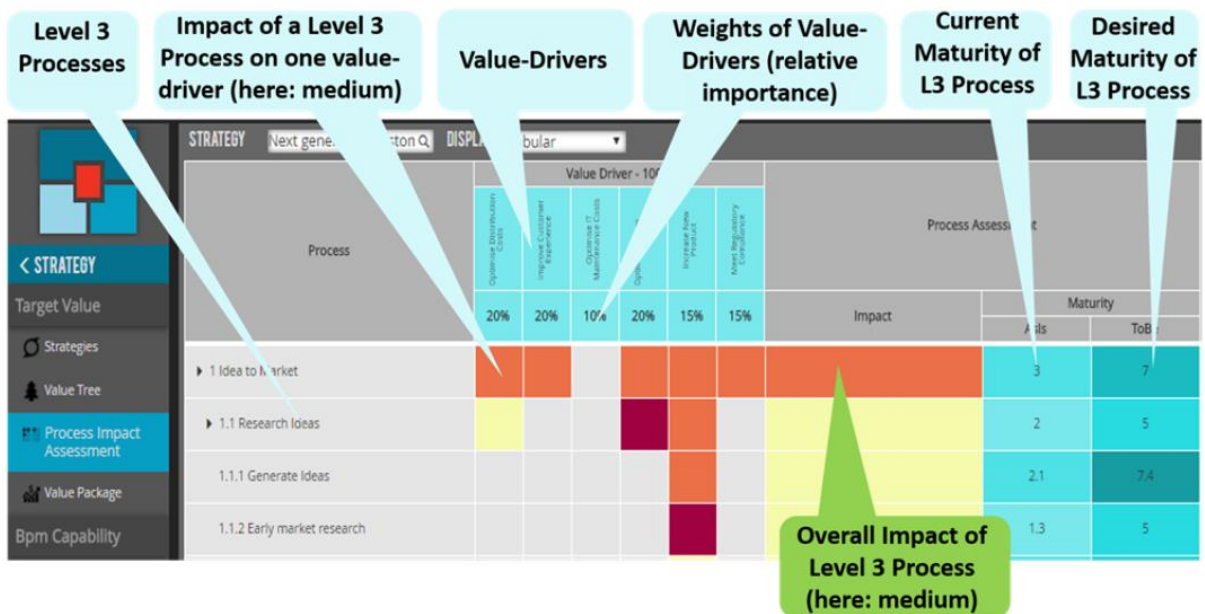
- ▶ **The Hoshin Planning Process**
- ▶ A key component of Hoshin Kanri is the Policy Deployment Matrix or X Matrix that is used to define specific actions linked to the strategy and related to appropriate metrics.



Nexus Nugget Notes



► Process Impact Assessment





Process Management Roles

- ▶ **Process Owner**
- ▶ **Process Leader = Executive sponsors**
- ▶ **Process Steward= Process managers**
- ▶ **Process Analyst**
- ▶ **Process Governor**
- ▶ **Process designers**
- ▶ **Process architects**
- ▶ **Business analysts**
- ▶ **Subject matter experts**
- ▶ **IT professionals**
- ▶ **Change management professionals**

Process Owner

- ▶ A Process Owner has the ongoing responsibility and accountability for the successful design, development, execution, and performance of a complete end-to-end business process.
- ▶ Process ownership can be a full-time responsibility or an added responsibility, such as a line or staff function.
 - ❑ Accountability and responsibility for process design, process performance
 - ❑ Advocacy and support: Serves as point of contact for process-related questions
 - ❑ Engages a team of stakeholders to define business process context and ensure alignment with strategic objectives
 - ❑ Engages a team of stakeholders and SMEs to ensure business process design meets expectations within its defined organizational context
 - ❑ Ensures understanding of how people and systems are engaged to support process execution
 - ❑ Plays active stakeholder role in business and technology initiatives that impact the process
 - ❑ Facilitates business process adoption
 - ❑ Monitors and reports process performance data
 - ❑ Proposes a corrective course of action if process performance is not as expected



Nexus Nugget Notes

- ☐ Escalates instances of significant process performance breaches requiring attention
- ☐ Leads a team to assess, prioritize, and implement requests for process change
- ☐ Collaborates with other Process Owners to ensure alignment

Process Leader = Executive Sponsors

- ▶ The role of the Process Leader is played by members of the organization's executive leadership team and may or may not involve representatives of the process ownership function.
- ▶ Leaders determine the direction and strategy of BPM, focusing the enterprise on its larger objectives.
 - ☐ Defining the vision and strategy for Business Process Management and sponsoring its implementation
 - ☐ Ensuring that process performance objectives are established in alignment with strategic direction
 - ☐ Confirming that process change recommendations and prioritizations are in alignment with strategic intent

Process Steward= Process managers

- ▶ The role of Process Steward is played by members of the organization's functional management — that is, the managers of operations staff who execute activities within an end-to-end business process.
- ▶ A process manager actually performs and coordinates the work on a process or processes.
- ▶ Process managers are involved in measuring and monitoring process metrics and driving continuous process improvement.
 - ☐ Developing knowledge and expertise within the functional discipline
 - ☐ Attracting and retaining top talent within the functional discipline
 - ☐ Structuring and developing functional team role descriptions and responsibilities
 - ☐ Defining and maintaining operational-level procedures
 - ☐ Ensuring that operational-level procedures align with requirements of overarching business processes that the function supports.
 - ☐ Ensuring that operations staff are aware of expectations with respect to supporting overarching business processes.



Nexus Nugget Notes

- ☐ Gathering and submitting feedback and suggestions for process improvement to the Process Owner.
- ☐ Membership on the team (led by Process Owner) that assesses and prioritizes process change requests.
- ☐ Sharing information with the Process Owner regarding functional-level performance that is relevant to the overarching business process.

Process Analyst

- ▶ In small Business Process Management implementations, the Process Analyst can have responsibilities across all phases of the Business Process life cycle.
- ▶ In larger implementations, Process Analysts might specialize in one or two key aspects of the discipline.
 - ☐ End-to-end design of the organization's business processes (under direction of the Process Owner and with input from functional SMEs)
 - ☐ Manage process transformation projects, lead process discovery and design workshops, coach Process Owners, and measure and report on process performance.
 - ☐ Documenting and understanding process design and performance patterns.
 - ☐ Maintenance of the process model repository
 - ☐ Collaboration with the Process Owner and Stewards to diagnose problems and propose solutions
 - ☐ Performing analyses as requested by the Process Owner and/or Process Stewards
 - ☐ Typically, membership on the team that assesses and prioritizes requests for process change
 - ☐ Typically, membership on process change implementation teams

Process Governor

- ▶ The role of the Process Governor is critical in driving process maturation through standardization in the practice and use of BPM methodologies and tools.
- ▶ This role is less focused on the content of the organization's processes than on how that content is documented and managed.



Nexus Nugget Notes

- ☐ Defining Business Process Management principles, practices, and standards
- ☐ Ensuring that Business Process Management principles, practices, and standards are scalable across the current and expected future scope of the Business Process Management implementation
- ☐ Providing guidance, mentorship, and training on best practices and standards, and enforcing compliance with them

Process designers

- ▶ Process designers have significant process knowledge.
- ▶ They design new business processes, transform existing business processes, and implement plans.
- ▶ Designers typically possess analytical and creative skills as well.
- ▶ They use visual and mathematical models to describe each step in a process and the organization of work.
- ▶ A process designer ensures that the process design aligns and complies with the overall business goals and policies.

Process architects

- ▶ Process architects may function in a business or technology role.
- ▶ Depending on the orientation, they may be focused on managing business performance or on mapping technology to business operations.
 - ☐ Developing an enterprise Business Architecture blueprint, along with corresponding value-stream process metrics
 - ☐ Ensuring alignment among business needs, Business Architecture, and information technology architecture
 - ☐ Developing and maintaining a repository of reference models and standards with regard to a company's products and services, business processes, performance measures, and organization

Business Analyst

- ▶ A common role in process change initiatives is that of business analyst (BA).
- ▶ BAs are responsible for analyzing the information and technology needs of their business customers to help propose information and technology solutions.



Nexus Nugget Notes

- ▶ BAs may facilitate meetings to assist the project team in analyzing current technology mappings or they may be involved with business operations and designing new information and technology functions.
- ▶ Within the systems development life cycle, the BA typically performs a liaison function between the business side of an enterprise and the information technology department or external service providers.
- ▶ Common alternative titles are business systems analyst, systems analyst, and functional analyst.

Subject Matter Experts

- ▶ Many process improvement projects or process management teams include subject matter experts (SMEs).
- ▶ These are people who have a deep understanding of certain business functions or operations, often possessing years of experience as a participant in business operations.
- ▶ SMEs provide input on the current process and assist in designing new processes.
- ▶ They may have institutional knowledge about the rules governing the organization's processes, customer requirements, or the organization's culture.
- ▶ SMEs often validate models and assumptions and are members of implementation teams as trusted stakeholders providing change leadership.

IT Organization Roles

- ▶ There are a number of roles within Information Technology groups that may play an important part in BPM, including solution architects, system analysts, BPMS configuration specialists, developers, database administrators, and others.
- ▶ These experts help define supporting technology solutions and may help define new capabilities for business processes based on enabling technology.
- ▶ IT personnel assist in process transformation initiatives through the implementation of new technology, while ensuring that the organization's technical standards are enforced.



Other Roles

- ▶ The ABPMP recommends including the following roles as part of the overall BPM team:
 - ▶ Project manager
 - ▶ Change management manager
 - ▶ Data analyst
 - ▶ Data quality analyst
- ▶ Data analysts document the data requirements for inputs, outputs, alignment of business rules with algorithm development, and business intelligence reporting requirements among others.
- ▶ Data analysts should perform their work concurrently with the process architect throughout the BPM life cycle.

Project manager

- ▶ The goal of project management is to effectively deploy resources in a structured manner to develop and implement the solution in terms of what needs to be done to processes, systems, organizational structure and job roles.
 - ☐ Identify milestones and activities that must be completed
 - ☐ Outline resources needed and how they will work together
 - ☐ Define scope (what will be part of the project and what will not be)
- ▶ **Change management manager**

The goal of change management is to help each individual impacted by the change to make a successful transition, given what is required by the solution.

 - ☐ Craft key messages that must be communicated
 - ☐ Work with project sponsors to build strong and active coalitions of senior leaders
 - ☐ Make the case of why the change is needed to employees throughout the organization, even before the specific details of the solution are complete



Business Process Modeling



Business Process Modeling

- ▶ *Business process modeling* is the set of activities involved in creating representations of an existing or proposed business process.
- ▶ Modeling can provide an end-to-end perspective or a view of one portion of an organization's primary, supporting, or management processes.
- ▶ For enterprises aware of the high value of their business processes, process modeling is the foundational activity for managing the enterprise.

Use of Process Models

- ▶ A *model* is a simplified representation of a thing, concept, or activity.
- ▶ Models can be mathematical, graphical, physical, narrative, or a combination of these.
- ▶ A process model includes icons that represent workflow, data flow, events, decisions, gateways, and other elements of the process itself.
- ▶ Models have a wide range of applications in business environments, including:
 - ☐ • Organizing (structuring)
 - ☐ • Discovery (learning)
 - ☐ • Forecasting (predicting)
 - ☐ • Measuring (quantifying)
 - ☐ • Explaining (teaching, demonstration)
 - ☐ • Verification (validation)
 - ☐ • Control (constraints, objectives)
- ▶ Business processes can be expressed through modeling at many levels of detail, ranging from highly abstract to highly detailed.

Process model or a Process diagram/map



Is it a Model?		
	A Process Model	A Process Diagram or Process Map
1	Standardized notation convention	Notation ambiguous
2	As precise as needed	Precision lacking
3	More detailed	Less detailed
4	Icons are objectively defined and standardized	Icons (representing process components) made up or loosely defined
5	Icon relationships definite and explained in annotations, process model glossary, and process narratives	Relationships of icons portrayed visually
6	Can depict appropriate complexity	Limited to portrayal of simple ideas
7	Can grow, evolve, mature	One-time snapshot
8	Created with tool appropriate to the project	May be created with simple drawing tools
9	May provide manual or automated process simulation	Difficult to use for even the simplest manual simulation
10	Vertical and horizontal linking, showing relationships among processes and different process levels	Difficult to link with related diagram or map
11	Uses a repository of related models within a BPM system	Uses simple file storage with no inherent relationships
12	Appropriate for any level of process capture, analysis, and design	Appropriate for certain quick capture of ideas
13	Can be imported into a business process management system (BPMS)	Not suitable for import into a BPMS

Static Versus Dynamic Models

- ▶ Static models represent a single state of a business process or certain elements of a business process.
 - ☐ • Establish baselines
 - ☐ • Document configuration stages
 - ☐ • Depict certain future states based on assumptions of goals or risks of the process
 - ☐ • Manage change
 - ☐ • Drive the process toward a more advanced level of maturity
- ▶ Examples of dynamic models include those that are designed to allow interaction with a user or those that show the development of a trend over time.
 - ☐ In some cases, the most basic version of a modeling tool will have simulation capabilities appropriate for most modeling projects.

Combining Static and Dynamic Models



Nexus Nugget Notes

- ▶ When considering a future process configuration (the “To-Be” process), by feeding sample data through a dynamic process model you can see how the actual process will perform.
- ▶ Conversely, cycling of a dynamic model can produce a desirable set of static “snapshots” to aid in further analysis.

Process Repository

- ▶ In general, a repository is a place where things are stored.
- ▶ In our context, a business process modeling tool with a database or a Business Process Management Suite is called a *business process repository*.
- ▶ It is the place where business process models are stored and managed.
- ▶ You can use modeling tools to capture and catalog process components and the information associated with each component to organize, analyze, and manage an organization’s portfolio (collection) of processes.

Process Repository Characteristics

- ▶ • Storing business process models and process artifacts for reuse
- ▶ • Creating a centralized place for accessing process information
- ▶ • Enabling multi-user access and collaboration
- ▶ • Querying and reporting on stored content
- ▶ • Checking consistency to ensure modeling standards are followed
- ▶ • Allowing flexibility to show different aspects of business processes based on target audience

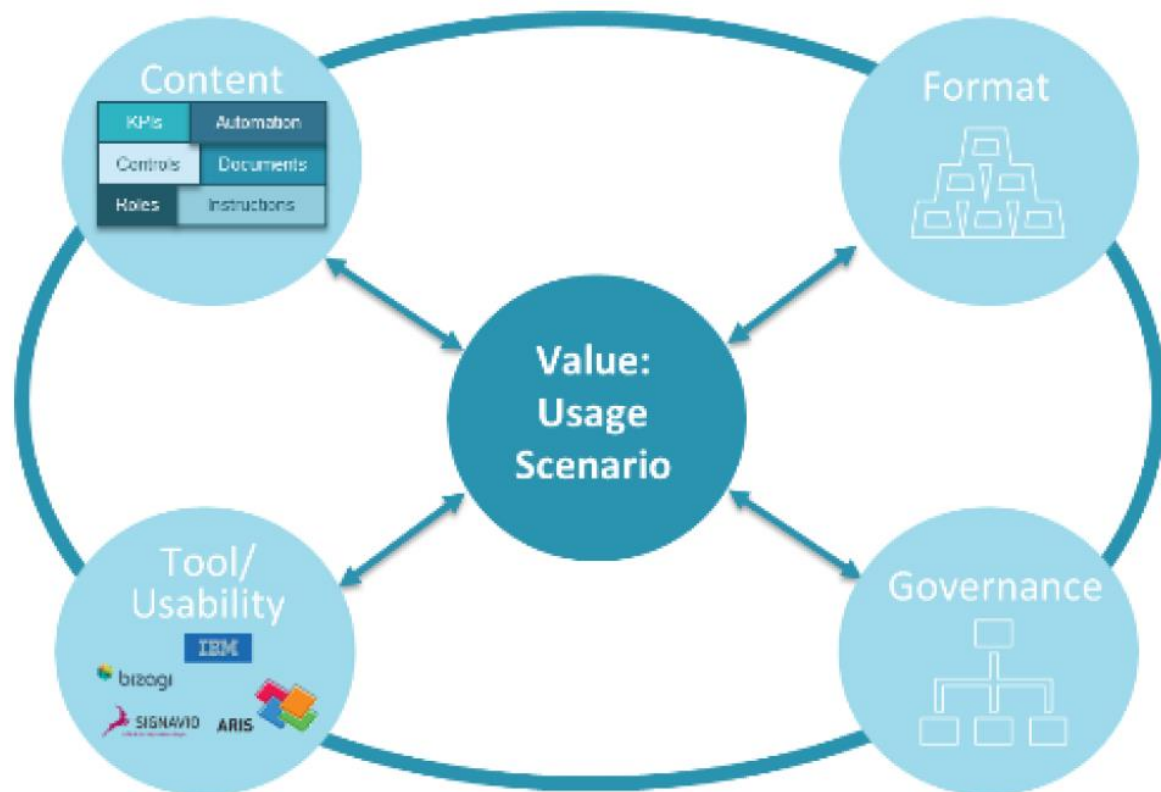
Why Do Organizations Need a Process Repository?

- ▶ A process repository creates transparency for an organization, the key value of Business Process Management.
- ▶ This transparency helps to identify the organization’s business processes, puts boundaries around them, and supports the management of a large number of business processes.
- ▶ Business Process Management regards business processes as assets.
- ▶ Capturing business processes in the form of process models and storing them in a process repository makes them tangible and manageable.



Key Elements of Good Repository

- ▶ **Centralized:** central location for storing information
- ▶ **Used to store artifacts:** such as process models, objects, relationships, attributes, business rules, performance measures, and so on
- ▶ **Software enabled:** process modeling tools or BPMS
- ▶ **Systematic:** Object-oriented to store process knowledge to avoid redundancy and to enable the analysis of business process assets.
- ▶ **Integration ready:** with document management systems, training solutions, or knowledge portals.
- ▶ **Governed:** supported and managed by a well-defined governance structure
- ▶ **Life cycle standard:** defined by the following phases: strategy, design, build, maintenance, and operation.
- ▶ **Life cycle managed:** Should be managed throughout its entire life cycle
- ▶ **Initiative supporting:** leveraged for different enterprise initiatives such as business transformation, process improvement, ERP implementations, software development, risk management, and IT portfolio management.



Sample Usage Scenario



Usage Scenario Sample – Understand the Incident Management procedures

As a *Help Desk Assistant*

I Want to

- *Understand the process and systems for my role*
- *Have clarity on where the reported incident lies*
- *Be able to report on impact of the incident*
- *Be able to check and provide the right resolution*
- *Understand how and whom to route queries \ issues*

So that *I have access to the right information to manage incidents raised.*



Identifying Outcome-Based Usage Scenarios

- Standardization of processes
- ▶ • Process transformation
- ▶ • Process improvement
- ▶ • Process innovation
- ▶ • Robotic process automation
- ▶ • Workflow automation
- ▶ • ERP roll-out
- ▶ • Roll-out of best practices
- ▶ • Process change management, for example, training
- ▶ • Risk and compliance management
- ▶ • Thirty-party collaboration
- ▶ • Software development
- ▶ • Simulation, for example for bottleneck analysis
- ▶ • Post M&A integration
- ▶ • Business strategy execution
- ▶ • Operating model development
- ▶ • BPM strategy

Identify the Usage



Nexus Nugget Notes

- ▶ The key metric for a good repository is its usage.
- ▶ A good repository **should not** be measured by the number of models or the amount of information stored.
- ▶ A repository should be measured by:
 - ☐ • Percentage of people who use it
 - ☐ • Types of initiatives enabled
 - ☐ • Rate at which information is updated in it
- ▶ When designing a repository, the key questions to ask are:
 - ☐ • How do you want to get value out of your process repository?
 - ☐ • What will you use the models for?
 - ❖ o Improvement
 - ❖ o Training
 - ❖ o Collaboration with partners
 - ❖ o Software development

Scope the Content

- ▶ The content stored in a good repository is designed around the potential usage scenario.
- ▶ A repository should store process artifacts such as process models, objects, relationships, attributes, business rules, performance measures, and so on.
 - ☐ • Process models
 - ☐ • Organizational models
 - ☐ • Technology models
 - ☐ • Decision models
- ▶ A key design decision is what models to store in the repository.
- ▶ The key to building content in a repository is to start by adding content that enables a usage scenario.

