

Collaborative Requirements Development Methodology

Overview

Participant's Guide

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Common Terminology

Directions: From the six items in the box below, select the term for each definition provided in the chart.

Business Process	Business Process Redesign	Collaboration
Business Process Analysis	Requirements Definition	Information System

Term	Definition
	A tool that supports work.
	The effort to understand an organization and its purpose while identifying the activities, participants, and information flows that enable the organization to do its work. The output of this phase is a model of the business processes to be used for design or redesign of business processes.
	A strategy for working together to develop information systems in a complex environment in which organizations have more in common than not.
	The effort to improve organizational performance through restructuring tasks and workflow for greater efficiency and effectiveness.
	Refining our understanding of the workflow in order to define database outputs needed to support the work. This process answers the question, "How do we see information systems supporting task X?"
	A set of related work tasks designed to produce a specific desired programmatic (business) result. The process involves multiple parties internal or external to the organization and frequently cuts across organizational boundaries.

Collaborative Requirements Development Methodology

Business Process Analysis

think

How do we do our work now?

- Define goals and objectives
- Model context of work
- Identify business rules
- Describe tasks and workflow
- Identify common task sets

Business Process Redesign

rethink

How should we do our work?

- Examine tasks and workflow
- Identify inefficiencies
- Identify efficiencies with repeatable processes
- Refine business processes and business rules
- Remodel context of work
- Restructure tasks and workflow

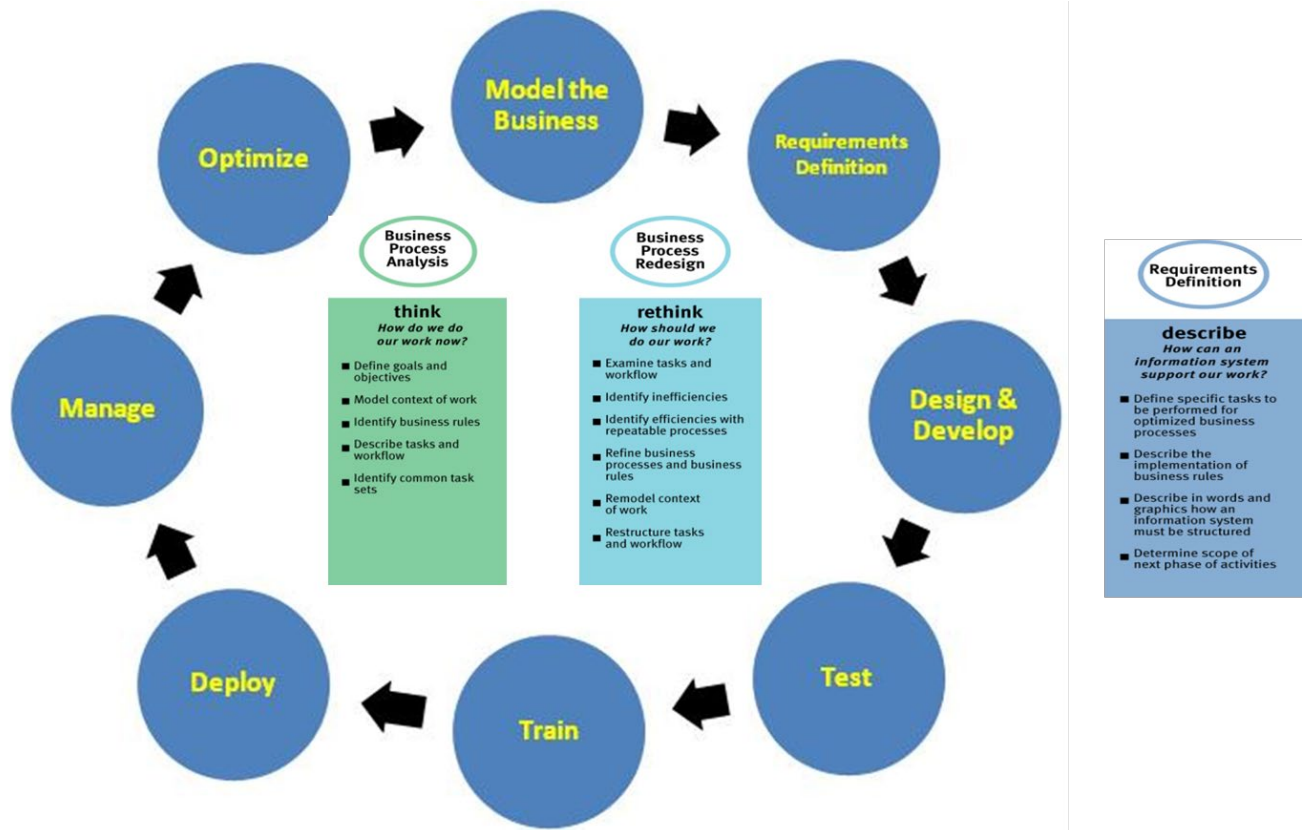
Requirements Definition

describe

How can an information system support our work?

