Business Process Expert Part 3 – What Are the Skills and Tools?

Summary

This is the third part of a series of articles about business process experts (BPX). After having defined the problems and how the BPX can solve them, we need to understand what skills and tools a BPX needs. This allows professionals to better plan their career and learning path.

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Author Bio

Mario Herger started with SAP as a developer in 1998. He worked for three years on the business information warehouse content team. From 2002 to 2004, he was a developer and product manager focused on the SAP xApps family of composite applications and SAP Composite Application Framework (SAPCAF) tool. From 2005 to 2006, he was a development manager for the analytics team in Palo Alto, California. Since October 2006, Herger has been part of the Business Process Expert Community team at SAP.

In addition, he operates the world's largest folk-dance Web site (www.dancilla.com) and a couple of other cultural Web sites that are based on a framework built by himself. He also is the author of books about SAP Composite Application Framework and the SAP NetWeaver Visual Composer tool.

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Introduction

While there is a clear understanding of what classes a Java developer or Customer Relationship Management (CRM) Consultant needs to take to get certified, this is vague for a business process expert (BPX). Some reasons for this vagueness are the missing categorization of different flavors of BPX, the importance of soft skills and experience. In addition, modeling languages and notations might have been out there for some time, but up until now, knowledge about those things has helped only in a limited way for building applications. After all, modeling is fine thing, but the implementation was done manually by somebody else with a different understanding. With the current wave of development environments and tools that offer end-to-end functionality – from modeling to deployment of the ready application – some of these "nice-to-have" skills grow in importance.

In the following sections, we will walk through multiple areas of skills and some tools that a BPX should be familiar with (especially in an SAP environment), depending on the phase of a project. Some of them will require a description of how to achieve them, as there is no way of taking classes for them, and the BPX will need continuous learning and open-mindedness and sometimes a completely new approach to seemingly well-known things.

BPX Categories

Before we dive into the skills and tools that a BPX needs to acquire, we need to understand the types of BPX. In my last article, I mentioned the combination of skills and experiences from each area that a BPX needs. As these articles are - like everything on the internet – in permanent "beta", I have since extended the list. It now includes:

- Industry and/or component
- Technology
- Tool
- (Modeling) Methodology

All of these skills need to be mapped to the process stage(s) (see Figure 1) that the BPX works in. From [9] we know that we have 5 phases (accompanied by multiple, simultaneous management activities).
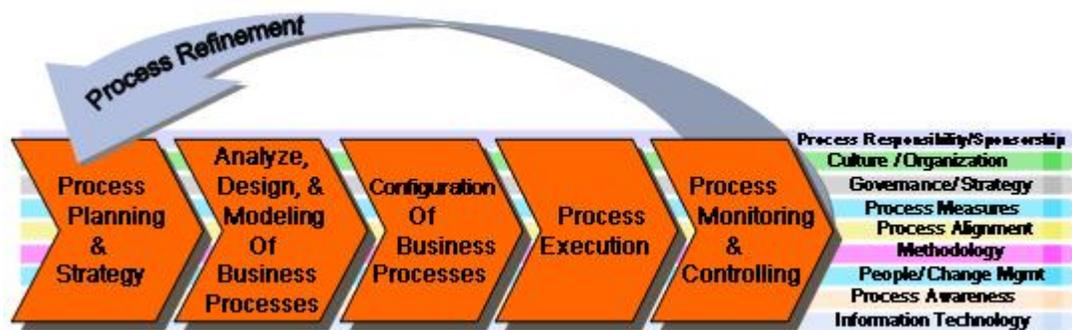

Figure 1: Business Process Management Stages [9]

Depending on the phase, the emphasis on those skills shifts. The following matrix tries to measure the importance for each skill in each phase (Table 1).

	Process Planning & Strategy	Analyze, Design & Modeling of Business Processes	Configuration of Business Processes	Process Execution	Process Monitoring & Controlling
Industry/Component	High	High	Medium	High	Medium
Technology	Low	Medium	High	Low	Low
Tool	Low	High	High	Low	Low
(Modeling) Methodology	Medium	High	High	Low	Medium

Table 1: Importance of Skills per Business Process Management Stage

This leads us to two potential BPX types: the Solution BPX and the Enterprise BPX. If we were looking for an analogy from the building industry, the EBPX would be the equivalent of a city architect, while the Solution BPX would be equivalent of other architects (like the building, road and garden architects) [8].