Defining a Standard Format

- ▶ Object Management Group (OMG)
- ▶ Institute of Electrical and Electronics Engineers Standards Association (IEEE-SA)
- ▶ Business Process Modelling Notation (BPMN)
- ▶ ArchiMate
- ▶ Value-Added Chain Diagram (VCD)



Nexus Nugget Notes

- ▶ Event-driven process chain (EPC)
- ▶ SIPOC diagram (suppliers, inputs, process, outputs, customers)
- ▶ Decision Modeling Notation (DMN)
- ▶ Entity Relationship Diagrams (ERD)
- ▶ ...

Select the Repository Management Tools

- ▶ What technology tools are necessary to manage the warehouse? Does this technology support the process of manufacturing and assembly appropriately? Is it *open* and hence easily integrated with implementation, execution, and control tools?

Finalize the Process Repository Governance

- ▶ The warehousing of processes requires a robust governance structure around it.
- ▶ • Define who can:
 - ☐ o View models
 - ☐ o Modify models
 - ☐ o Create new models
 - ☐ o Approve models
- ▶ • Create a process to create new models
- ▶ • Define maintenance processes
- ▶ • Define a process to *retire* models
- ▶ • Define a quality assurance process, including the enforcement of modeling standards and guidelines (part of general maintenance)
- ▶ • Define a process to measure value created through models (based on usage scenarios)
- ▶ • Define hotline support
- ▶ • Define version control
- ▶ • Publish governance guidelines

Repository Governance

- ▶ Process governance and repository governance are interdependent



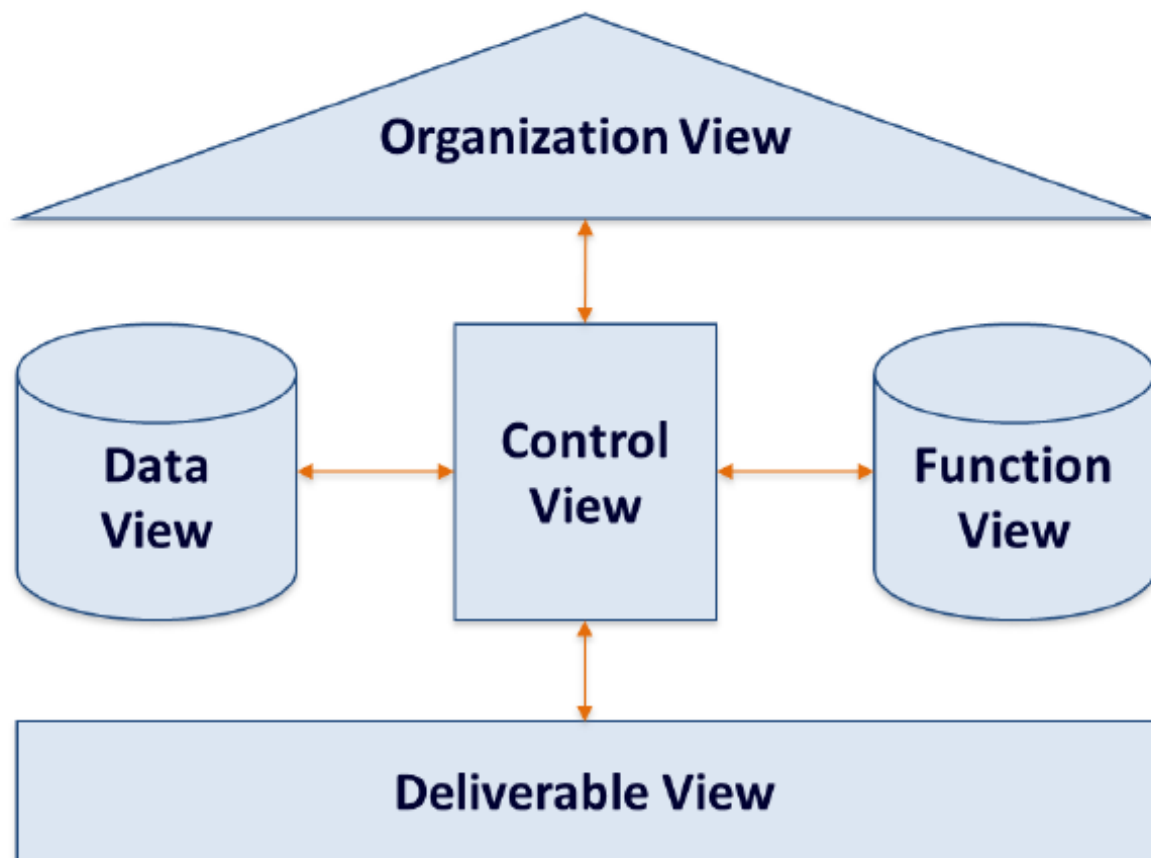
Nexus Nugget Notes

- ▶ Repository governance relies on methods and conventions that map to an organization's architecture
- ▶ Process governance guides the execution of Business Process Management.
- ▶ The objects of process governance are the organization's value chain, the process management methodology and the rules, roles, and responsibilities that structure and organize how process management functions.
- ▶ Agreed upon content and format definitions, which are practically defining the Business Architecture, need to be made available in the repository and documented in a *methods and conventions* document.

A process repository enables process governance in several ways:

- ▶ • **Process prioritization.** It provides, with its process hierarchy, a crucial element for process prioritization, which is a building block of developing an organization's process strategy.
- ▶ • **Multi-level process ownership.** It provides, with its transparency over the process hierarchy, the backbone for structuring multi-level process ownership.
- ▶ • **Multi-level process performance indicators.** It provides, with its transparency over the process hierarchy, the backbone for designing multi-level process performance indicators.
- ▶ • **Lifecycle management.** It supports the management (create, update, release) of lifecycles for business process models and related information models.

Scoping the Right Process Knowledge Content



- ▶ (1) Who is involved in the process (organization)?
- ▶ (2) What are the activities carried out (functions)?
- ▶ (3) What information is needed or produced in the process (data)?
- ▶ (4) Why do I need that process (deliverables)?
- ▶ (5) Who is doing what, by means of which data, to produce which deliverables, and in which logical sequence (control)?

How to Structure Content

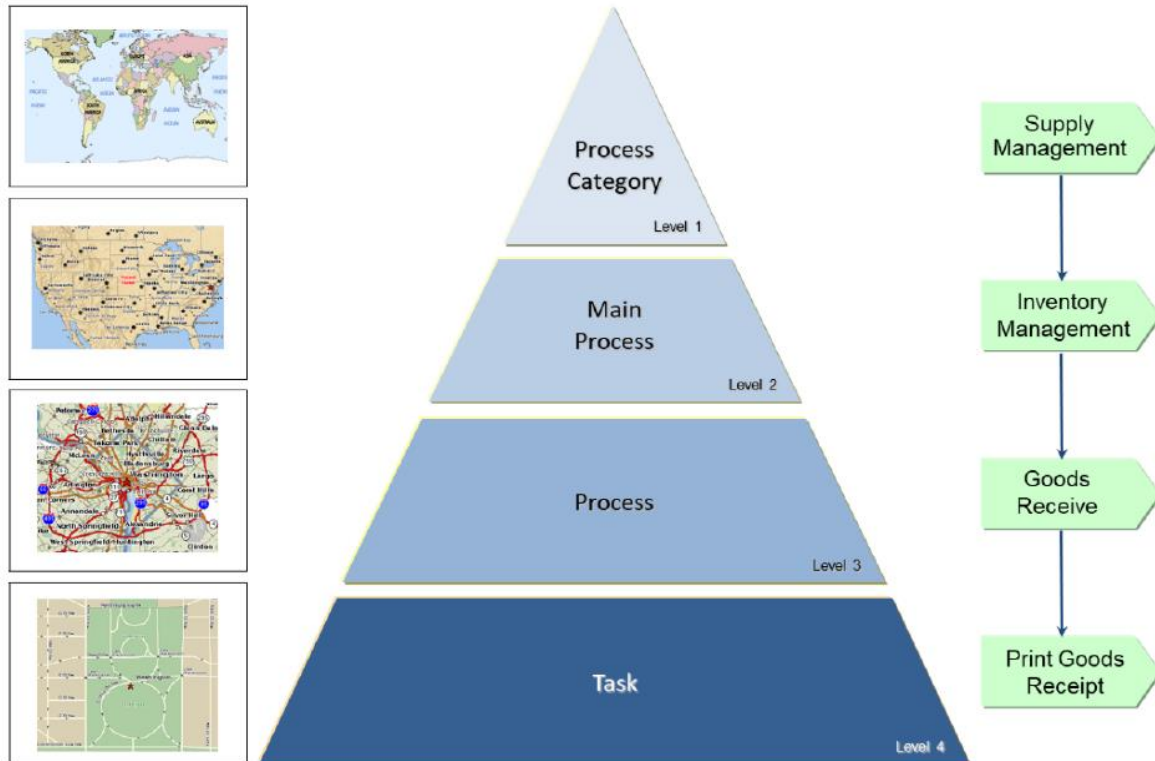
- ▶ Processes involve information about people, technology, information, and control.
- ▶ The repository must capture this information in a structured way so that the information can be filed, referenced, and reused in various usage scenarios.
- ▶ Process architects should be careful about two factors:
 - ❑ • **Level to link information** : level of *process decomposition*



Nexus Nugget Notes

- ❑ • **Location of information storage:** store information inside the repository or outside

Process Decomposition



Commonly-Used Architecture Elements

► Process

- ❑ Business Process Modelling Notation (BPMN)
- ❑ Event-driven process chain (EPC)
- ❑ Value-Added Chain Diagram (VCD)
- ❑ SIPOC diagram
- ❑ Flowcharts

► People

- ❑ Organizational chart
- ❑ RACI chart
- ❑ Balanced scorecard

► Technology

- ❑ Decision Model and Notation (DMN)



Nexus Nugget Notes

- ☐ Entity relationship diagram (ERD)
- ☐ ArchiMate
- ☐ Unified Modelling Language (UML)
- ☐ Systems Modelling Language (SysML)
- ☐ Data flow diagram (DFD)

How to Select the Right Tool for Your Organization?

- ▶ Clear insight into your process agenda and process usage scenarios helps ensure successful tool selection.
 - ☐ (1) The tool's capabilities to support the current usage scenarios that your organization plans to implement immediately
 - ☐ (2) The tool's capability to scale into the planned usage scenarios that you would like to develop in the future
 - ☐ (3) The tool's capability to support standard notations so that, as and when required, you can migrate your existing content into another tool

Business Architecture Related Methods and Conventions

- ▶ A *methods and conventions* document contains guidelines that include:
 - ▶ • Modeling notations to be applied per process hierarchy level
 - ▶ • Object types used per modeling notation
 - ▶ • Connector types used per modeling notation
 - ▶ • Symbols used per object type
 - ▶ • Naming conventions for information models and objects
 - ▶ • Banner layout and content for information models
- ▶ Repository-specific aspects of the document include:
 - ▶ • Intended folder structure
 - ▶ • Naming conventions for the folder structure
 - ▶ • Information model statuses and their impacts
 - ▶ • Authorizations per user role
 - ▶ • Semantic checks

Repository Metrics

- ▶ A good repository should be measured according to:
 - ☐ (1) Percentage of users in an organization who use repository
 - ☐ (2) Different types of initiatives enabled by repository



Nexus Nugget Notes

- ❑ (3) Rate at which information is updated in repository
- ▶ Value-driven process management, if applied correctly, ensures the optimal development and use of the process repository.
- ▶ Optimal use means using the right standards, tool governance, and focusing on agreed-upon usage scenarios.

Process Components and Data in Process Models

Inputs and outputs
Events and results
Value add
Roles and organizations
Data and information
Probabilities
Queuing
Transmission time
Wait time

Arrival patterns and distributions
Costs (indirect and direct)
Entry rules
Exit rules
Branching rules
Join rules
Work and handling time
Batching
Servers (number of performers available to perform tasks)

Purpose of Process Modeling

- ▶ As a work activity, the purpose of process modeling is to create a representation of the process that describes it accurately and sufficiently for the task at hand. For this reason, the level of detail to model and the specific type of model is based on what is expected from the modeling project.

Process models are the means to:

- ▶ • Manage organization processes
- ▶ • Analyze process performance
- ▶ • Define changes
- ▶ Process models are tools that can express a target business state or specify the requirements for resources to enable effective business operations, such as people, information, facilities, automation, finance, and energy.
- ▶ The process modeler should be aligned with the project's defined level of detail based on the scope and timeline.

Commonly Used Process Modeling Notations



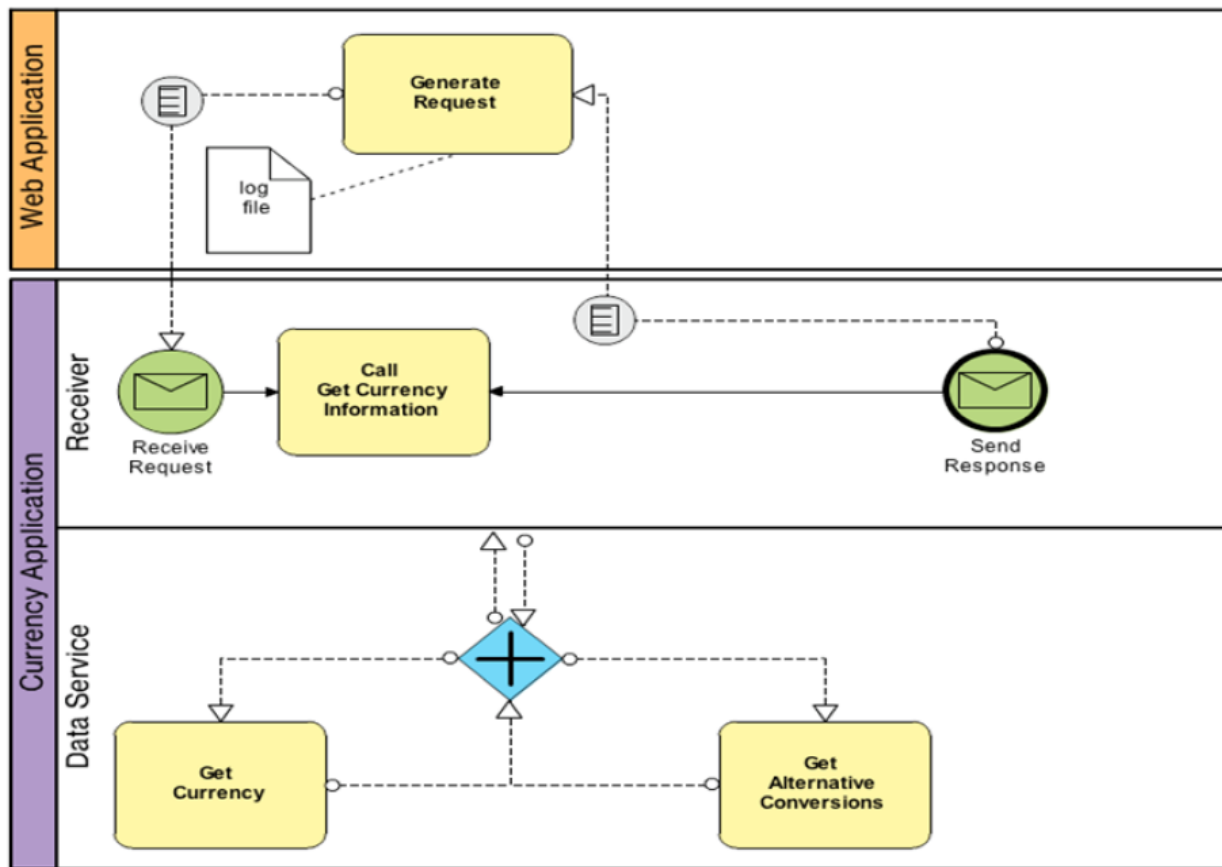
Nexus Nugget Notes

- ▶ Notations exist in many disciplines and are an important component of business process modeling.
- ▶ A standardized set of symbols and rules that govern how the symbols represent something else.
- ▶ Business process modeling notation includes icons (pictures) and connectors that help show relationships among the various real-life components of a business process.

Commonly Used Process Modeling Notations

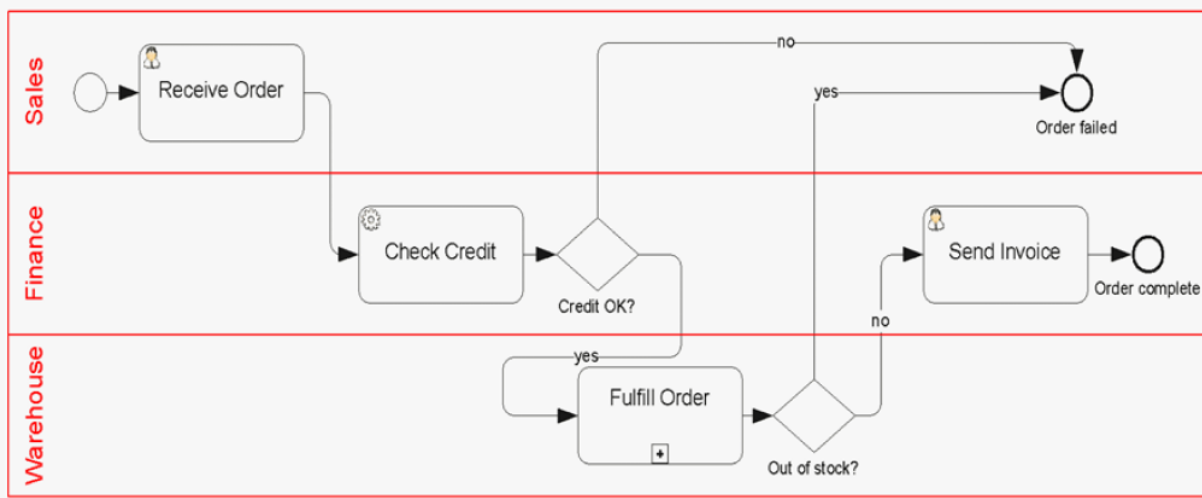
Business Process Model and Notation (BPMN) 2.0

- ▶ Business Process Model and Notation 2.0 is a standard created by the Business Process Management Initiative, now merged with the Object Management Group (OMG), an information systems standards-setting group.
- ▶ BPMN has growing acceptance as a standard from many perspectives, which has resulted in its inclusion in several of the most widely-used modeling tools.
- ▶ It provides a robust symbol set for modeling different aspects of business processes.
- ▶ Like most modern notations, the symbols describe definite relationships such as workflow and order of precedence.