- Define specific tasks to be performed for optimized business processes
- Describe the implementation of business rules
- Describe in words and graphics how an information system must be structured
- Determine scope of next phase of activities

Collaborative requirements development and the information technology life cycle



Benefits of the Collaborative Requirements Development Methodology

- Business process analysis provides a logical framework for determining information system requirements that assist in achieving organization objectives. It also provides a framework for process improvement.
- Work tasks represent a logical progression of activity.
- Working collaboratively among functional areas and among organizations optimizes the use of resources.
- Working in logical phases with defined products provides a framework for effective project management. Using an efficient Methodology optimizes the use of participants' time.
- Using a variety of graphical tools provides a structure within which creativity may flourish.
- Mapping out business processes and focusing on the system outputs/business outcomes ensures that all (and only) the data required are captured and stored, only necessary processes are used, the scope of the system is clearly delineated, and all efforts—whether to build or to buy—are streamlined.
- The products of Collaborative Requirements Development Methodology (Business Process Analysis, Business Process Redesign, and Requirements Definition) empower organizations to make informed choices about the options available to them: Buy, build, or even collaboratively develop health information systems with similar organizations.
- Collaborative Requirements Development by affiliated organizations or members of an organization provide a high degree of interoperability among systems, which enables better data flow among member organizations and their partners. It improves the ability to provide mutual assistance in a crisis situation. The shared requirements also allow members/organizations to have one voice in negotiating with information systems vendors.
- Ultimately, with improved, well-understood processes and health information systems that support them, organizations have improved service, more timely response, and potential for reduced cost.

Guiding Principles That Help Ensure Success

1. Information systems support the performance of work within an organization.

Information systems exist to facilitate the work of the organization, not the other way around. Work tasks comprise the business processes of the organization.

2. Put the logical before the physical.

Understanding the business processes and defining system requirements are the most important steps in developing or acquiring any information system. Developing consensus among stakeholders about the work performed by a system requires a disciplined, analytical approach. Output-oriented design starts with the output and works backward. This means focusing on identifying and defining important business processes and their component tasks, changing business process flow or task flow as needed for efficiency, and then defining what the health information system needs to do in order to support these processes. Only at that point can the database design begin. To put it another way:

- Database structure exists to serve →
- Data outputs, which exist to serve →
- Business processes, which exist to serve →
- Organizational objectives, which exist to serve →
- Organizational goals and vision

3. Engage all stakeholders.

Everyone affected by a health information system must be at the table—program experts, information technology experts, health care providers, administrators, policy makers, the business community, and the people in the communities we serve. To improve performance, IT staff and public health practitioners need to work as a team. Both need to understand the problem being addressed; both need to contribute their expertise toward its solution. Understanding the goals and concerns of each group help us define the requirements for health information systems solutions. If the information system exists to serve the organization, then stakeholders in the organization should be involved in its design.

4. Plan for interoperability.

Public health practitioners and medical care providers, hospital, laboratories, pharmacies, community agencies and the business community must be able to seamlessly exchange health information. Interoperability of information systems enables timely response by providers at the point of care and by public health agencies in the community.

5. Look for ways to improve business processes to add value.

Business Process Analysis may identify inefficiencies, redundant tasks, or obsolete tasks. Part of the Institute's approach is to look carefully at business processes and assist organizations in coming to consensus on improvements before beginning the physical design of an information system. Business process analysis done well will improve productivity and/or quality.

6. Design the system so that information is entered only once.

Various modules in the system should be able to communicate so that duplication of effort is avoided. The sharing of data enables the future addition of new functionality with minimal development time and costs, because larger pieces of the system are built from smaller units. An integrated approach to common tasks yields simplified systems, decreasing redundancy of data entry and storage, and provides a coherent approach to cross-cutting systems issues like security and data backup.

7. Manage for accountability.

Organizations want to know that their information systems requirements will be met, that resources are maximized, and that the project will be completed on time and within budget. To ensure this end, the Institute helps organizations put together a detailed project charter, including scope definition, approach, communications plan, and project risks and mitigation plans; develop a detailed project plan, including key milestones and deliverables; develop status reports to keep stakeholders fully informed; and conduct meetings that are efficient and focused on outcomes. The project management plan tracks the "building" nature of the Collaborative Requirements Development Methodology in that the plan identifies steps that must be done well in order to provide for a solid foundation on which to continue the project activities.

