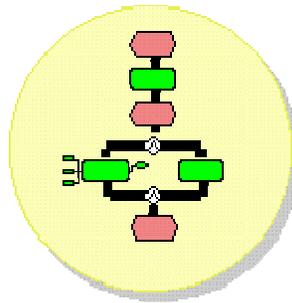


Business Process Modeling

Part I: Concept Paper and Introduction

**People, Process and Technology:
what, how, who, when and why**



This paper (Part I) introduces the concept of business modeling: an approach to describe organizational business processes using SAP and other software.

*Part II of **Business Process Modeling** proposes a template design and illustrates the process of Customer Order Management as an example.*



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Introduction

Part I: Concept paper and overview to business process modeling

This document introduces the concept of business modeling: an approach to describe organizational business processes using SAP software. The first section outlines some of the tools currently available to clarify the “what, how, who, when and why” of the business process. The second section gives the reasons and requirements for business modeling. Finally, the third section maps out the business model from its highest (most general and comprehensive) level to the lowest (most focused) level and explains each component.

Part II: Example process and templates for job profile involvement

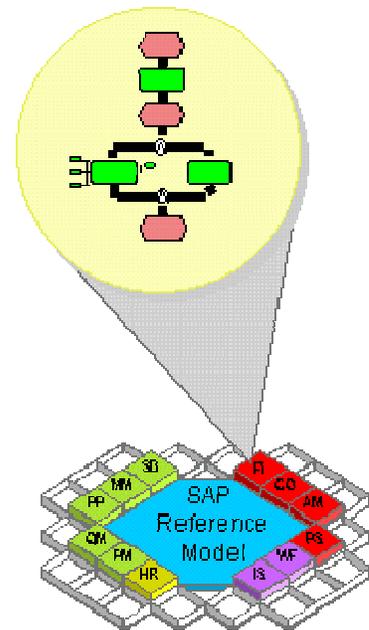
The second document proposes to explain the process of customer order management from a purely business focus. Part II introduces the documentation and templates for the “people” component in the business process documentation: business activity overviews, business activity flows and work task lists. We outline separate examples for activities within the business scenario “customer order life cycle with no exceptions” for all of these template proposals. From this, we hope to initiate a discussion and build the templates to chart business processes at a high level with core business functions and activities. The examples do not attempt to document any business process in fine granular detail. **The items in Part II illustrate examples only, not actual business practices.**

Definition of business model

A model is a graphical method of representing the key information used to perform a business function.¹ The SAP Reference Model (used by SAP’s Business Navigator and LiveModel), the Enterprise Model (an information model defined by the Enterprise Planning Project) and ASAP (SAP’s accelerated implementation methodology) are all based on the concept of business modeling. However, none of these models provides a company-specific solution based on its current information systems and business processes.

Benefits of business process modeling

“Even though ASAP is designed to help companies jumpstart their implementations, it still takes several months to define how the software should run business processes.”²



¹ For further definitions and benefits of business modeling, refer to “Why modeling?” by Dr. Stephen P. Sanoff.

² Callaway, Erin. “Pain Relief for Fast SAP Rollouts.” *Inside Technology Training*. Vol. 2, No. 9, September 1998.

The business process model helps assess the impact of an SAP implementation on people, processes and technology. From this approach, we envision a high-level process map where we can “drill down” to the SAP software transactions at a lower level. In this manner, companies can further refine best practices and methods that allow for increasingly lower-cost SAP implementations. Business modeling thus reinforces implementations – helping companies create sustainable competitive advantage over time by providing:

- Standard technology
- Consistent information
- Continually improving operational efficiencies
- Greater ability to manage our business and capture opportunities for growth

In addition, business process documents should enable companies to:

- Implement best practices consistently throughout the enterprise
- Provide current and future users with exceptional business guides for the SAP environment
- Identify future enhancements and opportunities within the business environment
- Verify that the model implemented suits the business
- Drive out redundant SAP transaction codes or add missing codes
- Identify redundant or missing roles, jobs and security profiles
- Identify missing or redundant business processes

Business process modeling is an art and can take a number of iterations to perfect. The key to modeling is to develop an overall structure and then continuously modify it. Thus, the proposals in this document are subject to change.

