# must reads

* unified modeling language: <http://en.wikipedia.org/wiki/Unified_Modeling_Language>
* business process re-engineering: <http://en.wikipedia.org/wiki/Business_process_reengineering>
* six sigma: <http://en.wikipedia.org/wiki/Six_Sigma>
* change management: <http://en.wikipedia.org/wiki/Change_management>
* integrated business planning: <http://en.wikipedia.org/wiki/Integrated_business_planning>
* value chain: <http://en.wikipedia.org/wiki/Value_chain>
* core business: <http://en.wikipedia.org/wiki/Core_business>
* workflow <http://en.wikipedia.org/wiki/Workflow>
* artifact-centric business process model: <http://en.wikipedia.org/wiki/Artifact-centric_business_process_model>
* use case diagram: <http://en.wikipedia.org/wiki/Use_Case_Diagram>
* business process model and notation <http://en.wikipedia.org/wiki/Business_Process_Model_and_Notation>
* business reference model: <http://en.wikipedia.org/wiki/Business_reference_model>
* process architecture <http://en.wikipedia.org/wiki/Process_architecture>
* process flow diagram <http://en.wikipedia.org/wiki/Process_flow_diagram>

# Business Process Improvement: BPI

## steps

* identify the process to be improved (Based on a critical business issue):
  + can be a formal or formal exercise
  + can be selected by using a set of criteria derived from strategic or tactical priorities
  + can be selected based on performance gabs
  + only select those processes with the greatest impact on a competitive advantage or customer requirement
* develop objectives for the project based on the requirements of the process
  + quality improvement
  + productivity
  + cost
  + customer service
  + cycle time
  + the goal is **always** to get the process under control
* select the members of the cross-functional team:
  + horizontal analysis is carried out by a team composed of representatives of all functions involved in the process
  + a consultant/in-house staff can do the job, but a team composed of a cross-functional membership will have a greater quality of analysis and commitment
* document the current process:
  + use a flow chart and/or organization map
  + describe the process at the organization level
  + describe the process at the process level
  + describe the process at the job/performer level
  + develop a cross-functional process map for the process
* identify "disconnects" in the process
  + disconnects: anything that inhibit the efficiency and effectiveness of the process
    - at the organization level
    - at the process level
    - at the job/performer level
* recommend changes:
  + at the organization, process, or execution (job/performer) level
  + categorize and prioritize the main problems and possibilities
  + evaluate alternative solutions
  + develop a cross-functional process map for the recommended process
* establish process and sub-process measures
  + all measures should reflect the objectives of the project
* implement the approved strategy

## elements of successful implementation effort

* executive leadership and management commitment
* clear statement of why the change is necessary
* clear vision of how the organization will be different after the changes
* comprehensive recommendations
* comprehensive implementation strategy and plan
* adequate resources and time
* communication of plans, roles and responsibilities, benefits, progress, resolutions
* willingness of affected functions and individuals to support the proposed changes
* implementation is effectively managed and executed

# ongoing process improvement and management (PI&M)

* monitoring process performance against customer-driven process measures
* certifying the process (ensuring it meets a set of effectiveness criteria)
* appointing a process owner who is responsible on an ongoing basis for process performance)
* ensuring that the process has a plan and a budget
* create a reward system which encourages process effectiveness
* managing the space between functions

# Business Process Discovery

* BPD: related to process mining; a set of techniques that automatically construct a representation of an organization's current business processes and its major process variations using evidence found in the existing technology systems that run business processes within an organization

## techniques

* Emergent paradigm: current methods are based on top-down structured manual interviews relying on second-hand representations of the business process/system behaviors
  + collecting data from the information system over a period of time
  + analyze the data to form a process model
* automated process discovery: by automating the analysis of data, the subjectivity of current manual process analysis techniques is removed
* accurate information: since the information is collected from the actual source it cannot be inaccurate; as opposed to gathering it form second party representation
* complete information: an automated process captures all the information that is occurring within the system and represents them by time, date, user, etc.
  + info is collected from real-time interactions
* standardized process: automated collection of information yields process data which can be grouped, quantified and classified; provides a basis for the development and monitoring of both current and new processes to which benchmarks can be assigned