Solution Business Process Expert (SBPX)

A Solution Business Process Expert (SBPX) is familiar with the business and requirements for one or multiple industries or components. A solution is not only the solution implemented in your organization, but the solution process in the industry that your organization works in.

An SBPX should be able to abstract the solution from a specific software vendor, to better identify gaps and trends, and alternative trends and approaches.

Example: an SBPX for CRM ideally has experience as a CRM consultant, CRM developer or CRM business process owner. In these roles, the SBPX either has had insight into multiple organizations operating in this industry or using such a business solution, or at least has subscribed to (and read!) the relevant CRM periodicals over a longer period of time.

Enterprise Business Process Expert (EBPX)

An Enterprise Business Process Expert (EPBX) should have a holistic view of the enterprise. In order to do so EBPXs should have knowledge about the business, information systems and technology domains of the enterprise. This includes all business components (HR, Financials,…), industries (if possible, multiple industries is even better), and solutions (CRM, SCM…).

This raw outline of a BPX can be achieved by ensuring that one develops and gathers knowledge of multiple skill sets and tools. The following sections will give a rough outline of what those skill sets and tools are for the BPX in an environment that leans more towards SAP.

The Basics

Modeling

If you translate modeling into a programmer's world, the analogy would be the following: programmers need to understand the concepts of object oriented programming, inheritance, SQL statements, class diagrams, etc. For a BPX this equivalent is modeling. What is modeling?

Let's define modeling as the art of describing all aspects of your business in a descriptive language that allows you efficiently to end up with an application that supports doing your business in an efficient way.

In other words: you need to be able to abstract your business into objects (material), components, processes (customer data, check inventory), rules (if inventory is lower than 5 for material a then restock), roles (sales representative, vendor) and relations (ask for name first, then check credit card, then forward to warehouse) between them.

Whatever business application and process you want to build and implement, you have to be proficient with standardized notation and execution languages, choreography and modeling principles. Some notation languages are Business Process Modeling Notation (BPMN) or UML Activity Diagrams, some execution languages are Business Process Execution Language (BPEL) and Business Process Modeling Language (BPML) or Web Services Choreography Interface (WSCI) and Workflow XML (WfXML) as Choreography standards to name just a few.

Modeling of course goes far beyond just modeling the process. Modeling also includes the definition of objects and how they are persisted and where they get their data from. In a programmer's world, this can be the Entity Relationship Diagram, the tables and their relations in the underlying database, or the web services, function calls and APIs. In a process world these objects are the Lego bricks for building your business processes.

Luckily for us, multiple tools like Composite Application Framework, MDM or SAP BI offer modeling tools that allow defining objects abstracted from the database scheme. An attribute in one case might be its own full object in another industry. Functionality like language independency of texts, hierarchies, GIS enablement or time dependency with these tools is often only a checkbox, but influences the database scheme tremendously.

Depending on your modeling decisions, the performance, the future extensibility or the usability of your application can be influenced heavily. And what's considered one industry's state-of-the-art modeling is considered another industry's absolute no-no. Which foreshadows your skill set: modeling is fine, but without knowledge about the business you are working in, it's worthless.

Architecture

As Natan Gur in [8] writes, Architecture is defined as "science of designing and building structures; layout, formation, arrangement; building style or method; design of a computer and its components (Computers)". Architecture therefore is the art of finding out what the needed components and their relation are in order to create a new structure (building, computer or software). Architecture is a holistic view of the structure.

The architect is the main technical contact for a BPX. Their collaboration is crucial for the success of a project.

Especially important in today's business world is the understanding of enterprise-service-oriented architecture (enterprise SOA). The design and the use of services is the foundation for a business process. For a BPX, enterprise SOA is an intermediary step for what we really want: a business process architecture, with mapping of the process steps to the services.

End-to-End Business Scenarios

Independent of the industry and business you are working in, there are underlying basic business scenarios with process steps that are reused in multiple scenarios. Those scenarios cover resource and business management and describe the simplest processes that are used in the business world. Here is an incomplete list of some of these scenarios:

Type	Scenario
Business Management	Procure to Pay
	Idea to Offering
	Market to Order
	Quote to Cash
	Order to Cash
	Forecast to Delivery
	Financial Plan to Report
	Issue to Resolution
	…
Resource Management	Assess to Acquire
	Acquire to Retire (Fixed Assets)
	Hire to Retire
	…

Table 2: End-to-End Business Scenarios

Note that some of these scenarios overlap (*Quote to Cash* and *Order to Cash*).