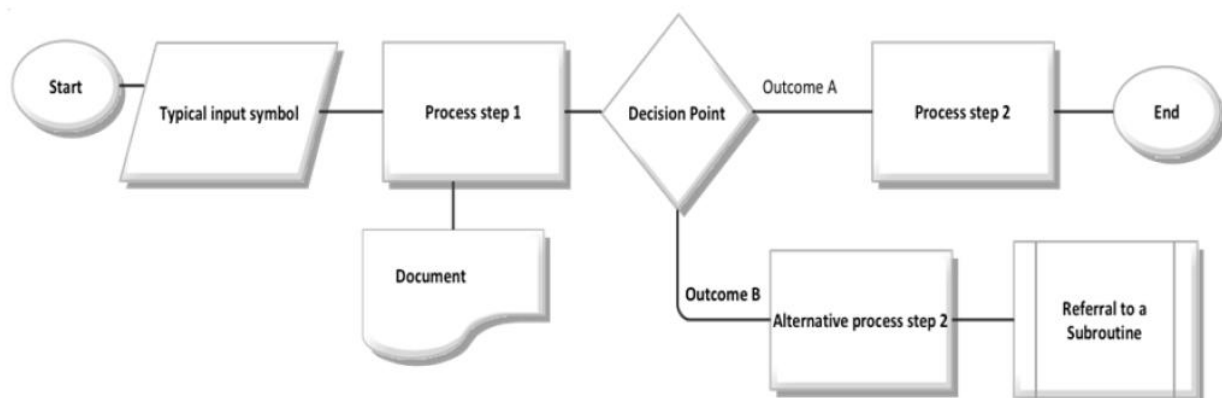
Swim Lanes

- ▶ Swim lanes are not a distinct notation but rather a useful notational responsibility attribution/distribution in addition to most other notation systems.
- ▶ Swim lanes are often incorporated into BPMN, EPC, UML, or simple flowcharting as a means of defining the performer responsible for carrying out an activity.
- ▶ The lanes (rows) are generally represented as long vertical or horizontal rectangles or sometimes as simple lines or bars, resembling the channel or lane markings in swimming competitions.
- ▶ Arranging the flow of activities and tasks across these rows makes it easy to visualize handoffs in the work.



Flowcharting

- ▶ Flowcharting is widely used.
- ▶ It is based on a simple set of symbols for operations, decisions, and other primary process elements.
- ▶ The notation for the most common flowcharting was approved as an ANSI standard in 1970 for representing systems flows.
- ▶ Other flow-charting notations have been used by industrial engineers for decades and use different symbols and layouts for specific industrial mappings.
- ▶ For example, flowcharting is used to describe the flow of materials, roles and work, placement of machinery, and analysis of egress and ingress in dispatch centers.



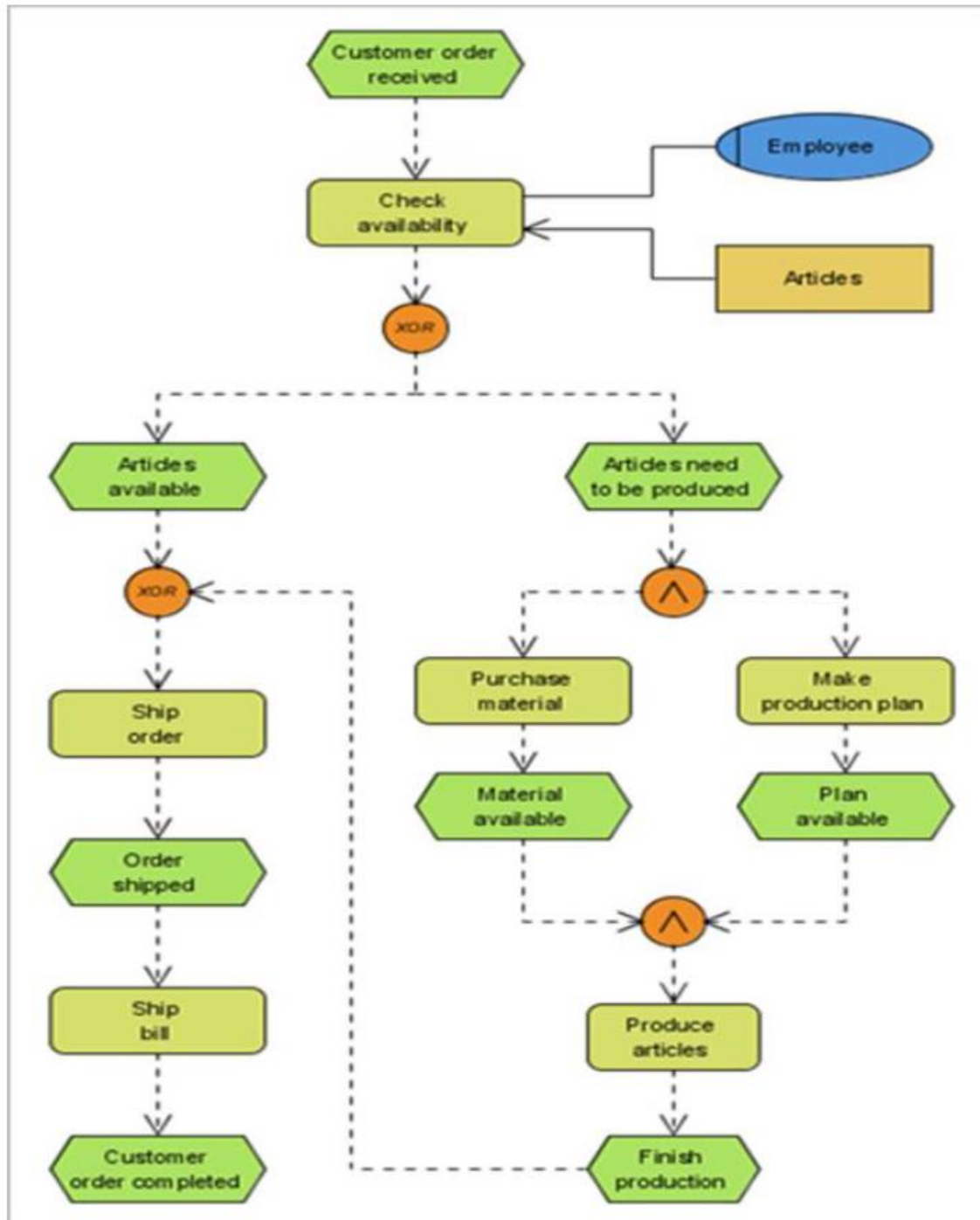
Event-Driven Process Chain (EPC)

- ▶ Event-driven process chains range from very simple to very complex.
- ▶ EPC describes events as either triggering or resulting from a process step, called a function.



Nexus Nugget Notes

- ▶ Thus, the flow is normally event-function-event. EPC relies heavily on logical operators called rules.
- ▶ The basic rule objects are AND, OR, and Exclusive OR.
- ▶ These rule objects express decisions, tests, parallelism, and convergence in the process flow.

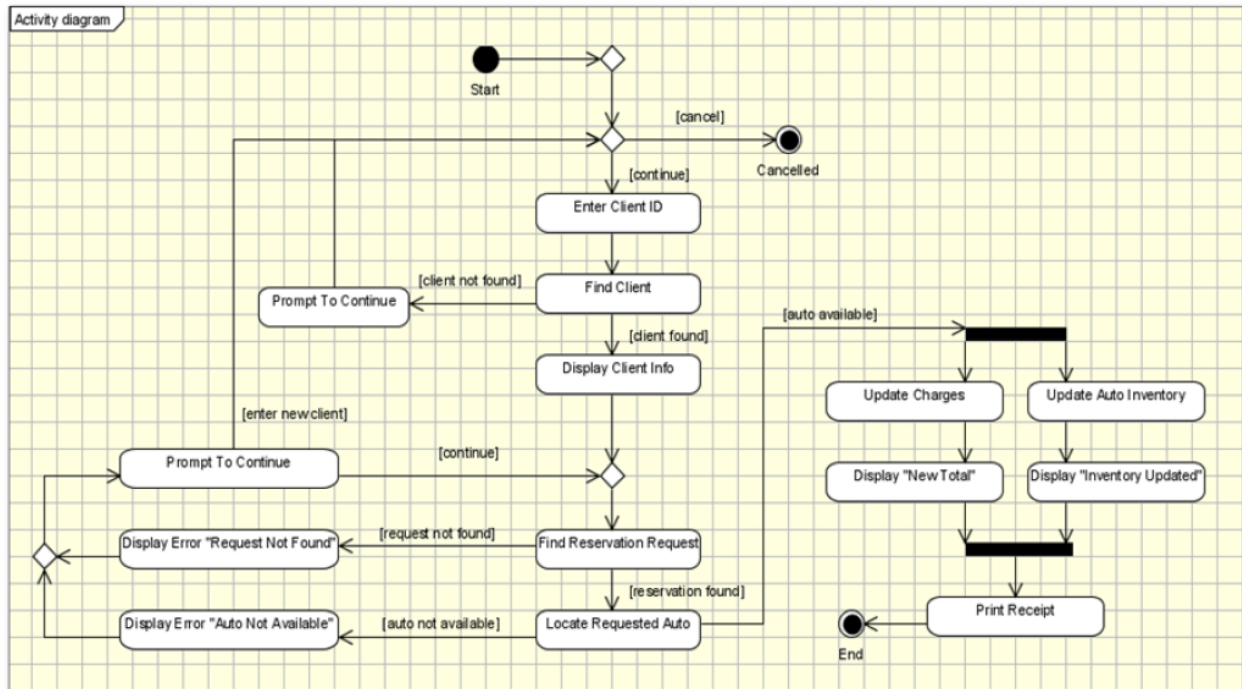




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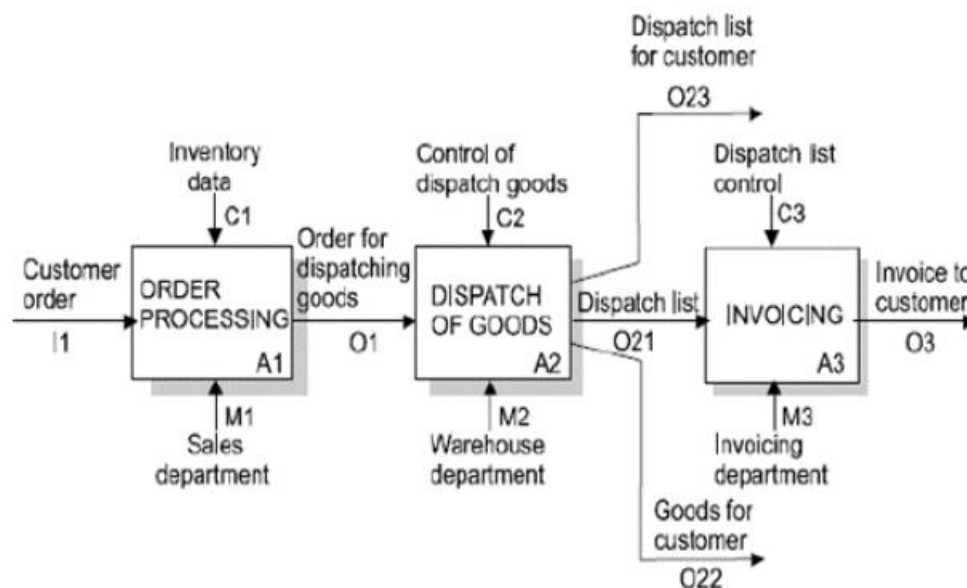
Unified Modeling Language (UML)

- ▶ UML provides a standard set of diagramming techniques and notations primarily for describing information systems requirements.
- ▶ While UML is primarily used for systems analysis and design, a few organizations also use UML activity diagrams for business process modeling.
- ▶ UML is maintained by the Object Management Group (OMG), a standards-setting body for the information systems field.



IDEF0

- ▶ IDEF0 is a family of modeling notation concepts described in a Federal Information Processing Standard (FIPS) that was developed by the US Air Force.
- ▶ It is a notation and technique that is one part of a methodology for defining the work processes and information systems in manufacturing environments. It was widely used and available in many modeling tools for many years and is now in the public domain.
- ▶ IDEF0 is the process modeling notation and it employs a very simple set of symbols consisting of process boxes with arrows showing inputs, outputs, controls, and mechanisms.

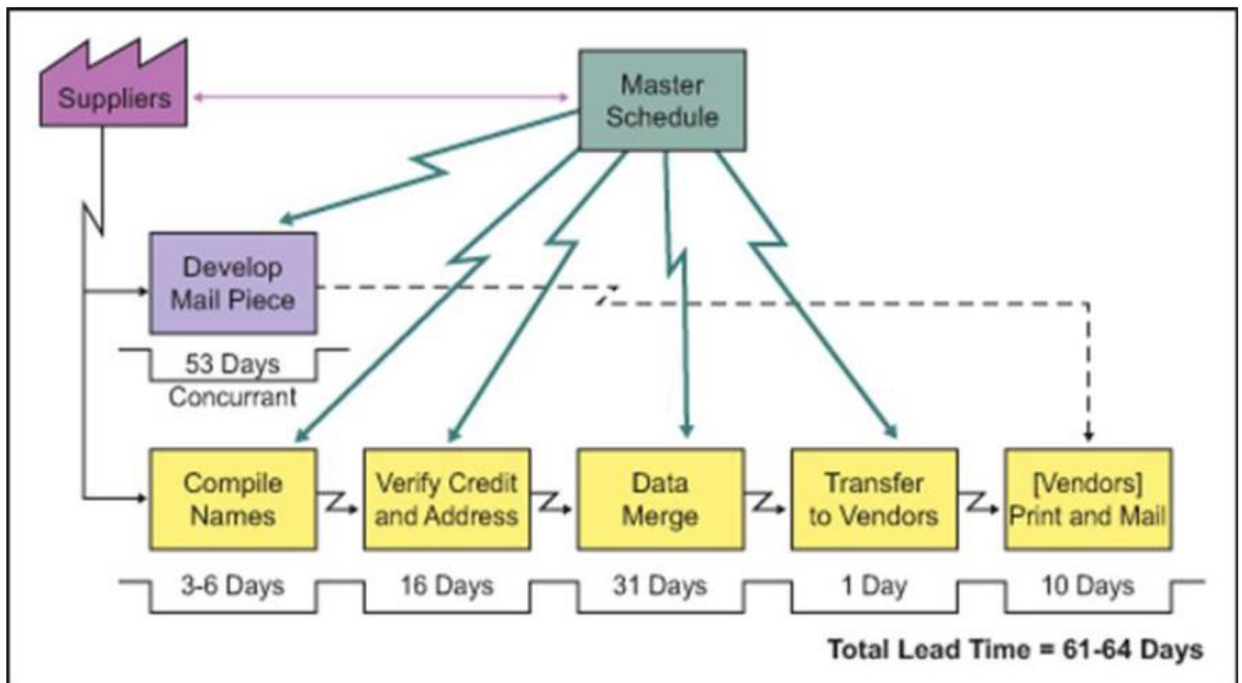


Value Stream Mapping

- ▶ Value stream mapping is a technique used in Lean Manufacturing.
- ▶ Not to be confused with value chain notation, value stream mapping expresses the physical environment and flow of materials and products in a manufacturing environment.
- ▶ At Toyota, where the technique originated, it is known as material and information flow mapping.
- ▶ Value stream mapping is used to add process resource costs and time elements to a process model.
- ▶ Adding costs and time allows the process model to include a view of the process efficiency.

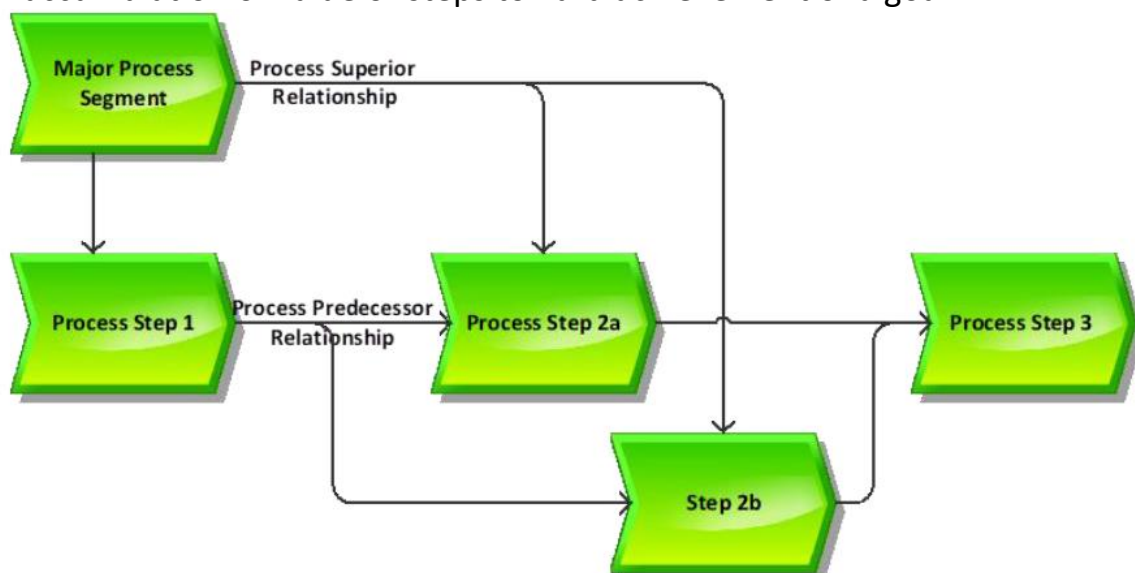


Nexus Nugget Notes



Value chain

- Introduced by Michael Porter, this notation emphasizes capturing those processes and activities that add value to the service or product provided to a customer.
- Provides an overview but not detailed view of business processes.
- Value chain notations are a category of symbol sets used to visualize the accumulation of value or steps toward achievement of a goal.





SIPOC

- ▶ SIPOC stands for supplier, input, process, output, and customer.
- ▶ It is a style of process documentation used in Six Sigma.
- ▶ There is no standard or preferred notation set, and this technique may be satisfied by completing a table with those headings.
- ▶ The SIPOC model is often used to gain an initial consensus on what areas of a process are under study.

SIPOC Worksheet

For Process: _____

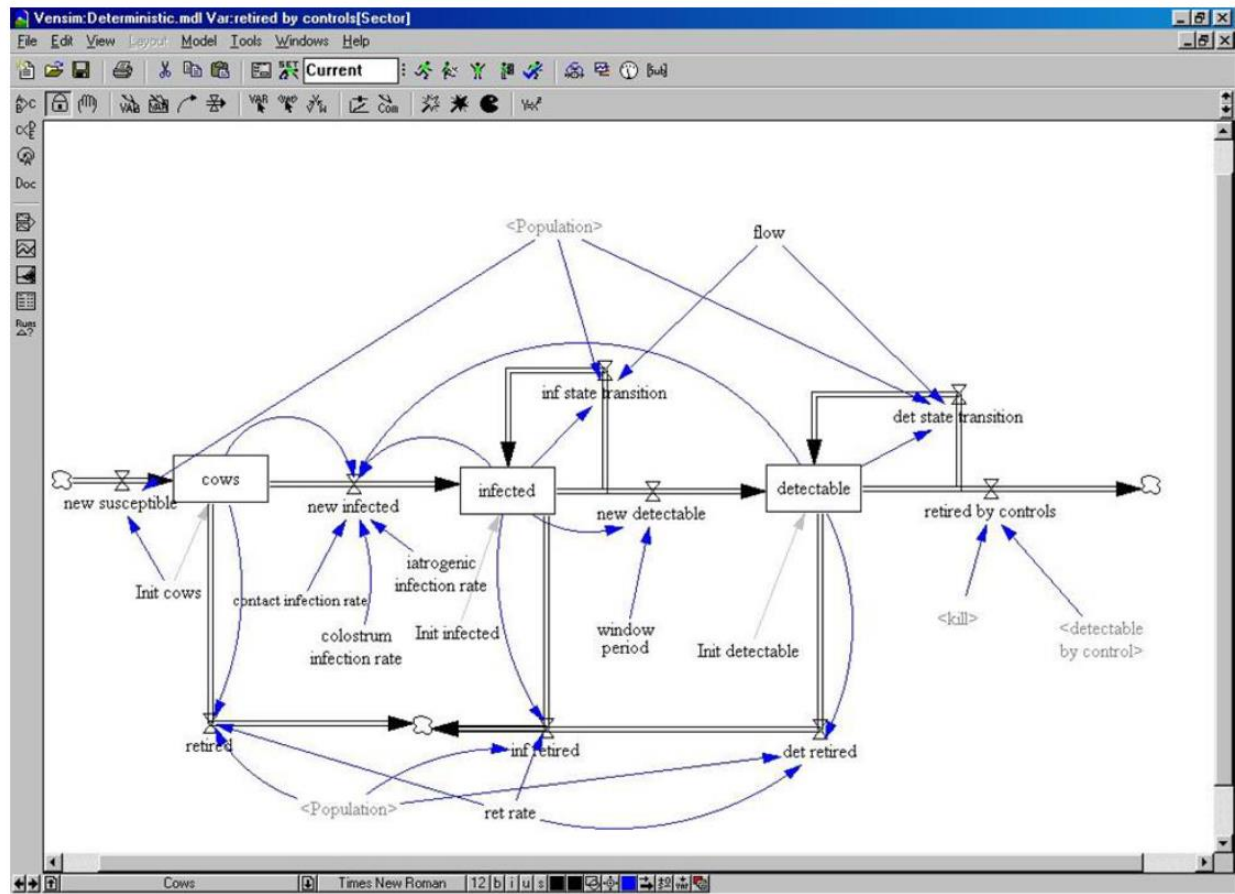
Supplier	Inputs	Process	Outputs	Customer
Record entities that provide the inputs that trigger the process	Record each of the inputs	Steps to respond to inputs (may be a list or simple graphics)	List outputs	Record the entities that receive the result of the process

System Dynamics

- ▶ More than just a different notation, system dynamics models are not static — they show, with movement, how changing variables affect a process.
- ▶ System dynamics models are often used to describe the enterprise business architecture from a dynamic behavioral perspective, rather than a static structural perspective.