8. Stop analyzing when the incremental progress outweighs the incremental gain.

At the beginning of business process analysis, of course, much effort is expended with little gain. However, as the processes and tasks start being defined, great progress is made. At some point, the analysis will be almost complete, but it may never be perfect and needn't be in order to complete requirements definition. At some point (as in writing a paper), you just have to declare it complete. The analyst should stop the process when the effort is only resulting in very minor improvements in process definition.

Collaboration

This is a collaborative process and includes addressing many decisions. Some may be made by individuals; others are group decisions.

Some decisions that the group should plan are below, with suggested strategies to the right.

Decisions	Strategies
When and where meetings will be held	Lay out option, discuss, come to consensus.
When conference calls are held	Give participants options to select their best dates and times.
Who participates in calls and meetings	Guidelines are provided; individual grantees make final decision.
What context diagrams, task flows, and the Business Process Matrix look like and the information they contain	Business analyst captures group discussions and facilitates discussion to validate until group comes to consensus.
What the redesigned business processes look like	Business analyst captures group discussions and facilitates discussion to validate until group comes to consensus. Business analyst may make suggestions based on observation, listening, and prior experience.
What “general statements of	Business analyst captures group discussions and

need” support the work	facilitates discussion to validate until group comes to consensus.
Endorsement of final requirements	Work with different associations on their endorsement approaches.

Stakeholder Analysis

A *stakeholder* is any individual or organization that the information systems project may affect, positively or negatively. In general with information systems projects, stakeholders can be categorized in the following ways:

Problem identifiers. Those having the skills and knowledge required to clarify business processes and tasks and resultant data needs. These might include public health program experts, health care providers, and the business community.

Problem solvers. Those having the skills required to put things together so that health information systems meet the identified data needs. These might include information technology experts and users.

Strategic brokers. Those with the authority and networking skills to link together problem solvers and problem identifiers and implement solutions. These might include administrators and policy makers.

Specific to stakeholders involved in **business process analysis**, a stakeholder can be categorized as a person who:

- Supplies an input to the business process
- Receives an output from the business process
- Provides supporting services for the business process
- Authorizes the business process
- Regulates the business process
- Performs one or more of the transactions included in the business process
- Manages any of the entities included in the business process

Adapted from Business Process Analysis Student Guide, Global Knowledge Network, Inc. ©

Identifying and Analyzing Stakeholders

1. Thinking about the project's objectives, write names of ALL known stakeholder organizations on Post-it® notes. Where possible, list the name of the individual contact within that organization. You may also list individuals; some may represent more than one organization. It may be helpful to think about organizations/individuals by category (e.g., providers, policymakers, internal departments of your organization, IT staff, partner organizations, media, vendors, etc.) (Names and contacts may be entered into a contact database for mailings, emails, etc.)
2. If possible, ask key stakeholders/project partners of the project to contribute to the stakeholder list – organizations, contacts, what they know about their power/interest/stake in the issue).
3. Through team discussion, assess each stakeholder organization's Level of Interest in the project and Power to Influence the project. Different points of view on where stakeholders fall in the matrix can be very informative. Plot a Post-it note with the name of each stakeholder organization in the appropriate quadrant on a large flip chart showing the 2x2 Influence-Interest matrix below
4. Think about the project's objectives and how each stakeholder relates to them. For example, if a project objective is to influence policy, do you have stakeholders identified who can do that? If the answer is 'no,' this tells you that you need to find them.
5. Think about the stakeholders in the High Influence/Low Interest quadrant. Could they be used strategically to advance your project? If 'yes,' do you have a communications strategy to move them from High Power/Low Interest to High Power/High Interest?
6. Some stakeholders will be Low Influence/Low Interest. This tells you that these are low-priority stakeholders and you don't need to devote more than maintenance resources to them, i.e., keep them informed.
7. Some stakeholders will be High Influence/High Interest. These stakeholders need high levels of ongoing communication and attention to ensure they continue as "High/High." Think about how you can use them strategically to advance your project.
8. For maximum benefit, revisit the matrix with the project team periodically to add new stakeholders or move existing stakeholders into different quadrants as their influence or power changes (i.e., interest of a stakeholder may increase if they have additional funding, or decrease because of political changes). Adjust communications resources/strategies accordingly.

Stakeholder Analysis Influence / Interest Matrix