## application /techniques

* process discovery is one of three types of process mining (+conformance checking, +model extension/enhancement)
  + all techniques aim at extracting process related knowledge from event logs
  + process discovery : there is no prior process model; the model is discovered based on event logs
  + conformance checking: finding differences between a given process model and event log; thus its possible to quantify compliance and analyze discrepancies
  + model extension/enhancement: takes a prior model and improves/extends it using information from the event log (e.g. removing bottlenecks)
* business process discovery: the next level of understanding in the emerging field of business analytics
  + business analytics: allows organizations to view, analyze and adjust the underlying structure and processes that go into day-to-day operations
  + discovery: includes information gathering of all the components of a business process
  + business process components: technology, people, department procedures, department protocols
* Business process analysis: tools and methodologies suited for top-down hierarchical process decomposition, and analysis of to-be processes
  + BPD: Business Process Discovery: provides a bottoms-up analysis that marries the top-down to provide a complete business process, organized hierarchically by BPA
* Business Intelligence: provides organizations with reporting and analytics on the data in their organizations
  + BI has no process model, awareness or analytics, BPD complements BI by providing an explicit process view to current operations, and providing analytics on that process model to help organizations identify and act upon business process inefficiencies or anomalies
* Web analytics: limited example of BPD in that web analytics reconstructs the web-user's process as they interact with a web-site. however, these analytics are limited to the process as its contained within the session, from the users perspective and with respect to just the web-based system and process
* business triage: provides a framework for categorizing the processes identified by BPA (business process analysis) based on their relative importance to achieving a stated, measurable goal or outcome; utilizes the same categories employed by military medical and disaster medical services, business processes are categorized as:
  + essential/critical (red process): process essential for achieving outcomes/goals
  + important/urgent (yellow process): process which speeds achieving outcomes/goals
  + optional/support (green process): process not needed to achieve outcomes/goals
  + resources are allocated based on the process category with resources first dedicated to red processes, then yellow processes and finally green processes
  + in the event resources are limited, they are withheld first from green processes, then yellow processes,
    - resources are only withheld from red processes if failure to achieve outcomes/goals is acceptable

# Process Modeling

* process models: processes of the same nature that are classified together into a model; i.e. a description of a process at the type level
  + since the process model is at the type (of process) level, a process is an instantiation of it.
  + the same process model is used repeatedly for the development of many applications and thus, has many instantiations
  + is an anticipation of what the process will look like; what the process shall be will be determined during actual system development
  + addresses the process aspects of an enterprise business architecture, leading to an all encompassing enterprise architecture
    - i.e. the relationships of a business process in the context of the rest of the enterprise systems, data organizational structures, strategies, etc.
* process model goals:
  + descriptive
    - track what actually happens during a process
    - take the point of view of an external observer who looks at the way a process has been performed and determines the improvements that must be made to make it perform more effectively or efficiently
  + prescriptive
    - define the desired processes and how they should/could/might be performed
    - establish rules, guidelines, and behavior patterns which, if followed, would lead to the desired process performance
      * can range from strict enforcement to flexible guidance
  + explanatory
    - provide explanations about the rationale of processes
    - explore and evaluate the several possible courses of action based on rational arguments
    - establish an explicit link between processes and the requirements that the model needs to fulfill
    - pre-defines points at which data can be extracted for reporting purposes

## purpose

* meta-process modeling: explains the key concepts needed to describe what happens in the development process, on what, when it happens, and why
  + aimed at providing guidance for method engineers and application developers
* the activity of 'modeling a business' process usually predicates a need to change processes/identify issues to be corrected
* change management: programs designed to put processes into practice