Nexus Nugget Notes



Process Model Levels

- ▶ The levels vary by organization, but are often based on perspectives from areas of the organization, such as operations.
- ▶ The top level of the model hierarchy shows the end-to-end process
- ▶ 4 process model levels: enterprise, business, and workflow, and task steps
 - ☐ (1) An executive perspective, which models processes at the highest, strategic level
 - ☐ (2) A business perspective, in which models show end-to-end processes
 - ☐ (3) An operations perspective, where models show actual work activities (workflow)
 - ☐ (4) The lowest level, the tasks and steps taken to complete work

Use of Process Model Frameworks

- ▶ • Porter's value chain

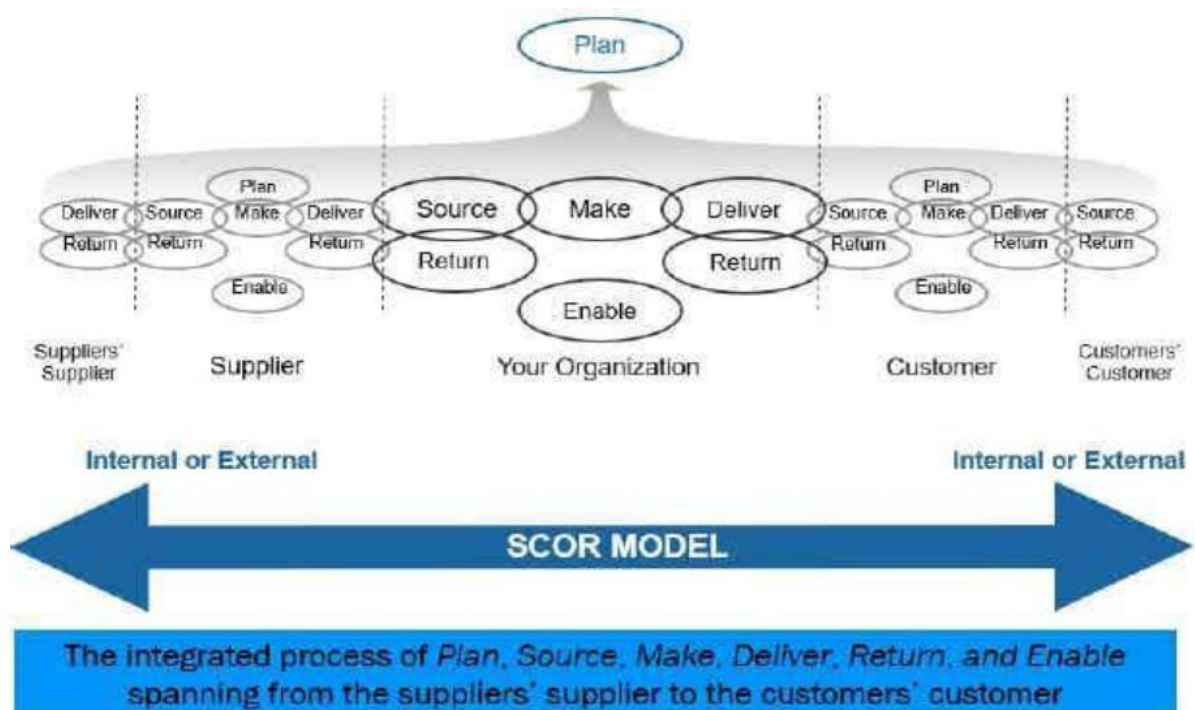


Nexus Nugget Notes

- ▶ • SCOR (Supply Chain Operations Reference)
- ▶ • PCF (Process Classification Framework) from APQC — good for support and management processes
- ▶ • Industry-specific frameworks such as those in the energy distribution, oil and gas production, telecommunications, and insurance industries

SCOR

- ▶ The Association of Supply Chain Management (ASCM) is a consortium that markets a reference model called SCOR (Supply Chain Operations Reference).
- ▶ Organizations seeking a means of understanding their internal operations, especially the supply chain, for the purpose of process analysis, comparison with competitors, and assessment of improvements may subscribe to this reference model.
- ▶ It provides standards, common vocabulary metrics, and flexible integration of supply chain modeling projects.
- ▶ SCOR process frameworks have one component that others don't have — metrics.
- ▶ The metrics are cross-industry and can be applied for benchmarking exercises.





PCF (APQC Framework)

- ▶ In PCF, the primary (operations) processes are to develop vision and strategy (1.0), design and develop products and services (2.0), market and sell products and services (3.0), deliver products and services (4.0), and manage customer service (5.0)
- ▶ If PCF from APQC was a more customer-oriented services model, the primary business processes would be to engage customers, transact business, fulfill customer expectations, and service customers.

Business Process Models

- ▶ Business process models are the responsibility of a Process Owner.
- ▶ The business perspective shows what and how.
- ▶ Each business process model has a process owner who is accountable for the process's performance and has the authority to add or remove resources that affect the performance of the process.
- ▶ The business perspective, used by the Process Owner:
 - ☐ • Provides the business context
 - ☐ • Describes the business process
 - ☐ • Defines the scope of the business process for analysis and implementation of changes
- ▶ The business perspective is captured in business process models.

What Business Process Models Include

- ▶ End-to-end primary processes. Business process models depict the major events, activities, and results for each of the major end-to-end processes, their sub-processes, and their interactions with their environment.
- ▶ Support processes and management processes.
 - ☐ Business process models also describe the support and management processes and how they interact with or support the primary processes.

Workflow Models

- ▶ Workflow models are the responsibility of an operation's manager.



Nexus Nugget Notes

- ▶ A workflow defines the tasks, information, and documents that are passed from one participant to another for the next action, according to a set of procedural rules.
- ▶ Operations managers who are responsible for monitoring performance and who look for ways to continuously improve operational performance take an operations perspective.
- ▶ Workflow models are more detailed than enterprise or business process models — they are at the third level of detail in a Business Architecture.
- ▶ In this context, functions are positions, departments, and systems
- ▶ At this third level of detail, it is easy to understand the activities that are performed in a functional business unit.
- ▶ By rolling the activities up to the business process level, it is easy to see how all work fits into processes and how the activities play roles in producing the end product of the process.

Task Steps

- ▶ Tasks are also called activities, procedures, and responsibilities but will be called tasks in this guide.
- ▶ At the fourth level, the task steps level, the organization and BPMS designers usually have enough detail to tie rules to specific worker or systems actions.
- ▶ Those who actually do the work commonly focus on their tasks and the steps that make up the tasks. Task steps identify how work gets done.

Capturing Process Information and Modeling Participants

- ▶ • Direct observation: Direct observation is a good way to document current procedural detail.
 - ❑ Direct observation also entails the risk of the performers doing what they think you want to see, rather than what they normally do.
- ▶ • One-on-one interviews: Interviews can create a sense of ownership and participation in the process of modeling and documenting business processes.
 - ❑ Scheduling and conducting interviews is more time consuming than other methods.
- ▶ • Written feedback: Written feedback requires minimal time and limited disruption of duties.



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- ☐ Written feedback is often prone to the same problems encountered with one-on-one interviews
- ▶ ● Structured workshops: Structured workshops are focused, facilitated meetings where enough subject-matter experts and stakeholders are brought together to create the model interactively.
 - ☐ Due to travel and meeting expenses, workshops may be more costly than other methods.
- ▶ ● Web conferencing: Web-based conferencing can deliver many of the same benefits as face-to-face workshops, but they work best with smaller groups.
 - ☐ Using web conferencing technology requires facilitators who are skilled in conducting remote meetings effectively.
- ▶ ● Process mining: Process mining is a process analysis method that aims to discover, monitor, and improve real processes (processes not assumed) by extracting knowledge easily from available event logs in the systems of record for current information of an organization.
 - ☐ Process mining seeks the confrontation between event data (observed behavior) and process models (hand- made or automatically discovered).

Modeling Participants

- ▶ ● Business strategists
- ▶ ● Business managers
- ▶ ● Financial analysts
- ▶ ● Auditors and compliance analysts
- ▶ ● Process performance analysts
- ▶ ● Requirements analysts
- ▶ ● Systems analyst

Frameworks and Reference Models

- ▶ Framework and reference models maximize the value and usefulness of the set of models within the context of the whole.
- ▶ A framework may range from a simple conceptual pyramid to a complex set of modeling products with rules governing what will be represented where.
- ▶ In the pyramid, each level of model summarizes the level beneath it and decomposes the level above.



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- ▶ The pyramid may have a simple value chain at the top level that provides an instant overall summary of what the set of models will explain.
 - ☐ • Federal Enterprise Architecture Framework (FEAF)
 - ☐ • Ministry of Defense Architecture Framework (MODAF)
 - ☐ • Department of Defense Architecture Framework (DoDAF)
 - ☐ • The Open Group Architectural Framework (TOGAF)
- ▶ The last framework listed, TOGAF, is a general-purpose version of a complex framework originally developed by DoD, supported by The Open Group, and still used by DoD in conjunction with DoDAF.

Reference models ease analysis of processes

- ▶ A reference model provides a common way of viewing some aspect of a process and a common way of describing it for easy analysis and comparison.
 - ☐ • Performance reference model
 - ☐ • Business reference model
 - ☐ • Service component reference model
 - ☐ • Data reference model
 - ☐ • Technical reference model

Modeling Techniques and Tools

- ▶ There are many modeling tools and techniques available, ranging from use of simple whiteboards, butcher paper, or sticky notes to sophisticated and specialized BPM tools that include modeling and data stores for those models and processes.
- ▶ Microsoft Visio is still the most used process modeling tool

Process Validation and Simulation

- ▶ Process validation is a way to ensure desired outcomes; it uses data from all stages of a process to verify that the process is capable of consistently delivering quality products or services.
- ▶ Process simulation is a type of process validation that can show how a process will behave over time.
- ▶ Process simulations are a form of model that provides valuable insight into process dynamics.
- ▶ Simulations can be manual or, using process simulation tools, electronic.



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- ▶ Process laboratories are often used as part of a process improvement, redesign, or reengineering effort.
- ▶ Some process simulation tools include load analysis capabilities
- ▶ Load analysis tests components of a system under particular conditions.
 - ❑ For example, simulating peak, average, and valley transaction loads predicts impact on cycle time, resource requirements, and bottlenecks.
- ▶ Some process simulation tools can also present animations of the simulations



Process Analysis



Nexus Nugget Notes

Introduction to process analysis

- ▶ The first step in defining a new process or updating an existing one is to create a common understanding of the current state of the process and how the process achieves the stated business objectives.
- ▶ This common understanding is gained through process analysis.

What Is Process Analysis?

- ▶ Process analysis identifies and examines all process-related activities and measures the operations and effectiveness of those activities in meeting the organization's goals.
- ▶ A process is a defined set of sequential or parallel activities that achieve a particular, definable, measurable end result.
- ▶ In the context of Business Process Management, a business process is defined as an end-to-end set of activities that delivers a product or service.
- ▶ The analysis often includes a study of the business environment, the organizational context of the process, factors that contribute to the operating environment, industry characteristics, government and industry regulations, market pressures, and competition.

Why Do Process Analysis?

- ▶ Process analysis is an essential tool to evaluate how efficiently the organization is working to meet its objectives.
- ▶ The principal benefit of analyzing the current state of the process is a shared understanding of how the work gets done.
- ▶ Process analysis addresses fundamental process changes that allow an organization to achieve its goals and strategies.
- ▶ Process analysis measures the efficiency of a process by quantifying resources used while performing the activities of the process.

Information generated from a process analysis includes contextual information such as a:

- ▶ • Clear statement of the strategy, goals, and objectives of the organization
- ▶ • Description of the business environment and context of the process (why process exists)
- ▶ • View of the process within a larger cross-functional process



Once the organizational context of the process is established, the process analyst collects additional information including:

- ▶ ● Inputs and outputs of the process, including internal and external suppliers and consumers
- ▶ ● Roles and handoffs of each business unit in the process
- ▶ ● An evaluation of scalability and resource utilization
- ▶ ● Business rules that control the process
- ▶ ● Performance metrics that can be used to monitor the process
- ▶ ● A summary of opportunities identified to increase quality, efficiency, or capacity

When to Perform Analysis

- ▶ Continuous Monitoring
 - ☐ Business Process Management (BPM) is a committed part of an overall business strategy, rather than a single activity completed in the context of a single project.
 - ☐ BPM implementations should include the capability to continuously evaluate processes, as they are performed, using real-time monitoring tools.
- ▶ Event-Triggered Analysis
 - ☐ Strategic Planning
 - Most companies regularly review and update their strategic plans.
 - ☐ Performance Issues
 - When performance issues emerge, process analysis can help identify the causes of poor process performance.
 - ☐ New Technologies
 - Advances in technology can improve process performance or decisions within the workflow that directly affect process performance.
 - ☐ Merger, Acquisition, or Divestiture
 - To achieve value from mergers or acquisitions, process analysis is critical. Process analysis helps standardize primary, support, and management processes, which helps to reduce



Nexus Nugget Notes

infrastructure costs post-acquisition through better IT application rationalization.

- In the case of divestitures, process analysis prior to the divestiture can help ensure that critical processes survive in the spun-off division or business unit.
- ❑ Regulatory Requirements
 - They can integrate regulation-driven processes with internal quality controls to achieve more cost savings and more robust compliance than organizations that look at regulatory compliance as a costly add-on.

Process Analysis Roles

► Optimal Team Attributes

- ❑ A single individual can perform process analysis, but the best practice is to form a cross-functional team.

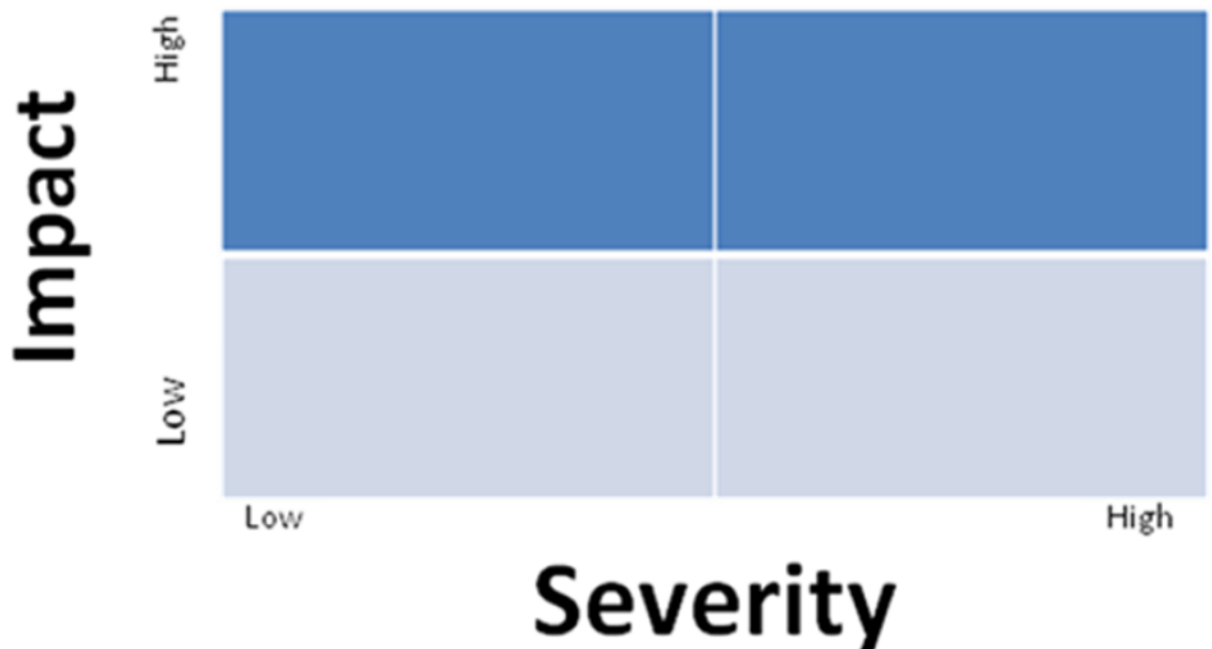
Role	Responsibility
Analysts or Architects	● Decide the depth and scope of the analysis, how it is analyzed, and then proceed to perform the analysis ● Project manage or facilitate to help project advancement ● Provide documentation and final reports to the stakeholders and executive leadership
Facilitators (Lead Architects)	● Lead process analysis teams ● Facilitate with unbiased view to let the group discover the path through the analytical techniques chosen ● Manage group dynamics
Subject Matter Experts	● Provide insight into the business process



- Provide insight into both the business and technical infrastructure that supports the process

Prioritize the Process

- ▶ Large-scale or cross-functional analysis should include governance that establishes criteria for prioritizing and ordering the processes to be analyzed.
- ▶ For example, an organization may identify the following criteria for high-impact processes:
 - ☐ ● Customer-facing processes
 - ☐ ● High impact on revenue
 - ☐ ● Aligned to other processes that are high value to the organization
 - ☐ ● Critical to coordinate with cross-functional impact
- ▶ Another prioritization method involves creating a two by two matrix:



Scope the Depth of the Analysis

- ▶ Scoping the depth of the processes included in the analysis is one of the first actions of the process team.
- ▶ The depth of the analysis is the beginning and end of the analysis.



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- ▶ Scoping is critical to decide how far the project will reach, how much of the organization it will involve, and the impact any changes will have upstream and downstream of the processes analyzed.
- ▶ For example, to analyze an HR recruiting process, the scope of the analysis may include the activities from applicant screening through the candidate selection process.
- ▶ Once the scope of the analysis is determined, the analyst should also consider the depth of the effort.

Using Process Frameworks for Analysis

- ▶ Three enterprise-level process frameworks for analyzing processes include VCOR, SCOR, and PCF.
- ▶ Only VCOR and SCOR have standard processes and metrics built into each process element and link level one to level three.
- ▶ The APQC PCF doesn't have standard metrics built into the model (they are industry specific).
- ▶ Metrics are part of APQC's benchmarking practice and are a separate paid offering.