Major tools

Five common tools used in SAP implementations to execute and document the business process are:

- SAP
- An ASAP repository or database
- A user profile management tool (roles/security database)
- An EPSS (Electronic Performance Support System) or online help
- A process flow tool such as LiveModel

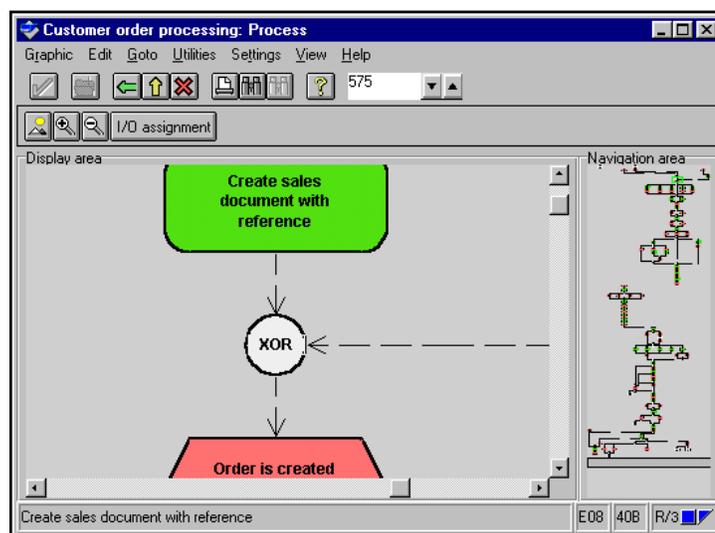


Figure 1: The SAP Business Navigator can interface with LiveModel to display processes graphically.



Of these, not one defines the entire concept of all elements in the business process. Either the databases or the EPSS should, but typically fall short of consolidating all the component parts as a single source of documentation. LiveModel graphically details the process, may link with SAP and the Notes databases, is an excellent project tool, but fails as a business guide. No single tool details the “when” and “why” for performing a particular SAP or business transaction.

SAP: the “what”

The major component of the implementation provides the business with its single most important tool. However, without clear instructions on its many functions (transaction codes), SAP is, as far as the business is concerned, ineffective. Thus, ASAP repositories record this information.



The ASAP repository: a project team-oriented “how”

The ASAP repository provides clear instructions to the project team on the SAP “**how**” and can be a prototype for training materials and the EPSS. The combined business process procedure (BPP) and end-user procedure (EUP) describes how to complete each individual transaction in SAP.

The user profile database: the “who”

The user profile database details the “**who**” and can provide excellent links to the ASAP repository. The job profiles in this database consist of roles, which in turn link to authorized transactions in the ASAP repository, thus providing security administration in SAP. Additionally, the roles can be associated with training modules, which provide documentation in the form of instructor-led training (ILT) materials and job aids based on the BPPs and EUPs. You can then combine the training modules to form role-based courses.

The EPSS: an end-user-oriented “how”

An Electronic Performance Support System can provide online help (similar to job aids) based on the BPPs and EUPs in the ASAP repository. An EPSS can offer a user-friendly interface with superior searching and index capabilities, but often lacks the information on “who” described in the user profile database as well as an overall process flow.

LiveModel: the process flow

If maintained and customized, LiveModel is the only tool to provide the process flow from both a business and SAP perspective (see also note 3 below). On its own however, it fails to give the business precise instructions on the non-SAP **how, when** and **why**. It is an excellent guide to use for writing the relevant business processes, and for confirming a BPP exists for each transaction detailed in the flow.





The “when” and “why”

Often do not exist. The business does have business procedures (the “**when**” and “**why**”) but they were written for a previous environment, not the current SAP environment. SAP, LiveModel, the databases and the EPSS do not usually define the **when** and **why**.³

Proposal for a model and template

Why a business process model?

The users need a detailed guide on performing a business procedure from start to finish that clearly details the **what, how, who, when** and **why**. A business procedure is required to detail individual functions, including those that reside outside of SAP. The business process model should describe:

- **What** is performed (by referring to SAP, another system or a manual procedure)
- **When** each function is performed
- **Why** those functions is performed
- **Who** performs those functions (by referencing the user profile database)
- **How** those functions are performed (by referencing the ASAP repository if SAP or providing other instructions if performed outside of SAP)

What format?

The business process model should initially detail the business process at the highest level (the *Scenario process – Value chain* mode in LiveModel). This should then go on to describe the sub-processes (*Scenario process* in LiveModel) using both graphics and text, to enable the user to grasp the concept quickly. Each sub-process should break down to permit the user to view all of the possible business activities (*Process* in Live Model). Each activity should then give an overview and illustrate each step or procedure using a flow diagram and a highly detailed work task list. The work task list should organize all of the elements required to enable a user to perform a set of tasks within a business process: the **what, when, why, who** and **how**. The business process model should also have the ability to link to data standards.⁴

Template design

The proposed template has several sections at the **business process, scenario** and **activity** levels.

³ An add-in to LiveModel (BDL or Business Definition Layer) may be able to handle this type of dynamic business modeling. There are other similar products such as iGrafx FlowCharter.