## classification of process models

* by coverage
  + activity oriented: related set of activities conducted for the specific purpose of product definition; a set of partially ordered steps intended to reach a goal
  + product-oriented: series of activities that cause sensitive product transformations to reach the desired product
  + decision-oriented: set of related decisions conducted for the specific purpose of product definition
  + context-oriented: sequence of contexts causing successive product transformations under the influence of a decision taken in a context
  + strategy-oriented: allow building models representing multi-approach a process and plan different possible ways to elaborate the product based on the notion of intention and strategy
* by alignment: process can be of different kinds, and correspond to the various ways in a which a process can be modelled
  + strategic processes:
    - investigate alternative ways of doing a thing and eventually produce a plan for doing it
    - often creative and require human cooperation; alternate generation and selection from an alternative are very critical activities
  + tactical processes
    - help in the achievement of a plan
    - more concerned with the tactics to be adopted for actual plan achievement than with the development of a plan of achievement
  + implementation processes
    - are the lowest level processes
    - directly concerned with the details of the what and how of plan implementation
* by granularity: the level of detail of a process model and affects the kind of guidance, explanation and trace that can be provided
  + course granularity: restricts these to a rather limited level of detail
    - suitable for the project manager, generals, top-level, corporate, sometimes middle management;
    - these individuals want to gain an overview of time, budget and resource planning
  + fine granularity: provides more detailed capability
    - suitable for engineers, users, testers, analysts, system architects
    - these individuals will prefer a fine grained process model where the details of the model can provide them with instructions and important execution dependencies such as dependencies between people
* by flexibility: while process models were prescriptive, in actual practice/implementation departures from the prescription can occur
  + organize method construction in a flexibility spectrum ranging from low to high
    - low: rigid methods, strict controls, operator has low empowerment; processes that are completely pre-defined and leave little scope for adapting them to the situation at hand
    - high: modular methods that can be modified and augmented to fit a given situation

## quality of methods (modeling techniques)

* expressiveness: the degree to which a given modeling technique is able to denote the models of any number and kinds of application domains
* arbitrariness: the degree of freedom one has when modeling one and the same domain
* suitability: the degree to which a given modeling technique is specifically tailored for a specific kind of application domain
* comprehensibility: the ease with which the way of working and way of modeling are understood by participants
* coherence: the degree to which the individual sub models of a way of modeling constitute a whole
* completeness: the degree to which all necessary concepts of the application domain are represented in the way of modeling
* efficiency: the degree to which the modeling process uses resources such as time and people
* effectiveness: the degree to which the modeling process achieves its goal

# business process reengineering

* <http://en.wikipedia.org/wiki/Business_process_reengineering>
* business process reengineering: a business management strategy; focusing on the analysis and design of workflows and business processes within an organization
  + aims to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world class competitors
  + aims to radically restructure their organizations by focusing on the ground up design of their business processes
  + emphasizes a holistic focus on business objectives and how processes related to them, encouraging full scale recreation of processes rather than iterative optimization of sub-processes
  + aka: business process redesign; business transformation; business process change management
* business process: set of logically related tasks performed to achieve a defined business outcome

## overview

* BPR: business process reengineering is the practice of rethinking and redesigning the way work is done to better support an organization's mission and reduce costs
  + focuses on the organization's business processes:
    - the steps and procedures that govern how resources are used to create products and services that meet the needs of particular customers/markets
    - structured ordering of work steps across time and place, that can be decomposed into specific activities, measured, modeled, and improved
    - can be completely redesigned or eliminated altogether
  + identifies, analyzes, and redesigns an organization's core business processes with the aim of achieving dramatic improvements in critical performance measures
    - measures: cost, quality, service, speed
  + recognizes that an organization's business processes are usually fragmented into sub-processes and tasks that are carried out by several specialized functional areas with no single person responsible for the entire process (only sub-processes)
    - optimizing the performance of sub-processes can result in some benefits but cannot yield dramatic improvements if the process itself is fundamentally inefficient and outmoded
    - thus, BPR focuses on redesigning the process as a whole in order to achieve the greatest possible benefits to the organization and their customers
      * business process improvement: focuses on incremental improvement
      * business process reengineering: focuses on radical redesign

## history

* COMPLETE THIS

## steps to BPR

* assessment of:
  + organization's mission
  + organization's strategic goal
  + customer needs
  + top questions to ask:
    - does mission need to be redefined?
    - are our strategic goals aligned with our mission?
    - who are our customers?
    - what are their wants and needs?