Performing the Analysis

- ▶ Business Context
 - ❑ The goal is to ensure that conclusions are based on facts extrapolated from the data and not on hearsay or generalizations.
- ▶ Organizational Culture Context
 - ❑ That culture includes how work is performed and what motivates members to do the work.
 - ❑ Cultural changes may lead to unintended consequences as new processes are put into place.
- ▶ Performance Measurement
 - ❑ Performance issues can be defined as gaps between how a process is currently performing in relation to how it should be performing to meet the organization's objectives.
 - ❑ A methodical analysis, often called root cause analysis, can identify the nature of the gaps, why they exist, and what changes need to be made to rectify the situation.
- ▶ Customer Interactions



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- ☐ Generally, the fewer required interactions between a customer and a given service, the more satisfied the customer.
- ▶ Handoffs
 - ☐ Any point in a process where work or information passes from one system, person, or group to another is a handoff for that process.
- ▶ Business Rules
 - ☐ Business rules impose constraints and drive decisions that affect the nature and performance of a process.
- ▶ Capacity
 - ☐ Capacity analysis probes upper and lower limits and determines whether production factors can appropriately scale to meet demands.
- ▶ Bottlenecks
 - ☐ A bottleneck is a constraint in a process that creates a backlog of work to be done.
- ▶ Variation
 - ☐ Variation inevitably slows down a process and requires more resources to properly scale.
 - ☐ If the nature of the organization requires variation as its core business strategy, then look for places where some variation can be reduced, which could save on the overall cycle time of the process.
- ▶ Cost
 - ☐ Understanding the cost of a process helps the team understand its value to the organization in real dollars.
- ▶ Human Involvement
 - ☐ Activities performed by real people are more complex because they involve judgment and skills that cannot be automated.
- ▶ Process Controls
 - ☐ Process controls are put in place to ensure adherence to legal, regulatory, or financial constraints or obligations.
 - ☐ Process controls define the control, while control processes define the steps to achieve that control.
 - ☐ Process controls and control processes are related, but distinct.

Gathering Information



Nexus Nugget Notes

- ▶ The types of information gathered depend on the organization and process being analyzed.
- ▶ Interviewing
 - ❑ These interviews can be in a formal face-to-face setting or can be conducted via phone or e-mail.
 - ❑ Typically, the formal face-to-face setting is more productive, as it allows for greater dialog and discussion about what is (or was) actually happening.
- ▶ Observing
 - ❑ Either through reports or system transaction logs, or by observing the human interactions with the process, directly observing the process will help create an understanding of what the process is actually doing.
- ▶ Researching
 - ❑ Begin by researching any documentation or notes about the existing process.

Analyzing the Business Environment

- ▶ Porter's Five Forces, SWOT, critical success factors, and benchmarking.
- ▶ Benchmarking
 - ❑ Benchmarking is in the Process Analysis section to emphasize that is should be performed after documenting as-is or current state business processes.
 - ❑ to compare the performance of a process to similar processes in your industry and with competitors.
- ▶ Competitive analysis
 - ❑ techniques include obtaining information from public sources, industry trade associations, websites, customers, or consulting firm surveys.
- ▶ Critical Success Factors
 - ❑ Successful BPM efforts typically involve the consideration of a number of factors including organizational, management, process, and technology practices.
- ▶ Porter's Value Chain Analysis
 - ❑ Porter's value chain allows process analysts to look at the process from a macro view that includes suppliers, vendors, customers, and so on.



Analyzing Information Systems

► Data Flow Analysis

- ☐ Data flow analysis is a technique for mapping how data flows through a system.
- ☐ The goal of data flow analysis is to understand how points in a process interact with that data through the process.
- ☐ Data flow analysis helps the analyst uncover bottlenecks, unneeded queues or batches, and interactions that do not add value.

► Business Rules

- ☐ These rules often are essential to smooth business operations, yet are poorly understood by the people whose work depends on them.

► Systems Documentation and Suitability for Use

- ☐ Systems documentation from a software vendor usually includes data flow diagrams along with the system interfaces.
- ☐ If data flow diagrams are not available, reverse engineering may be the only avenue to data discovery.

► Process Mining

Analyzing the Process

► Cost

- ☐ Also known as activity-based costing
- ☐ analysis is a simple list of the cost per activity, totaled to show the cost of the process.
- ☐ Cost analysis is often used in conjunction with other types of analysis.

► Root cause

- ☐ Root cause analysis (RCA) is a systematic method for identifying origins of problems or events and an approach for responding to them.
- ☐ 5-why analysis: A simple problem-solving technique that helps users get to the root of the problem quickly.
 - This strategy involves looking at a problem and asking why (what caused this problem).
- ☐ Failure mode and effects analysis: systems engineering process that examines failures in products or processes.



Nexus Nugget Notes

- ☐ Fishbone diagram or Ishikawa diagram: Derived from quality management, fishbone is a systematic way of looking at effects and the causes that create or contribute to those effects.
- ☐ Pareto analysis: Pareto is a statistical technique in decision making used to analyze a select and a limited number of tasks that produce significant overall effect. The premise is that 80% of problems are produced by a few critical causes (20%).
- ▶ Cycle Time Analysis
 - ☐ Cycle time analysis is a method for measuring process time.
 - ☐ Also known as a duration analysis, it looks at the time each activity takes within the process.
 - ☐ The goal of cycle time analysis is to reduce process time.
 - ☐ Cycle time analysis is a common tool in Lean and value stream mapping.
- ▶ Sensitivity Analysis
 - ☐ Sensitivity analysis is a method to measure the effects of change on a process.
 - ☐ Also known as a what-if analysis
 - ☐ A sensitivity analysis helps process analysts understand process responsiveness and variability.
 - ☐ Process responsiveness is a measurement of how well a process will handle changes to parameters.
 - ☐ Process variability is a measurement of how output of a process changes when parameters change.
 - ☐ Process variability is a measurement of how output of a process changes when parameters change.
- ▶ Risk Analysis
 - ☐ Risk analysis is a method to identify actions and events that may have a negative effect on the organization.
 - ☐ Similar to the sensitivity analysis, the risk analysis may include examining the effectiveness of process control points.

Analyzing Human Interactions

- ▶ Direct Observation
 - ☐ The primary advantage of direct observation is that analysts can see the current process firsthand.



Nexus Nugget Notes

- ▶ Apprentice Learning
 - ❑ Doing a task yourself offers a deeper understanding than watching someone do it.
- ▶ Activity Simulation
 - ❑ Individual walk-through. An individual analyst carefully steps through each activity, observing its inputs, outputs, and the business rules that govern its behavior.
 - ❑ Group walk-through. A group of process participants sits in a conference room, each taking the role of a process participant, and talking through the process.
 - ❑ Video walk-through. A final variation is to record video of the group walk-through for later analysis and discussion to ensure nothing important has been omitted.
- ▶ Workplace Layout Analysis
 - ❑ The activities used to analyze workflow and the movement of materials and resources as the work is completed are further detailed in the concepts of Lean.
- ▶ Resource Allocation Analysis
 - ❑ Resource allocation analysis is a method for examining how assets of an organization are used in a process.
- ▶ Motivation and Reward Analysis
 - ❑ One commonly overlooked analytical component is the examination of human motivational and reward systems in place for the process.

Document the Analysis

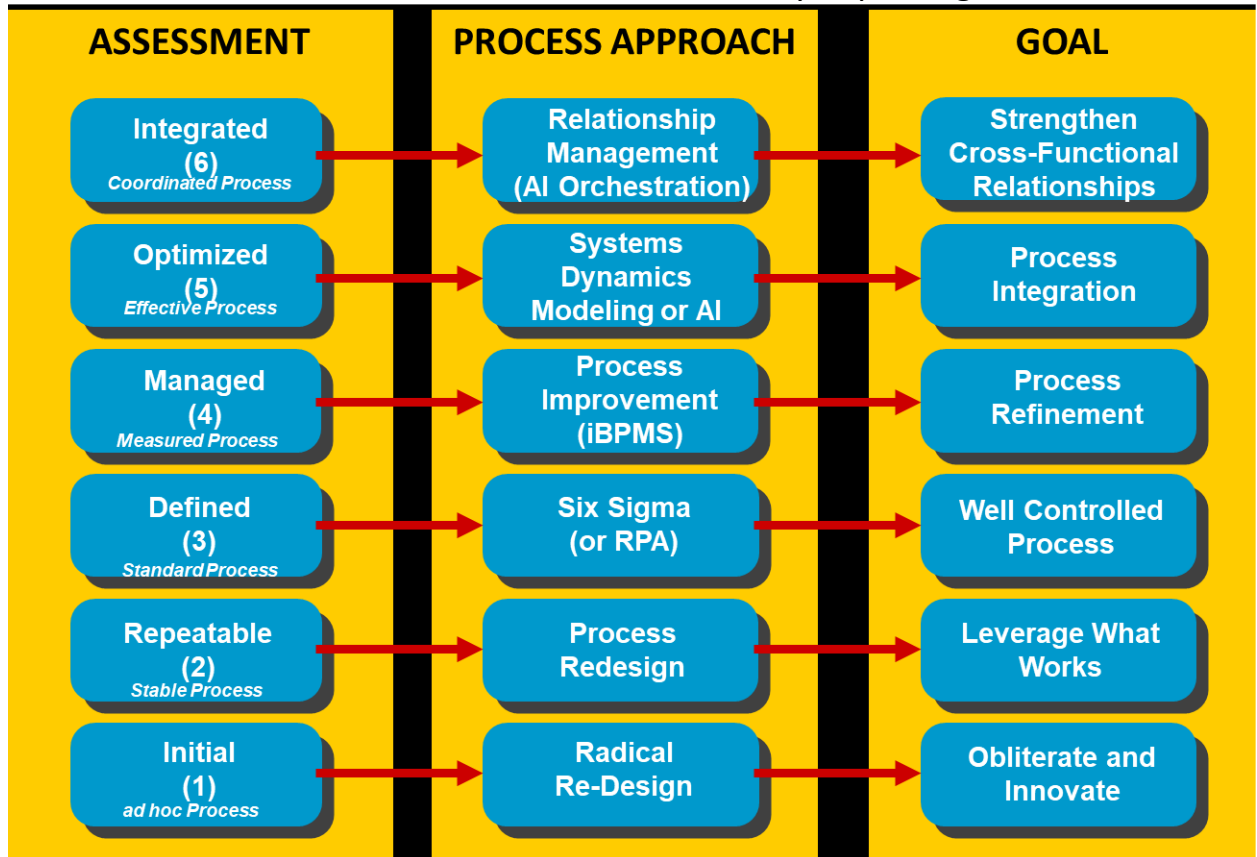
- ▶ The final step in an analysis is the generation of reports and other documentation regarding the findings.
- ▶ The documentation of the analysis serves several purposes.
- ▶ It acts as a formal agreement among those who participated as to the accuracy of the analysis.
- ▶ Next, it is the basis for presenting the results of the analysis to management.
- ▶ The documentation should clearly present the current state and include deliverables that provide the information necessary to consider process change.



Nexus Nugget Notes

Assess Business Process Maturity

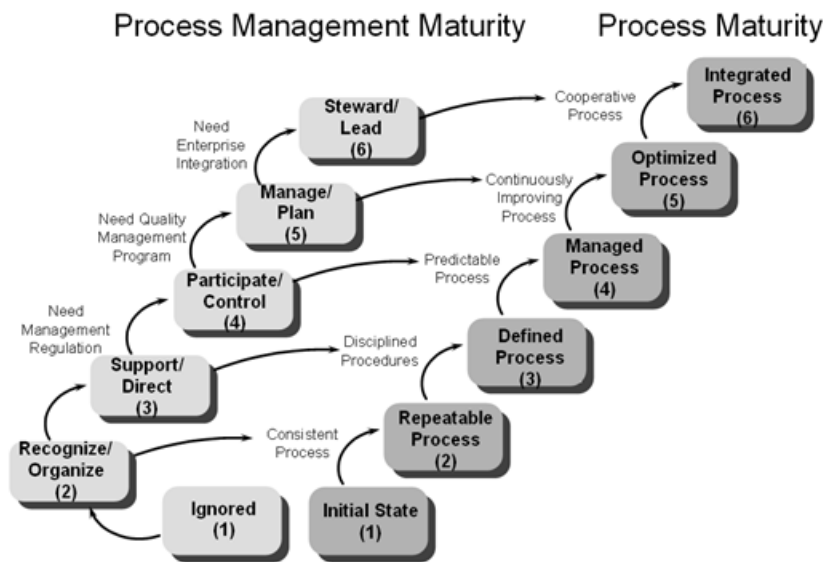
- ▶ Process maturity refers to how close a process is to being complete.
- ▶ For a process to be mature, it has to be complete in its usefulness, automated, reliable in information, and continuously improving.



Process Management Maturity and Process Maturity Levels



Nexus Nugget Notes





Process Design



What Is Process Design?

- ▶ Process design is the creation of specifications for new and modified business processes within the context of business goals, process performance objectives, workflows, business applications, technology platforms, data resources, financial and operational controls, and integration with other internal and external processes.
- ▶ Both a logical design (what activities are performed) and a physical design (how the activities are performed) are included as deliverables.
- ▶ Process design is the creation or retooling of the major cross-functional processes that deliver value to customers.

Process Design Roles

- ▶ The level of involvement of each role depends on process scope and degree of change.
- ▶ Executive Leadership :The role of executive leadership during the design of a process is to ensure that the process designed will correctly meet the needs of the organization.
- ▶ Process Design Team :A common practice is to select a cross-functional team that represents stakeholders, participants, subject matter experts, and customers who interact with the process.
 - ❑ It is important that the designer validate the design with stakeholders, participants, and customers.
- ▶ Subject Matter Experts :When designing a new process or revising a process, it is critical to involve the individuals closest to the process who have the expertise necessary to ensure the process is a success.
- ▶ Participants and Stakeholders :A participant is anyone who participates in or has activities that affect the process.
- ▶ Customer: the customer should be allowed to test the process and comment on its effectiveness.
 - ❑ Involving the customer during the design stage increases the chances that process goals and the customer's expectations are properly addressed.
- ▶ Project Manager: is responsible for the schedule, project plan, communication plan, managing scope, and mitigating risk.
- ▶ Facilitator: This individual (or team of individuals) leads the process design team through developing the future design of processes.



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- ▶ Process Owners: help ensure that the new design meets required objectives while remaining within the assigned budget.

Key Activities and a Roadmap for Design

- ▶ • Designing the new process
- ▶ • Defining activities within the new process
- ▶ • Defining rules that control the activities
- ▶ • Defining handoffs of process between functional groups
- ▶ • Defining desired metrics in the new process
- ▶ • Gap and comparisons to existing analysis
- ▶ • Creating the physical design
- ▶ • IT infrastructure analysis and design
- ▶ • Model simulation, testing, and acceptance
- ▶ • Creating an implementation plan
 - ❑ Although key activities are listed here in a logical order, they do not always occur in that order, and many of the activities occur simultaneously.

Designing the New Process

- ▶ There are many ways to design the new process, from using simple whiteboards to sophisticated software modeling tools that allow the storage and retrieval of processes.
- ▶ The correct tool, methodology, and activity to define the process depend on the project goal, the culture of the organization, and the current infrastructure.
- ▶ involve as many people as possible from the different functions that interact with the process.
- ▶ Employing the breadth of experience and knowledge of those closest to the process
- ▶ the simplest designs are most often the best designs.

Defining Activities in a New Process

- ▶ Best practices when listing key activities include: focus on the activities not the actors, and keep the process as simple as possible.
- ▶ The simpler a process, the more likely it will be completed without error.



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- ▶ Further, activities that can be completed in parallel with other activities help move a process along faster.

Comparison to Existing Process

- ▶ A comparison analysis allows a gap analysis to be performed, which will show the level and scope of changes.
- ▶ Process analysis results should show conditions that created variation in process execution and performance.
- ▶ a comparison analysis also allows the process design team to revisit the existing state and ensures that the new design does, in fact, meet the expected goals and resolve the issues discovered in the analysis stage.

Creating a Physical Design

- ▶ The list of key activities and order of execution is the what of your process design (the logical design).
- ▶ This logical design focuses on the expected business value, relevant performance metrics, appropriate activities and tasks, and linkages to other internal and external business processes.
- ▶ This physical design describes how each activity or task is to be performed — manual or automated means or a combination of each.
 - ☐ Workflow. The aggregation of activity within a single business unit.
 - ☐ Activity. A combination of work from one or more processes. Work is organized around efficiency.
 - ☐ Modeling. Shows work as a flow that describes each activity's relationship with all the others performed in the business unit.

IT Infrastructure Analysis and Design

- ▶ What software or systems best match the needs of the process?
- ▶ Are there limitations in the current infrastructure that limit the design?
- ▶ Can the design be implemented quickly?
- ▶ How will the design decisions affect the organization?
- ▶ Can a staged approach be employed?
- ▶ What will the new implementation cost (including training, technology, and so on)?
- ▶ Are there vendors that can assist in the implementation?



Creating an Implementation Plan

- ▶ Implementation concerns should be addressed at all stages of the process improvement initiative, especially during the design stage.
 - ❑ Defining change management techniques that ensure employee support of the new process
 - ❑ Identifying existing systems that will be affected
 - ❑ How change to affected systems should be accomplished (incremental shift or immediate change)
 - ❑ Whether the new process will be piloted or tested
- ▶ Once the new process has been designed, the concerns can be reviewed using an implementation plan created to appropriately address those concerns.

Model Simulation and Testing

- ▶ As a final activity in the design process, the new process should be tested.
- ▶ Role Playing: In role playing, you send fake inputs through the process to test it and assign relevant process roles to people (not necessarily team members).
- ▶ Practice Run: In a practice run, the new process has been designed, real inputs are used, and the people who will actually be working in the process participate.
- ▶ Simulation: Simulation involves the use of computer software and hardware.
- ▶ Piloting: During a pilot, the new design is run for real, but the scope of the process is constrained.

Advantages of Role-playing, practice, and simulation:

- ▶ First, there is no risk
- ▶ Second, role-playing, practice, and simulation can demonstrate to people the dependability of the new design.

Advantages of Piloting:

- ▶ First, risk is constrained
- ▶ people working in the pilot can become super-trainers
- ▶ skeptics to visit the pilot location



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- ▶ all involved in the process from senior management to all participants be allowed to comment on the new process.

Process Design Principles

- ▶ Design from the Outside-In Starting with Customer Interactions
- ▶ Design Around Value-Adding Activities
- ▶ Minimize Handoffs
- ▶ Have Work Performed Where it Makes the Most Sense
- ▶ Provide a Single Point of Contact
- ▶ Create a Separate Process for Each Cluster
- ▶ Ensure a Continuous Flow
- ▶ Reduce Batch Size
- ▶ Bring Downstream Information Needs Upstream
- ▶ Capture Information Once at the Source and Share It
- ▶ Involve as Few Actors as Possible
- ▶ Redesign, then Automate
- ▶ Ensure Quality at the Beginning
- ▶ Standardize Processes
- ▶ Use Co-located or Networked Teams for Complex Issues
- ▶ Consider Outsourcing Business Processes

Process Architecture Model Levels

- ▶ (1) High-level process. The highest-level is a model that provides a full end-to-end, high-level view of the process. This model can show subprocesses and may show high-level problems and application systems.
- ▶ (2) Subprocesses. Subprocess models are the next level and divide the work into business functions and then align the business functions by business unit.
- ▶ (3) Workflow. Workflow within a business unit is a third level, and it identifies the activities that are performed. This level model can also be used to show the relationship between activities, and with activities from other functions and subprocesses that are also being performed in the business unit.
- ▶ (4) Scenarios. At the fourth level of detail (scenarios) you can see how work that is performed in the business unit is driven by events, timing, or data values. By rolling tasks up to activities, activities to workflow, and workflow



to subprocesses, it is easy to see how all work fits into processes and how it plays a role in producing the end product of the process.

Level 1: Value Chain (Stream)

Level 2: Process

Level 3: Sub-Process (Business Function)

Level 4: Workflow (Business Unit)

Level 5: Tasks & Scenarios

Process Rules

- ▶ As activities are defined, the need for certain business rules will become apparent.
- ▶ Business rules define how or when a particular activity can be performed and help control the flow of the activity.