⁴ “In LiveModel diagrams and model objects it is possible to embed, or have links to, Microsoft Word documents, Lotus Notes databases, Notes views and documents et cetera” (*LiveModel 2.0 Technical Note: Linking to EPCs in ModelStore*. 15 June 1998). This technology can allow us to establish links to and from other data sources.



Business process

The following documentation is relevant at the process level:

- The **process overview** gives a general description of the business process
- The **business process chain** diagram illustrates the business process at a high level
- The **business sub-processes** section lists the relevant sub-components of the process
- The **business activities** section lists all possible activities for the entire process.

Business scenario

The following template components are relevant at the scenario level:

- The **scenario overview** breaks down each business scenario into the detailed business activities and describes by whom they are executed using SAP business transactions and other computer system activities
- The **scenario flow diagram** explains the documentation of the activities with the process. The diagram describes how the activities link to the SAP software transactions in the ASAP repository and the user profile database. The diagram is similar to the business activities chart at the process level, but displays only activities relevant to the particular business scenario.
- The **scenario flow description** provides an explanation of the diagram.

Activity overview

This section presents a short description of each business activity along with the triggers and events: who performs the activity, when the activity takes place, how often, and the objective or resulting events.

Business activity flow

The activity flow diagrams show all the sequential steps needed and the jobs responsible in the sequence of a business activity within a scenario or process. The diagram provides a visual representation of the activity and is self-explanatory. The oval shapes represent the jobs that perform the activity, rectangles represent steps within the activity and rounded rectangles represent other activities from or to which the scenario flows.

Work task list

In this section, we introduce work task lists used by each job profile associated with the activity. The work task lists document what needs to be done on a daily basis with or without the SAP system and show the sequence of work needed to perform a job within a given business scenario.

Key points

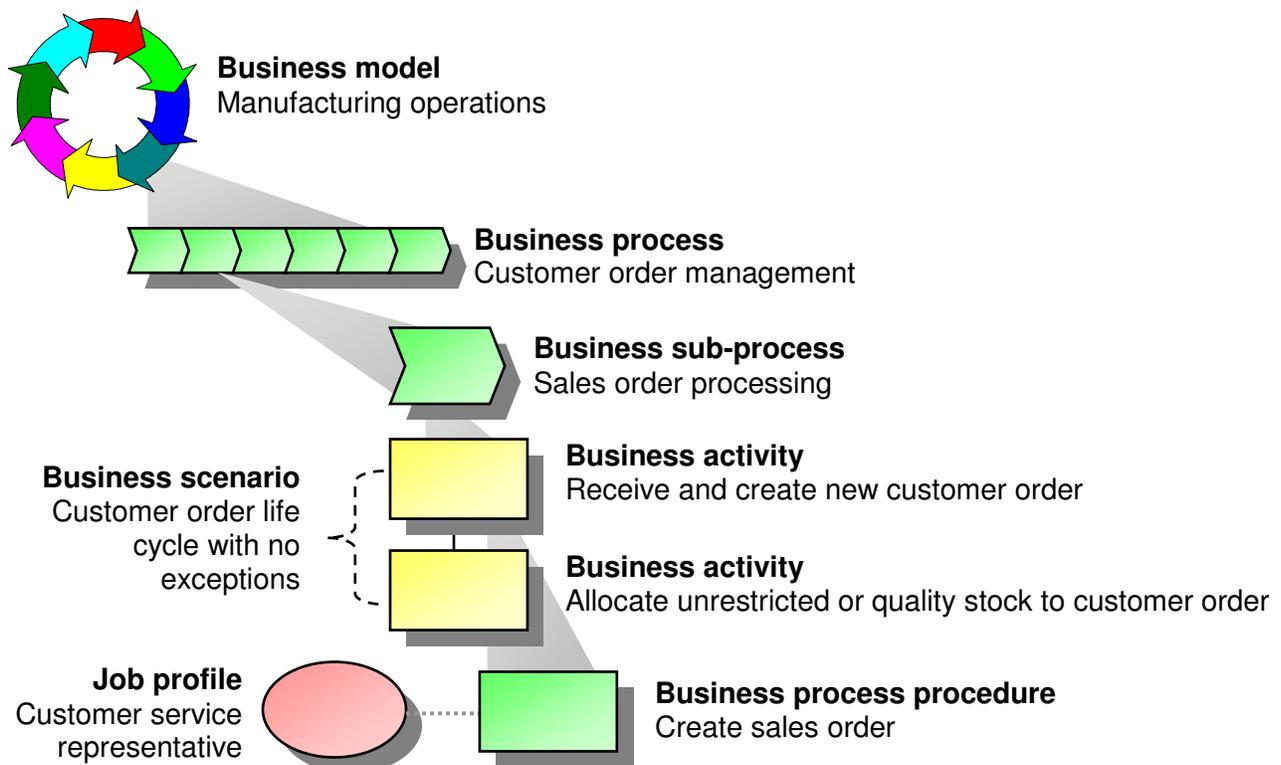
- The business model should explain the concept of business processes.
- LiveModel should drive the processes and their sub-components.
- The user profile database defines the **“who”** (job profiles), which in turn should be referenced in the business activities (work task lists).