Simulation of Future State

- ▶ Once the current-state performance is completely analyzed, then modeling of the desired future-state process begins.
- ▶ The BPM practitioner can then adjust the parameters and continue running simulations until the process performs as desired.
- ▶ Simulation builds a data-driven business case for justifying your process design or improvement.



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Process Compliance

- ▶ ● ANSI. American National Standards Institute.
- ▶ ● ISO. International Standards Organization.
- ▶ ● HIPAA. Health Insurance Portability and Accountability Act.
- ▶ ● SOX. Sarbanes-Oxley.

Process Design Success Factors

- ▶ Executive leadership
- ▶ Process ownership
- ▶ Incentive and rewards
- ▶ Cross-functional teams
- ▶ Continuous improvement
- ▶ Commitment to investment
- ▶ Alignment with strategy



Process Performance Measurement



Process Performance Measurement

- ▶ Process performance measurement is the formal, planned monitoring of process execution and the tracking of results to determine the effectiveness and efficiency of the process.

Key Process Measurement Definitions

- ▶ Measurement is directly related to the quantification of data (or data set) in an acceptable standard and quality (accuracy, completeness, consistency, and timeliness).
 - ❑ To illustrate the concept, take ten inches as an example of measurement. Inches are the standard and ten identifies how many multiples or fractions of the standard are being verified.
- ▶ Metric is a quantitative measure that a system, component, or process has of a given data attribute. Metric represents an extrapolation or a mathematical calculation of measurements resulting in a derived value.
 - ❑ For instance, number of defective products in the total number of products produced (defect number / total production) is a metric.
- ▶ Indicator is a representation of a measurement or metric in a simple or intuitive way to facilitate its interpretation against a reference or goal.
 - ❑ An example of an indicator is, “green indicator is good; red indicator is bad.”

Metrics fall into three categories:

- ▶ (1) Product metrics. Describe the product characteristics such as size, complexity, design features, performance, and quality level.
- ▶ (2) Process metrics. Describe process outcomes such as customer satisfaction, mean time to failure (MTTF), and effectiveness of defects removal.
- ▶ (3) Project metrics. Describe project measurements and execution. Examples include resources allocation, cost, time, and productivity.

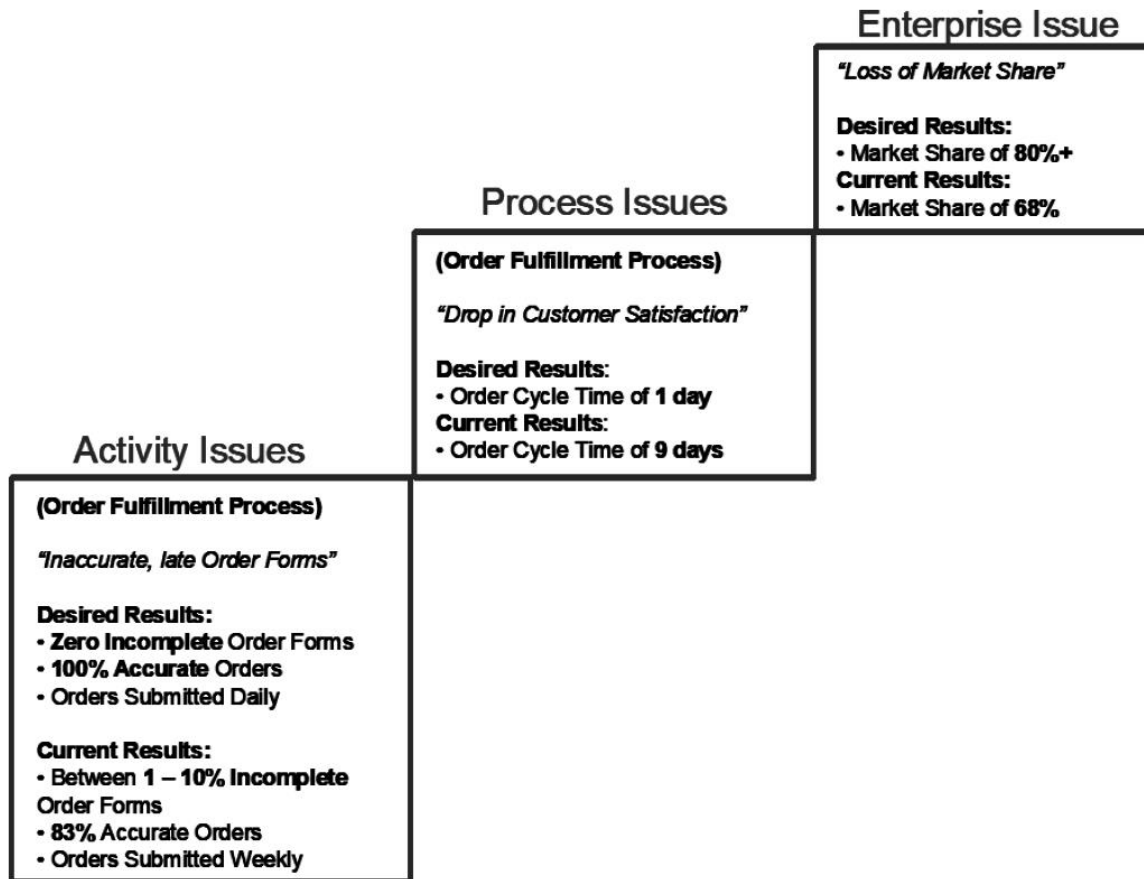
Order-to-Cash Metrics at Three Levels of Process

- ▶ Metrics evaluated in the order-to-cash process depend on point of view. Enterprise point of view is usually executive level (C-suite).
- ▶ Process point of view looks at functional areas that own or manage the metric.



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- ▶ At the individual point of view are the people doing task-level work like order processing (warehousing, customer service, logistics, and so on).



Key Process Performance Definitions

- ▶ These metrics are based on fundamental metric dimensions of time, cost, capacity, and quality.
- ▶ Time: A measurement of process duration.
 - ❑ Measures the time it takes from the start of a process to the completion of that process in terms of the output.
- ▶ Cost: A measurement of the monetary value associated with a process.
 - ❑ Resource cost: A measurement of the monetary value associated with the resources (human or non-human) required to complete a process.
 - ❑ Opportunity cost: The value that is lost from the process by not getting the resultant output of the process.
- ▶ Capacity: An amount or volume of a feasible output associated with a process



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- ☐ Revenue: Potential increase in earnings based on higher output. Capacity usually has an associated revenue connotation.
- ☐ Throughput: Amount of material or items passing through a system or process. Capacity can have an associated throughput connotation.
- ▶ Quality: Standard of something as measured against things of a similar kind. Usually expressed as a percentage of actual to optimal or maximum in process terms. Can take many forms.
 - ☐ Satisfaction: A measurement of customer happiness, usually associated with a service level expectation on the part of customers.
 - ☐ Variation: A measurement of the amount, extent, rate, or degree of change. Generally expressed as the difference between the actual and target or expected result.
 - ☐ Error or defect rate: An example of variation in the measurement of errors associated with the output of a process.

Process performance metrics (PPM) Characteristics

- ▶ Process performance metrics (PPM) derives from process goals and allows the Process Owner to control process performance in terms of time, cost, capacity, and quality.
- ▶ Alignment: aligned with corporate strategies and objectives.
- ▶ Accountability: owned by an individual or group on the business
- ▶ Predictive: leading indicators of desired performance.
- ▶ Actionable: users can intervene to improve performance before it's too late.
- ▶ Few in number: a few high-value activities, or on the overall effectiveness of the process.
- ▶ Easy to understand: should be straightforward, not based on complex indexes
- ▶ Balanced and linked: should balance and reinforce each other, not compete and confuse
- ▶ Transformative: should trigger a chain reaction of positive changes in the organization
- ▶ Standardized: based on standard definitions, rules, and calculations
- ▶ Context-driven: by applying targets and thresholds so users can gauge their progress over time.
- ▶ Reinforced: may be enhanced by attaching compensation or incentives to them



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- ▶ Relevant: they must be reviewed and refreshed periodically.

Some cross-functional processes that drive enterprise-level metrics include

- ▶ Order to cash
- ▶ Procure to pay
- ▶ Campaign to quote
- ▶ Plan to fulfill
- ▶ Manufacture to distribution
- ▶ Issue to resolution

Measurement Methods

- ▶ There are two very common methods for measuring a process: manual and automated.
- ▶ Modeling and Simulation: Modeling and simulation is a simple method (using modeling software) for measuring the current state process performance and developing desired future states of process performance.
- ▶ Value Stream Mapping: A Lean planning tool can be used to visualize the value stream of a process, department, or organization.
 - ❑ First, follow a product's production path from beginning to end and draw a visual representation of every process in the material and information flows.
 - ❑ Second, draw a future state map of how value should flow.
- ▶ Activity-Based Costing: An accounting methodology that assigns costs to activities rather than products or services.
 - ❑ Used to discover opportunities for cost or efficiency improvement
 - ❑ Focuses on overhead, traces rather than allocates each expense to a particular cost object
 - ❑ Makes indirect expenses direct
- ▶ Statistical Methods: The science of collecting, analyzing, presenting, and interpreting data

Walter A. Shewhart (1931) categorized two sources for process variation:

- ▶ $[\text{Total variation}] = [\text{Common cause variations}] + [\text{Assignable cause variations}]$
- ▶ • Common cause variation. Due to natural and inherent characteristics of the process, variation occurs randomly around the mean.



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- ☐ Synonyms for common cause are non-assignable cause or natural patterns.
- ▶ • Assignable cause variation. Variation due to unexpected factors or occurrences that hinder process performance and affect process outcome.
 - ☐ A variation occurs from the mean or persistently on one side of the mean.
 - ☐ If it represents a problem, it should be addressed and eliminated.
 - ☐ Synonyms for assignable cause are special cause or unnatural patterns.
- ▶ Assignable causes can be transient or persistent.
- ▶ Transient causes can be treated as a risk to the process, and actions should be taken in order to mitigate the risk (transient causes are rather infrequent and affect the process in an unexpected way).
 - ☐ An example of a transient cause is the inability to complete an activity due to power outage in an urban zone where power outage is rare.
- ▶ A persistent cause, on the other hand, is something that has not been treated by the process as an inherent part of the process and that becomes a frequent and highly expected problem.



Technology and Transformation



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3 types of transformation: operational, operational model, and strategic:

- ▶ Operational. What you are currently doing, but faster, cheaper, better. Many companies that are doing digital are mostly doing this type. Sadly, focusing on doing today better only creates parity with competitors and is only a recipe for short-term survival.
- ▶ Operational model. Doing what you are currently doing in a fundamentally different way. Netflix is a great example of this type. Operational model transformation changes the metrics an organization uses to track performance.
- ▶ Strategic. Involves changing the very essence of an organization. Amazon going from online retail to a cloud computing company is a great example of this type.

Business and Digital Transformation

- ▶ Business transformation is the process of fundamentally changing the people, processes, systems, and technology across an entire business or business unit to achieve measurable improvements in efficiency, effectiveness, and customer satisfaction.
- ▶ Digital transformation is the process of using digital technologies to create new — or modify existing — business processes, culture, and customer experiences to meet changing business and market requirements. This definition comes very close to type 3, strategic transformation.

Enterprise and Business Architecture Management

- ▶ Technology management begins and ends with enterprise architecture
- ▶ Enterprise Architecture is the process by which organizations create conceptual strategic blueprints.
- ▶ There are four domains of Enterprise Architecture:
 - ❑ • Business Architecture. Translates business unit strategy or objectives into business process focus areas and corresponding capabilities that reflect a view of the functions and processes required for an organization's business to be successful.
 - ❑ • Data (Information) Architecture. A set of rules, policies, standards, and models that govern and define the type of data collected and how it is used, stored, managed, and integrated within an organization and its database systems. It provides a formal approach to creating and



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managing the flow of data and how it is processed across an organization's IT systems and applications. (Techopedia Staff, n.d.)

- ❑ • **Application Architecture.** The process of defining the framework of an organization's application solutions against business requirements. It ensures the application landscape is scalable, reliable and manageable. Application architecture defines the applications required to support business functionality and identifies the delivery methods for information.
- ❑ • **Technical architecture.** A process to define an enterprise's entire collection of hardware, software, networks, data centers, facilities, and related equipment used to develop, test, operate, monitor, manage and/or support information technology services.

► There are several Enterprise Architecture frameworks

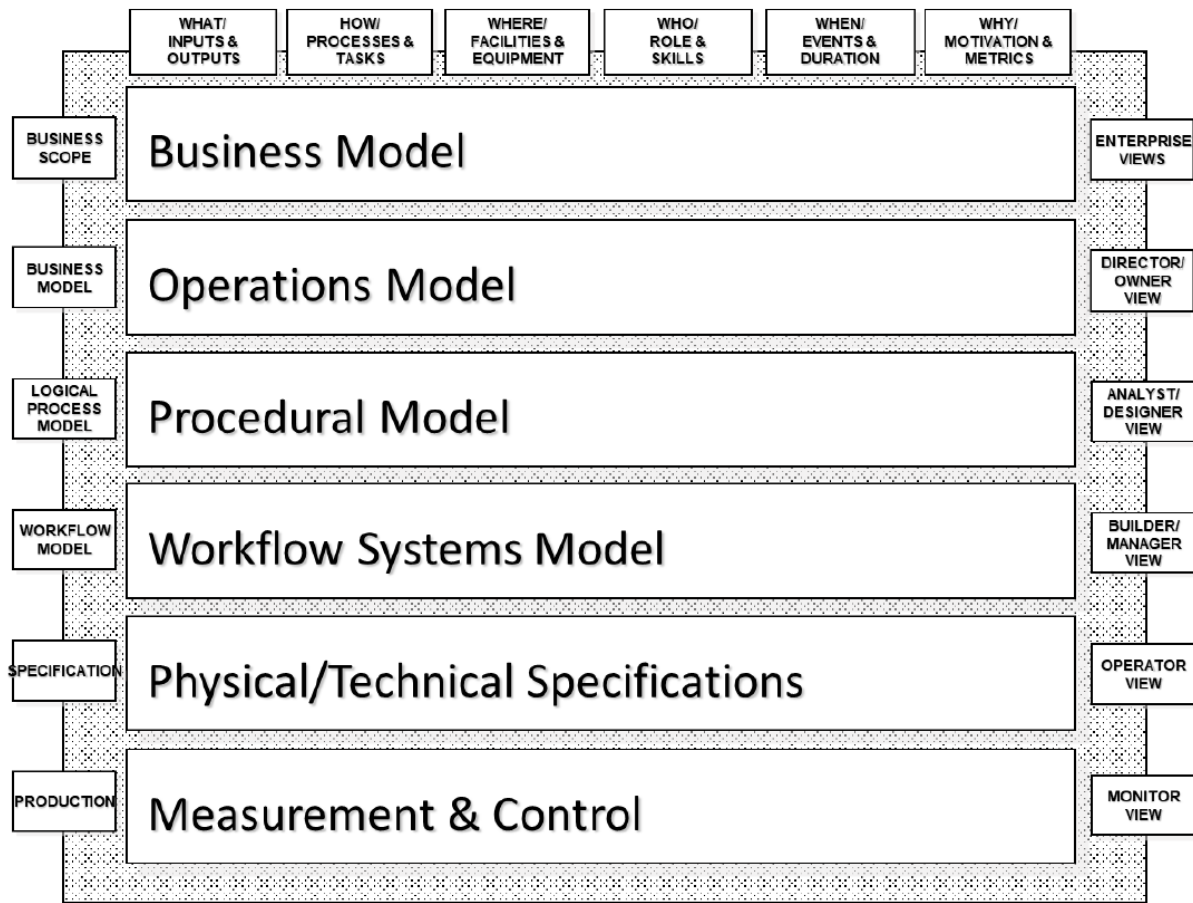
- ❑ **Zachman Framework.** First proposed in a 1987 article in the IBM Systems Journal, the Zachman Framework is one of the earliest examples of an Enterprise Architecture framework. It arose out of the work of John Zachman. It organizes enterprise artifacts onto a two-dimensional grid, usually six-by-six.
- ❑ • **TOGAF.** Short for The Open Group Architecture Framework, TOGAF is the product of work done by an industry standards organization and is based on an earlier framework created by the Department of Defense. It is one of the most popular Enterprise Architecture frameworks in use today. It has a circular structure with eight key sections and four architecture domains.
- ❑ • **FEAF.** The Federal CIO Council first introduced the Federal Enterprise Architecture Framework (FEAF) in 1999. The US government later dramatically revised FEAF in 2013, and it is now the standard for US government agencies. Many of its characteristics are mandated by law. It includes six reference models: performance, business, data, application, infrastructure, and security.
- ❑ • **DoDAF.** Based on work from the 1980s and 1990s but not released under this name until 2003, the Department of Defense Architecture Framework (DoDAF) continues to be a popular framework for use in highly complex environments. It incorporates seven different



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viewpoints: systems, services, data and information, capability, project, operational, and standards.

► Zachman Framework: Model Levels in Context of Business Architecture



Levels of Models

- Enterprise Models: An enterprise view model is typically a highly abstracted business classification model that is used to describe the focus of the organization and to organize the processes in an overall Business Architecture.
- Business Models: Business models depict the major events, activities, and results that describe each of the major end-to-end processes, their sub-processes, and their interactions with their environment.
- Operations and Workflow Models: Operations-level models typically describe how the business model is carried out.



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- ▶ **Systems Models:** Systems models depict the triggering events, software processes, data flows, and system outputs required to support business operations.
- ▶ **Measurement and Control Models:** Measurement and control models indicate points in the operation where key performance is measured and control points are monitored.

The Business Model Canvas

- ▶ Another tool used for characterizing the business model is the Business Model Canvas (BMC), which on the surface can seem like a variation of a representation of Porter's value chain model.

Business Model Canvas

Key Partners - Who are our key partners? - Who are our key suppliers? - Which key resources are we acquiring from our partners? - Which key activities do partners perform?	Key Activities - What key activities do our value propositions require? - Our distribution channels? - Customer relationships? - Revenue streams?	Value Propositions - What value do we deliver to the customer? - Which one of our customers' problems are we helping to solve? - What bundles of products and services are we offering to each segment? - Which customer needs are we satisfying? - What is the minimum viable product?	Customer Relationships - How do we get, keep, and grow customers? - Which customer relationships have we established? - How are they integrated with the rest of our business model? - How costly are they?	Customer Segments - For whom are we creating value? - Who are our most important customers? - What are the customer archetypes?
Key Resources - What key resources do our value propositions require? - Our distribution channels? - Customer Relationships? - Revenue streams?			Channels - Through which channels do our customer segments want to be reached? - How do other companies reach them now? - Which ones work best? - Which ones are most cost-efficient? - How are we integrating them with customer routines?	
Cost Structure - What are the most important costs inherent to our business model? - Which key resources are most expensive? - Which key activities are most expensive?			Revenue Streams - From what value are our customers really willing to pay? - For what do they currently pay? - What is the revenue model? - What are the pricing tactics?	

There are five approaches to using the Business Model Canvas:

- ▶ (1) **Offer-driven approach.** Assumes innovation starts at value proposition and works outward to key resources and channels, then cost structure and revenue streams.
- ▶ (2) **Resource-driven approach.** Assumes innovation originates from an organization's (key partners) infrastructure or partnerships and works across the canvas.



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- ▶ (3) Multiple epicenter-driven approach. Assumes innovation comes from multiple elements that converge on the value proposition.
- ▶ (4) Customer-driven approach. Assumes innovation begins with customer needs, facilitated access, or increased convenience.
- ▶ (5) Finance-driven approach. Assumes innovation is driven by revenue streams or reduced cost structure.

Porter's Competitive Strategy Matrix

- ▶ The five approaches used in the Business Model Canvas are similar to Michael Porter's Competitive Strategy Matrix where he defines three strategy types that can attain a competitive advantage.
- ▶ Cost Leadership: In cost leadership, an organization sets out to become the low-cost producer in its industry.
- ▶ Differentiation: In a differentiation strategy, an organization seeks to be unique in its industry along some dimensions that are widely valued by customers.
- ▶ Focus: The generic strategy of focus rests on the choice of a narrow competitive scope within an industry.
 - ☐ • **Cost.** In cost focus, an organization seeks a cost advantage in its target segment.
 - ☐ • **Differentiation.** In differentiation focus, an organization seeks differentiation in its target segment.

The Coherence Premium

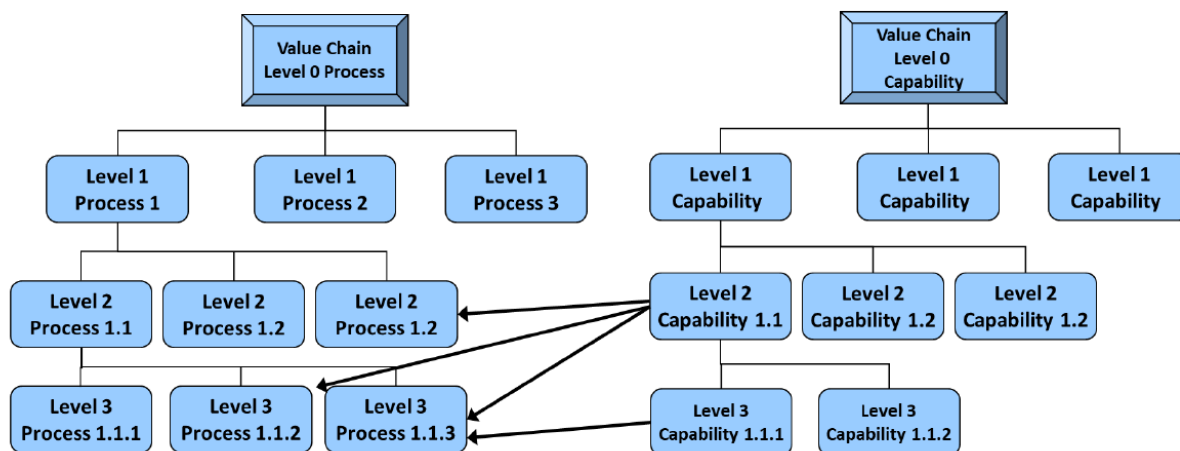
- ▶ The concept of a coherent business model builds on the Business Model Canvas.
- ▶ Three major components make up the overall business environment:
 - ☐ (1) Market. Includes the markets, industries, customers, market segments, and channels.
 - ☐ (2) Service. Includes customer relationships, value propositions, and offerings in products and/or services.
 - ☐ (3) Operating. Includes the value chains, business processes, business capabilities, functions, data, applications, and technology.
- ▶ They propose core competencies are in fact a capabilities system that creates value in a differentiated way.



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- ▶ Coherent organizations build the product and service portfolios such that every offering is aligned with the capabilities system
- ▶ Business capability is an ability or capacity that the organization must possess to achieve a specific purpose and that gets developed, implemented, and used by the organization.
- ▶ Business processes and process capabilities are independent.
- ▶ There is a many-to-many relationship between processes and capabilities

Business Process & Capability Decomposition



Enterprise Technologies

- ▶ Enterprise technology refers to the concept of information technology (IT) resources and data that are shared across an enterprise. The main enterprise-level technologies are enterprise resource planning (ERP), customer relationship management (CRM), and supply chain management (SCM).
- ▶ All enterprise technologies offer on-premise and cloud-based solutions.
- ▶ ERP: ERP, or enterprise resource planning, is a modular software system designed to integrate the main functional areas of an organization's business processes into a unified system.
- ▶ CRM: Customer relationship management (CRM) is the combination of practices, strategies, and technologies that companies use to manage and analyze customer interactions and data.
- ▶ SCM: Supply chain management (SCM) covers a broad range of processes and activities required to plan, control, and execute a product's flow, from



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acquiring raw materials and production through distribution to the final customer, in the most streamlined and cost-effective way possible.

- ▶ In summary, enterprise technologies are standardized applications with configurable industry templates with processes and common data models.
- ▶ It is important to note that because of the scope of processes and size of organizations, the average time to implement a business unit can be eighteen to twenty-four months or longer.
- ▶ There is also a failure rate of over 70% (even after twenty years) with many root causes — top reasons include lack of leadership, process design or redesign, and change management.

BPM Technology

- ▶ The majority of BPMS environments integrate with the data of legacy applications because the BPMS now have a service-oriented architecture (SOA), supporting faster changes.
- ▶ BPM suites have all the baseline modules for modeling and analysis, process repository, rules engines, simulation engines, and performance modeling, monitoring, and reporting. Suites have evolved to include newer technologies like low-code/no-code development, extended collaboration, robotic process automation (RPA), artificial intelligence (AI), machine learning, and blockchain (smart contracts).
- ▶ Intelligent Business Process Management Suites (iBPMS)
 - ❑ Intelligent Business Process Management Suites (iBPMS) are dynamic business applications that can quickly adapt to changing business needs, competitive pressure, and market opportunity.

iBPM Capabilities

- ▶ Advanced analytics. Looks at data autonomously using sophisticated techniques and tools to discover deeper insights, make predictions, or generate recommendations. See Advanced Analytics (Big Data).
- ▶ • Artificial intelligence. A discipline that tries to develop systems capable of learning and reasoning like humans. See Artificial Intelligence (AI) and Machine Learning.
- ▶ • Mobile BPM. Allows technicians who work remotely in the field to access specialized applications for more complete data, faster processing, and reduced redundancies. Developed quickly with minimal coding and



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integrated with the office via the cloud, these low-code applications support everything from logistics to approval workflows, installations, and inspection processes.

- ▶ ● Social BPM. Integration with Facebook, Instagram, LinkedIn, and so on. While this is not yet a best practice, it allows organizations to listen to the chatter of social networks. Social BPM is a
- ▶ double-edged sword, as it could provide feedback (positive and negative) on products or services and force organizations to respond. Social BPM has more utility when used behind the corporate firewall for real-time collaboration between decentralized global teams.
- ▶ ● Cloud-based BPM. Trend to move all BPMS to web-based services.
- ▶ ● Process mining. Analysis of business processes based on event logs. See Process Mining.
- ▶ ● Robotic process automation (RPA). A form of business process automation technology based on software robots (bots). See Robotic Process Automation (RPA).
- ▶ ● Predictive analytics. Time-driven analytics. Covered in AI (comparison).
- ▶ ● Internet of things (IoT). System of interrelated computing devices and other things with unique identifiers (UIDs) that can transfer data without human-to-human or human-to-computer interaction. See Internet of Things (IoT).
- ▶ ● Blockchain (smart contracts). Technology that directly controls the transfer of assets between parties once specific conditions are met; allows automatic enforcement of contractual obligations.
- ▶ ● Dynamic case management. Ability to have exceptions to the rule, enabling smart decisions faster when handling ad-hoc workloads.

Advanced Analytics (Big Data)

- ▶ Rather than discussing the evolution of DBMS (database management systems), this section focuses on recent developments like NoSQL.
- ▶ NoSQL (Not-only-SQL) emerged to handle large, unstructured, multi-media data in new digital applications.
- ▶ Another aspect of database evolution is that data and process are converging into integrated architectures to support real-time monitoring and control of processes through data.



Dynamic Case Management

- ▶ Dynamic case management (DCM) is the handling of case-related work using technologies that automate and streamline aspects of each case.
- ▶ In this context, a case is a collection of information about a particular instance of something, such as a person, company, incident, or problem.
- ▶ Dynamic case management evolved as a result of studies done in the knowledge worker space.
 - ❑ According to a Tallyfy study, two-thirds of a knowledge worker's day is spent in unstructured and often unpredictable work patterns
- ▶ Dynamic case management is event driven and is context aware.
- ▶ 3 central types of work that fit the dynamic case management model:
 - ❑ Investigative: Investigative bodies deal with requests for information or otherwise the need to complete a specific dossier for a particular case.
 - ❑ Service Request: Service delivery requires a balance of control and facilitation to ensure both consistency and efficiency.
 - ❑ Incident Management: Incidents such as accidents or complaints are unpredictable in both the defining details and resulting ramifications.

Process Mining

- ▶ Process mining uses event logs to perform an automated analysis of processes, and is a capability built into iBPMS platforms.
- ▶ There are three main types of process mining:
 - ❑ (1) Discovery. Takes an event log and produces a process model without using any prior information using process mining algorithms.
 - ❑ (2) Conformance. Real processes and models are compared and resulting coincidences or differences are identified. The results are used to diagnose deviations or inefficiencies between the process model and ideal processes.
 - ❑ (3) Enhancement (extension). Process models are adapted and improved according to the data of the real process.

Rules Engines and Business Rule Management Systems (BRMS)

- ▶ Rules are the institutional knowledge of the organization and provide a real competitive differentiator.



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- ▶ Rules engines are tools that support the identification, definition, rationalization, and quality of business and technology rules.
- ▶ In practice, rules are looked at as if-then statements: if (an event or value), then do something.
- ▶ Rules are virtually everywhere in companies. In some cases, they can be found in procedural manuals or in policy manuals.
- ▶ In other cases, they are in memos, notes, emails, and just folklore.
- ▶ A rules repository houses business and technical rules and their definitions.
- ▶ A rules engine is a software component that allows non-programmers to add or change rule logic.

Robotic Process Automation (RPA)

- ▶ robotic process automation (RPA) is the use of software with artificial intelligence (AI) and machine learning capabilities to handle high-volume, repeatable tasks that previously required humans to perform.
- ▶ Enterprises can also supercharge their automation efforts by injecting RPA with cognitive technologies such as machine learning (ML), speech recognition, and natural language processing, automating higher-order tasks that in the past required the perceptual and judgment capabilities of humans.
- ▶ What RPA Solves
 - ☐ An ever-changing business climate
 - ☐ Multiple, disparate systems
 - ☐ HR-based quick fixes
- ▶ Robotics process automation is advantageous for the following reasons
 - ☐ A human can work an average of eight hours a day, whereas robots can work twenty-four hours
 - ☐ Average human productivity is 60% with a few errors; robot productivity is 100% with no errors
 - ☐ Robots handle multiple tasks very well compared to humans

Blockchain

- ▶ Very simply, a blockchain is a single version of the truth, represented in a data structure that makes it possible to create a decentralized, immutable, secure, time-stamped, digital ledger of data and share it among a network of independent parties.
- ▶ blockchain referred to as digital ledger technology (DLT).



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► blockchain types:

- ☐ Public blockchains. Public blockchains are large distributed networks that are run through a native token. They're open for anyone to participate at any level and have open-source code that their community maintains.
- ☐ Permissioned blockchains. Permissioned blockchains control roles that individuals can play within the network. One method might be that the consensus process is controlled by a preselected set of nodes. They're still large and distributed systems that use a native token. Their core code may or may not be open source.
- ☐ Private blockchains. Private blockchains tend to be smaller and do not utilize a token. Their membership is closely controlled. These types of blockchains are favored by consortiums that have trusted members who centrally control the permissions and trade confidential information.

► Blockchains are comprised of three core parts: blocks, chains, and networks.

- ☐ Block. A list of transactions recorded into a ledger over a given period.
- ☐ Chain. A hash that links one block to another, mathematically chaining them together.
- ☐ Network. The network is composed of full nodes.

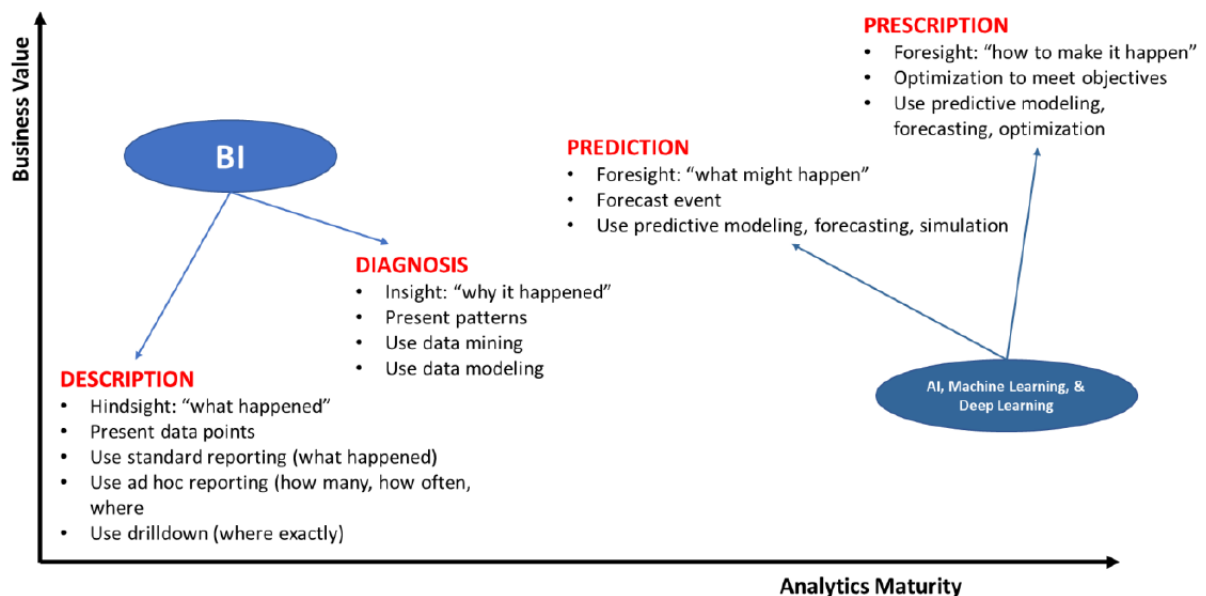
Artificial Intelligence (AI) and Machine Learning

- Artificial intelligence (AI) means getting a computer to mimic human behavior in some way.
- Machine learning (ML), is a subset of AI. Machine learning uses a range of techniques that allow computers to learn to perform tasks without being explicitly programmed.
- Deep learning is a subset of machine learning that allows computers to solve very complex problems.

Business Intelligence versus Artificial Intelligence



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differences among BI, statistics, and AI:

- ▶ ● BI (business intelligence) is traditionally query-oriented and relies on analysts to identify the patterns (such as who are the most profitable customers, why are they the most profitable, and what attributes set them apart, such as age or job type).
- ▶ ● Statistics also rely on analysts to understand the properties (or structure) of the data to find information about the population in the data, but it adds mathematical rigor in extrapolating to generalizations (such as if there is a difference between these customer segments in real life versus what is found in the sample data).
- ▶ ● AI, machine learning, and deep learning rely on algorithms (not analysts) to autonomously find patterns in the data and thereby enable prediction and prescription.

Microservices

- ▶ Microservices are self-contained processes that provide unique business capabilities.
- ▶ These processes can be deployed independently in a standalone fashion. Microservices also control their own data stores.
- ▶ Communication between microservices is usually done through HTTP and messaging.



Nexus Nugget Notes

- ▶ Since microservices are stateless, organizations have the ability to scale effortlessly.
- ▶ Microservices break work into components and are easier to maintain due to the independent nature of each self-contained process.

Internet of Things (IoT)

- ▶ The Internet of (IoT) is the concept of connecting any device with an on and off switch to the Internet (and/or to each other).
- ▶ Three Categories of Things
 - ☐ Things that collect information and then send it : Sensors
 - ☐ Things that receive information and then act on it: familiar machines
 - ☐ Things that do both: irrigation system



Process-Oriented Organization



Nexus Nugget Notes

- ▶ The ultimate goal of a BPM initiative is to build a process-oriented culture in which the organization embraces technology and other changes needed to make work more efficient and to consistently focus on creating value for customers.
- ▶ BPM governance ensures sure that process, data, and technology are consistent with the people requirements and that both are aligned to produce the best value for the organization.
- ▶ “The soft stuff is the hard stuff.” Given the scope and magnitude of change involved in enterprise-level initiatives, it should be obvious that a tremendous amount of HR-related development is required throughout the BPM life cycle or for any transformation.

Major business transformation change initiatives require focus on both of the following:

- ▶ Leadership development
- ▶ Cultural change

Leadership Development

- ▶ According to Noah Rabinowitz, “we need to move away from the ‘hard coded’ orthodoxies that prevent us from moving away from task-based development paradigms toward solving the organization’s biggest and most challenging problems.
- ▶ Rabinowitz points out the ten orthodoxies that distract us from real leadership development with a return.
 - ❑ Orthodoxy 1: The “historical” leadership database and normative dataset provide answers for the future.
 - ❑ Orthodoxy 2: Leadership development is hierarchical and should help people prepare for promotion and moving up the ladder. For decades now, the leadership pipeline construct has guided our leadership development strategies.
 - ❑ Orthodoxy 3: Learning and work are separate activities. Time in a learning environment is time off the job.
 - ❑ Orthodoxy 4: Better tools or intellectual property makes for better leadership development.
 - ❑ Orthodoxy 5: Zen garden (off-site) retreats lead to better leadership discussions.



Nexus Nugget Notes

- ☐ Orthodoxy 6: Benchmarking against what others are doing helps us determine what we should do.
- ☐ Orthodoxy 7: Mapping what we have today to what we want in the future helps us keep the equity built into the current system.
- ☐ Orthodoxy 8: Gaining stakeholder alignment on the design of a leadership program is worth the extra time it takes to accomplish that alignment.
- ☐ Orthodoxy 9: Organizations are obligated to help develop managers' skills to gain competitive advantage.
- ☐ Orthodoxy 10: Human ego and the desire for power.
- ▶ The mission of leadership development must become the same mission as the rest of the organization: to solve problems, create value, change culture, drive results, and build purpose – with all investments in the next generation and not the current generation

Culture Change

- ▶ “The No. 1 reason why any organization should care is that it has been proven that culture, if you have a strong one, is positively correlated with business results.”
- ▶ 10 tips for driving cultural change:
 - ☐ Define a set of desired values and behaviors
 - ☐ Align culture with strategy and processes.
 - ☐ Connect culture and accountability
 - ☐ Have visible proponents
 - ☐ Define the non-negotiables
 - ☐ Align your culture with your brand
 - ☐ Measure it.
 - ☐ Don't rush it.
 - ☐ Invest now.
 - ☐ Be bold and lead.
- ▶ Business and digital transformation must start with strategy and processes.
- ▶ Organizations would truly benefit from Chief People and Learning Officers who completely understand and know how to achieve leadership development and culture change as described.

Three Levels of Organizational Change and Engagement



Nexus Nugget Notes

- ▶ ● Organizational level. Addressed through values and behaviors. Also called enterprise level.
- ▶ ● Process level. Includes business processes for operations and HR. Includes the project level.
- ▶ ● Job level. Values and behaviors, job description, job training, measurements, and incentives. Includes the job and the job performer. Also called individual level.
 - ❑ Once the strategy is approved by executive management and/or the board of directors, the transformation moves from concept to cultural reality.
 - ❑ Communication is the number one activity that drives changing organizational culture.

The Process-Driven Organization

- ▶ The process-driven organization is an enterprise that is structured, organized, managed, and measured around its primary business processes.
- ▶ Accountability is the principal concept that organizations need to introduce and sustain when changing organizational culture.
- ▶ A process organization represents an overlay on a traditional organization design intended to create greater emphasis on customer focus and process orientation.
- ▶ Process-oriented companies measure what matters to customers.

Changes for Process-Driven Organization

- ▶ Introduction of roles such as a Process Owner and a BPM Center of Excellence
- ▶ definition of an organization's end-to-end processes
- ▶ measuring performance from both the customer's
- ▶ designating Process Owners with responsibility and accountability for process performance
- ▶ selecting two or three processes for improvement action
- ▶ capturing early wins in each selected process, and sustaining gains through ongoing management of the organization's end-to-end processes.
- ▶ This cycle is then repeated until the entire operations of the organization have been optimized.