- Each business activity includes steps. The “how” to perform each step should be a link from the template (business activity flow and work task list) to the BPP in the ASAP repository, in the case of SAP transactions. For non-SAP steps, text in the work task lists and flow diagrams should describe the “**how.**”
- Information on **when** to perform each step in the business activity should (and can only be) documented in the work task list.
- The business process may need a **why** – the work task list records the reasons.

For examples of the work task list and other template components, please refer to the document **Business Process Modeling Part II: Template Design and Example.**

Business model structure

This section describes how the business model relates to the SAP system. Ideally, an ASAP repository would document each business process based on the example below.



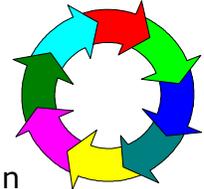
The terminology used is arbitrary and employed in order to propose a standard naming convention. For consistency, the six-sided boxes represent sub-processes and the rectangles below represent activities and procedures that can be performed within the business sub-processes. This graphic illustrates the link from business model to business process procedure (SAP transaction or step). Each level involved in the business model includes an example.



In each activity flow, procedures relate directly to the SAP system. For example, there is a step to create a sales order. This relates directly to a transaction in SAP to create a sales order. In the detailed business activity flow diagram, we also include the people (job profiles) responsible for performing each step. **This model is an example and is subject to further refinement.**

Business model

The business model consists of all the processes used by an enterprise. The processes link to one another and form a continuous cycle of business activity. In the example above, we are using manufacturing operations as a model. All of a company's operations can form part of the model after achieving further integration; in fact, the business model helps accomplish this cohesion throughout the implementation of SAP.



Business process

SAP integrates an organization's business processes across the enterprise. Business processes reflect the best business practices of the company. The business process chain is the highest level diagram in the business model. These diagrams represent extensive cross-application processes that span enterprise areas and SAP modules. Manufacturing operations often use the SAP system to integrate business processes across the entire supply chain, from supplier to customer, in a virtual network of shared information. Examples of business process chains used in manufacturing and the SAP reference model are:

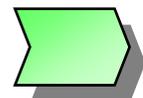


- Customer order management
- Manufacturing planning
- Process manufacturing execution
- Plant maintenance
- Procurement
- Cost management and controlling
- Financial management and accounting

Each business process integrates into a flow of business activities across departments and functional areas. The business process used as an example describes the process of customer order management from pre-sales activities to customer payment.

Business sub-process

Each business process comprises a chain of events or sub-processes. As described earlier, each sub-process consists of business activities that have their own flows. The business sub-process used as an example is sales order processing.



Business activity

A business activity describes the people in the process and technology involved. A detailed activity flow documents the job profiles involved in

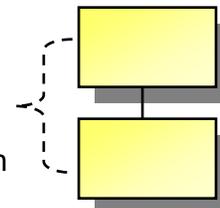




the business activity (oval shapes indicate jobs) and the procedures carried out by the jobs (rectangles indicate procedures). A later example (that lists the tasks each job performs) explains this more fully.

Business scenario

A business scenario consists of several business activities that describe a possible flow of events through a business process. The scenario includes only certain activities within the process, not all possible activities. Each process may have several scenarios in which the sequence of separate business activities may occur. A standard flow of a business process is a scenario "without exceptions." Uncommon circumstances or scenarios in a business process are "exceptions" or variants of a business process.



Business process procedure

A business process procedure (BPP) describes a step within a business activity. When executed in the SAP system, the procedure involves one or more business process transactions (BPTs) as documented in the ASAP repository. The ASAP repository may or may not document other procedures performed manually or in other systems. However, the business activity flow still describes these procedures.



Job profile

Job profiles represent certain positions within a company. Usually, these are security profiles in SAP made up of various roles. Roles in turn consist of business process transactions. Therefore, job profiles are responsible for certain business process procedures within a business activity.



Conclusion

Companies benefit from a systematic description and illustration of the procedures involved in each business process and each business activity. SAP and other tools such as LiveModel are channels through which companies can focus, clarify and refine this information. These tools provide the means to document and perform the everyday jobs. In addition, they also provide the means to gather the information to build the business model initially from members of the project and the business units.