Enterprise Performance Matrix

- ▶ Geary Rummler viewed organizations as human performance systems with cross-functional processes as the connective tissue holding performance together.
- ▶ He recommended using a performance matrix to illustrate and integrate the multiple levels of an organization and its scope of involvement.
- ▶ At each level, the assumption is that organizations:
 - ☐ • Define goals and measures
 - ☐ • Create designs for achieving their goals and measures
 - ☐ • Establish management practices that assure that the designs achieve the desired goals and measures

Level	Goals and Measures	Design and Implementation	Management
Organizational Level	• Organizational goals • Measures of organizational success	• Organizational design • Organizational implementation	Organizational management
Process Level	• Process goals • Measures of process success	• Process design • Process implementation	Process management
Job	• Job goals • Job measures of success • Job performer goals • Job performer measures of success	• Job design • Job implementation	• Job management • Job performer management

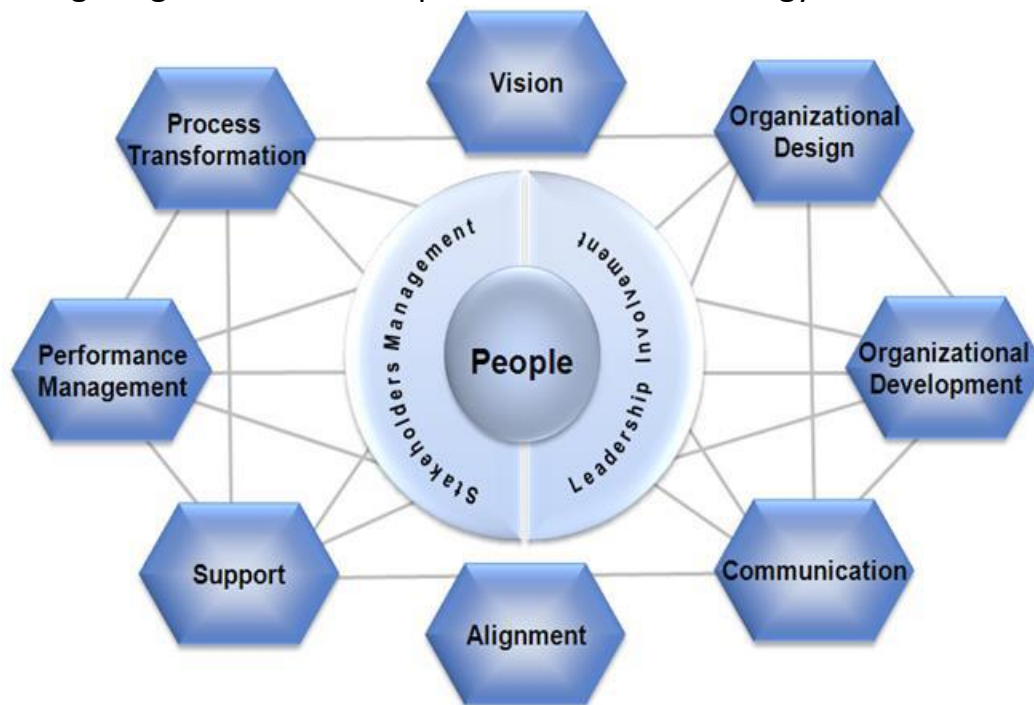
Organizational Change

- ▶ changes at the organizational level, involving senior executives of the functional areas impacted by the business change.



Nexus Nugget Notes

- ▶ Human Resources (HR) is almost always involved, especially when new roles need job descriptions, compensation levels, and so on.
- ▶ However, the more difficult exercise is the organizational change — the design of the new organization, reporting structures, and so on.
- ▶ Transformation-level change starts with the definition of clear vision for the change aligned with the corporate vision and strategy.



Organizations that don't periodically renew themselves suffer from such symptoms as:

- ▶ • Inefficient workflow with breakdowns and non-value-added steps
- ▶ • Redundancies in effort
- ▶ • Fragmented work with little regard for good of the whole (Production ships bad parts to meet their quotas)
- ▶ • Lack of knowledge and focus on the customer
- ▶ • Silo mentality and turf battles
- ▶ • Lack of ownership ("It's not my job")
- ▶ • Coverup and blame rather than identifying and solving problems
- ▶ • Delays in decision-making
- ▶ • People don't have information or authority to solve problems when and where they occur

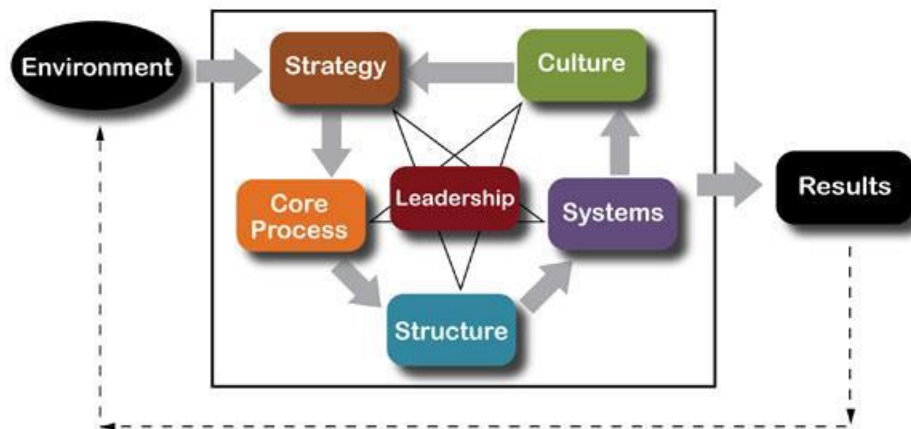


Nexus Nugget Notes

- ▶ • Management, rather than the front line, is responsible for solving problems when things go wrong
- ▶ • It takes a long time to get something done
- ▶ • Systems are ill-defined or reinforce wrong behaviors
- ▶ • Mistrust between workers and management

Organizational Design

- ▶ The Center for Organizational Design (www.centerod.com) has a recommended framework to help leaders understand their organizations and guide a successful redesign.
- ▶ The model reduces the complexity of an organization to eight key variables that must be understood and aligned for an organization to be successful



Designing the New Organization

- ▶ Defining your basic organizing principle.
- ▶ Streamlining core business processes
- ▶ Documenting and standardizing procedures
- ▶ Organizing people around core processes
- ▶ Defining tasks, functions, and skills
- ▶ Determining facility, layout, and equipment needs
- ▶ Identifying support resources
- ▶ Defining the management structure
- ▶ Improving coordinating and development systems

Project Management



Nexus Nugget Notes

- ▶ Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing.
- ▶ Essential skills of project management include:
 - ☐ • Communication
 - ☐ • Leadership
 - ☐ • Team management
 - ☐ • Negotiation
 - ☐ • Planning
 - ☐ • Time management
 - ☐ • Risk management
- ▶ The project phases (verticals in the diagram) are:
 - ☐ • Project strategy and business case
 - ☐ • Preparation
 - ☐ • Design
 - ☐ • Development and testing
 - ☐ • Training and business readiness
 - ☐ • Support and benefits realization
 - ☐ • Project close
- ▶ project processes (horizontal in the diagram):
 - ☐ • Phase management
 - ☐ • Planning
 - ☐ • Control
 - ☐ • Team management
 - ☐ • Communication
 - ☐ • Procurement
 - ☐ • Integration



Nexus Nugget Notes



Change Management

- ▶ Change management is usually done concurrently within a project management life cycle.
- ▶ Change management focuses on the people impacted by the change.
- ▶ Change management and project management are two of the most common, key disciplines required to bring a change to life.
- ▶ Project management focuses on the tasks to achieve project requirements, while change management focuses on people.
- ▶ The goal of project management is to effectively deploy resources in a structured manner to develop and implement the solution in terms of what needs to be done to processes, systems, organizational structure and job roles.
- ▶ The goal of change management is to help each individual impacted by the change to make a successful transition, given what is required by the solution. PROSCI Team, n.d.)
- ▶ Goals for the three levels of change management include:
 - ☐ • For individuals. To enable success by supporting people through their personal change journeys.
 - ☐ • On a project. To increase outcomes and return on investment by driving adoption and usage.
 - ☐ • Across an enterprise. To deliver strategic intent, mitigate saturation, and improve agility by embedding change management.

Financial Management



Nexus Nugget Notes

- ▶ Effective and efficient financial management includes the following key components: budgeting, internal controls, GAAP cost principles, accounting and record keeping, procurement, reporting and audits.
- ▶ Project financial management is the process that brings together planning, budgeting, accounting, financial reporting, internal control, auditing, procurement, disbursement, and the physical performance of the project with the aim of managing project resources properly and achieving the project's objectives.

Risk Management

- ▶ Risk management is the process used by project managers to minimize any potential problems that may negatively impact a project's timetable.
- ▶ The risk management process used to prepare for project risks is called a risk assessment.
- ▶ Risk assessment steps:
 - ☐ • Step 1: Identify the risk
 - ☐ • Step 2: Analyze the risk
 - ☐ • Step 3: Evaluate or rank the risk
 - ☐ • Step 4: Treat the risk
 - ☐ • Step 5: Monitor and review the risk
- ▶ Project management risks are composed of the following five elements:
 - ☐ • Risk event. What might happen to affect your project?
 - ☐ • Risk timeframe. When is it likely to happen?
 - ☐ • Probability. What are the chances of it happening?
 - ☐ • Impact. What is the expected outcome?
 - ☐ • Factors. What events might forewarn or trigger the risk event?
- ▶ The risk assessment should be done prior to any process implementation, especially when implementing technology solutions.

Process Culture

- ▶ A process culture exists when the organization's processes are known, agreed on, communicated, and visible to all employees.
- ▶ Characteristics of a process culture specifically include:
 - ☐ • General agreement on what the business processes are
 - ☐ • Understanding of how business processes interact and affect each other

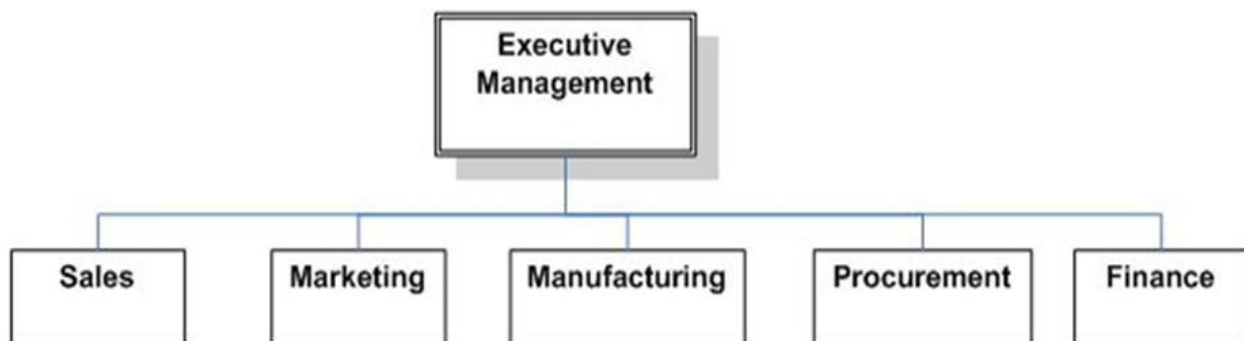


Nexus Nugget Notes

- ☐ • Clear definition of the value each process produces
- ☐ • Documentation of how each process produces its results
- ☐ • Understanding of what skills are required for each process
- ☐ • Understanding of how well each process performs
- ☐ • Ongoing measurement of process performance
- ☐ • Management decisions based on process performance knowledge
- ☐ Owners of each process having accountability for process performance

Moving from Hierarchical Structures to the Process-Driven Organization

- ▶ The legacy of managerial structures in functionally-oriented companies is typically a departmental hierarchy, where managers are responsible for workers performing tasks related to a particular resource or business function.
- ▶ Groups of workers are combined into divisions or departments, each adding layers of management and control.
- ▶ In large enterprises, these departments are often grouped by product, market, or geography.
- ▶ These silos of resources are represented on a common and familiar organizational chart



Governing Bodies

- ▶ Organizations must have a clear governance structure to provide leadership and clarify decision rights to
- ▶ Sound governance provides a structure of authority and a framework for collaboration.
- ▶ The structure and framework enable proper allocation of resources and efficient coordination of activity control throughout the organization.



Nexus Nugget Notes

- ▶ There is no single, standard, process governance structure widely in use.
- ▶ Organizational focus on process is still emerging and a variety of governance structures are in use and evolving.
- ▶ Issues such as organizational strategy, culture, process maturity, business process outsourcing, and even the nature of individual leaders can cause a significant deviation from any given governance framework.

BPM Center of Excellence

- ▶ Organizations undertaking the process journey should consider instituting a Business Process Management Center of Excellence (BPM CoE) to address Enterprise Process Management and performance issues.
- ▶ This concept is also executed as a Process Council, but in this guide is a BPM CoE.
- ▶ Research from both Forrester and Gartner stresses that successful companies have instituted BPM CoEs to address enterprise-level process performance issues.
- ▶ A BPM CoE may be made up of a combination of executive leaders, functional or departmental heads, and the Process Owners of the core cross-functional enterprise processes.
- ▶ identification and resolution of any cross-process integration issues, conflicts between process and functional (or departmental) ownership, resource allocation, and the development and alignment of the organization's business objectives, goals, and strategy.
- ▶ What is important is that the BPM CoE structure must be set up for efficiency and effectiveness in execution, so the group does not entangle itself in any other corporate council bureaucracy.
- ▶ The two types of CoE for process governance are centralized and decentralized.
 - ❑ A centralized model is where the CoE team serves as consultants to all business units, owning all aspects of implementation.
 - Benefits of a centralized BPM CoE may include:
 - Consistent implementations across business units
 - Easy to leverage lessons learned
 - Develops deep skills quickly
 - IT has a single point of contact for requirements



Nexus Nugget Notes

- ☐ A decentralized model is where each business unit develops deep skills in BPM and owns all aspects of implementation.
 - Benefits of a decentralized BPM CoE may include:
 - Focus on business unit priorities
 - Flexibility on approach, timelines, resources
- ▶ Benefits of a BPM CoE
 - ☐ • Cultural transformation
 - ☐ • Shareholder value creation
 - ☐ • Year-on-year growth
 - ☐ • Sustainable cost reduction
 - ☐ • Improved quality
 - ☐ • Certainty of outcome
 - ☐ • Increased returns on invested capital
 - ☐ • Enterprise speed and agility
- ▶ When a CoE is a virtual organization, it may be called a community of interest (COIN).
- ▶ Some organizations use CoEs as an entrée for people into the organization; that is, they are hired by the center and deployed from the centers to process teams.



Enterprise Process Management



Implement Changes

- ▶ Since the BPM CBOK Guide is not prescriptive, it does not cover how to develop initiatives
- ▶ Enterprise Process Management (EPM) is a high-level, strategic assessment of the organizational process view that includes a high-level process analysis and performance evaluation.
- ▶ In contrast, BPM is process analysis and modeling at the detailed, business-unit level.
- ▶ That's why it's important that in any business or digital transformation using the BPM life cycle, for people to collaborate to reach consensus on the business change.
- ▶ Collaboration means to work with one another; to cooperate.
- ▶ Collaboration is foundational for business (or digital) transformation
- ▶ Innovation is often an output of effective collaboration.
- ▶ Calculating ROI from collaboration is difficult because it is very dynamic and unpredictably inconsistent.
- ▶ Commercially available social platforms like Facebook, Instagram, and LinkedIn offer very simple social networking capabilities.
- ▶ Supply chain management (SCM), which can be viewed as a set of collaborative, inter-enterprise processes involving organizations, people, systems and information.
- ▶ Analysis of supply chain processes affirms that employee, partner, and customer constituents are enmeshed, performing not just well-defined tasks.
- ▶ For collaboration and Enterprise Process
- ▶ Management to be successful, encouraging the necessary exchange of ideas, didactic deliberation, and problem solving is required.
- ▶ Hence, the establishment of process governance is crucially important to drive customer centricity and collaboration at all management levels.
- ▶ The final component in the planning stage is a solid communication plan.
- ▶ Process management does not dominate or replace a business unit focus or the need for a functional focus.
 - ❑ Instead, it represents an additional and valuable management practice that emphasizes the way in which an organization creates value for customers.



Definition of Enterprise Process Management (EPM)

- ▶ Enterprise Process Management (EPM) assures alignment of the portfolio of end-to-end business processes and process architecture with the organization's business strategy and resource allocation.
- ▶ It provides a governance model for the management and evaluation of initiatives.
- ▶ It involves the deliberate, collaborative, and increasingly technology-aided definition, improvement, innovation, and management of end-to-end business processes that drives business agility.

Benefits of EPM

- ▶ EPM is the means for the organization's leaders to consciously and collaboratively improve and manage the flow of work in performing for customers.
- ▶ EPM is an essential management practice for the leaders who want to satisfy customers and improve performance.
- ▶ Nor does EPM dominate or replace a business-unit focus or the need for a functional focus.
- ▶ Instead, it represents an additional and valuable management practice that emphasizes the way in which an organization creates value for customers.
- ▶ The essence of EPM is customer centricity and accountability for critical cross-functional processes and how they are performed.
- ▶ Aside from the obvious benefits of managing the organization's value chain, there are also fringe benefits in terms of engagement, leadership, and growth.
- ▶ Process thinking can provide the needed context to engage the entire organization in executing on strategy.
- ▶ Again, the power of process thinking and the practice of process management at the enterprise level can enable leadership.

7 essential leadership behaviors

- ▶ • Know your people and your business
- ▶ • Insist on realism
- ▶ • Set clear goals and priorities
- ▶ • Follow-through
- ▶ • Reward the doers



Nexus Nugget Notes

- ▶ • Expand people's capabilities
- ▶ • Know yourself

Requirements of EPM

- ▶ customer-centric measurement framework,
- ▶ enterprise-level process schematic,
- ▶ enterprise-level process improvement and management plan.

The fundamental objectives of developing an enterprise view of process management are then to:

- ▶ • Define the large cross-functional business processes that deliver customer value
- ▶ • Articulate the organization's strategy in terms of its cross-functional business processes
- ▶ • Assign accountability for the improvement and management of the organization's cross-functional processes
- ▶ • Define the performance measures that matter to customers
- ▶ • Define the organization's level of performance in terms of these customer-centric measures

Customer-Centric Measurement Framework

Process	Output	Metrics	Indicator
Develop new product or service	Product or service introduction	• Time to market • Variance to promise date	TBD
Deliver product or service	Product or service to customer	The correct product or service, to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, to the correct customer	TBD
Respond to customer inquiry	Solution	• First-time-right responsiveness • Variance to promise date	TBD

Process Portfolio Management

- ▶ Process portfolio management is an essential component of governance.
- ▶ A process portfolio is a consolidated view of the complete landscape of an organization's business processes.



Nexus Nugget Notes

- ▶ Process portfolio management recognizes that improvement priorities need to be viewed on a portfolio basis.
- ▶ It provides a method to evaluate and manage all enterprise processes in a consolidated view.

Enterprise Process Improvement and Management Planning

- ▶ “Strategy without execution is a dream.”
- ▶ That is why the creation of process governance at the enterprise-level view of business processes is vital.
- ▶ The combination of a customer-centric, enterprise-level measurement framework and an enterprise-level process schematic permits the leadership of organizations to define the size of the gap between current performance and desired performance for its large cross-functional processes.
- ▶ However, for an organization to take action on the improvement and management of its enterprise-level processes, it is essential to assign accountability for the performance of these processes.
- ▶ The two most common methods of establishing process governance via the assignment of accountability for process ownership involve either assigning accountability for the ownership of the process as an additional responsibility to a senior functional manager or creating a staff position as a Process Owner