Each Scenario is built up of different process steps like *Create or Maintain Customer*, *Enter and Authorize Sales Order* and so on. More details on the scenarios are available on [11].

Each industry and each business adapts those scenarios and process steps to their own needs and uses those differences to gain an advantage to their competitors. Even if those business scenarios are published, the intrinsic knowledge or attitude of an organization cannot be easily copied and implemented by competitors (see also [12] about Total Quality Management).

A BPX must be familiar with the basic scenarios and be able to map them to the organization's specifics.

Experience

In a discussion in the SAP BPX Community, many users stated either directly or indirectly that a BPX needs to have experience. Which means (sorry, youngsters) that a freshly graduated alumnus from college or university cannot fill this role, it requires mostly senior people with multiple years of professional experience, ideally from different industries or departments within an industry.

Experience means not only being familiar with tools and methodology itself, but perhaps what this aspect describes more is the soft skill of knowing about internal structures and networks, politics and rivalries, who has to be involved to get things done, knowledge about the history of the business and processes, the people, the IT systems and landscape, etc.

This also implies that due to your own history and past, you might not be able to become a BPX in your current organization or even industry (it's a small world). Your reputation might have been damaged with the very same people you would need to collaborate with as a BPX. This does not mean that you should shy away from conflicts, as long as they are fact- and evidence-oriented and not based on prejudices and

attitudes. It simply means you that you should always act in a way that allows you to work with the very same people in a constructive way again.

Hard Skills

Systems

When we mention system knowledge, we need to look at multiple angles of business needs. In a classical structure, we have on the one side the **transactional** world of ERP systems, CRM, SRM, databases, etc., on the other side we have the **analytical** demands with data warehousing, data mining, statistical analyses, etc. Those worlds are merging more and more, and the system boundaries are becoming seamless (at least for the end users and even modelers). In addition, we have the whole landscape of "**supporting** systems" like portals, exchange infrastructure, master data and knowledge management systems, and so on.

Ideally, a BPX would be proficient in all these areas of the system world. Modeling a purely transactional process without having in mind the reporting on the data generated by this process, is not the way you do business anymore these days. And not thinking of how to provide this application to your users (internal and external) will bring you a lot of pain later on.

The following sections will deal with an incomplete list of systems and tools. The systems include those from the three areas mentioned, with a focus on the modeling capabilities of their built-in tools. What most of those tools have in common is that after the modeling step, the application can be generated and deployed. The result is a ready-to-use application.

Business Intelligence

SAP BI is the forerunner for an end-to-end model-driven development tool. Almost no application coding is shipped, only the metadata-based description of reports, data storage, extraction and transformation routines, mappings etc., which is called Business Content. By going through an activation process of Business Content, customers generate the coding, tables and metadata in their systems. The BI tools allow you to adapt pre-built Business Content, but also to create custom objects.

Exchange Infrastructure

SAP Exchange Infrastructure (XI) is a metadata-based mapping, transformation and distribution platform. Instead of having point-to-point communication between separate systems in the organizations system landscape, SAP XI serves the other systems as message distributor and translator.

Master Data Management

Having a consistent view of master data throughout the whole organization is an ever-important necessity. SAP Master Data Management (MDM) aims to model master data objects, maintain the master data itself by entering new data, eliminating duplicates and analyzing inconsistencies, and to distribute the master data into other systems.

Knowledge Management

While the above-mentioned systems deal mainly with structured information, SAP Knowledge Management (KM) is the repository for unstructured information. Information packed in documents or media like videos, images and music is of ever-growing importance for an organization.

Application and Modeling Tools

Visual Composer

SAP Visual Composer is a browser-based, graphical modeling tool that – by reusing existing data services like remote function calls (RFCs), web services, queries, query views, tables – allows creating business applications with both transactional and analytical services seamlessly integrated. In addition, it gives modelers the choice to select the user interface (UI) technology and build user interfaces.

Composite Application Framework and Guided Procedures

The SAP Composite Application Framework (CAF) has a similar concept as the SAP Visual Composer, but is more powerful – and complex. As CAF is embedded in the development environment Eclipse, it also offers programming capabilities and the ability to create new data services, including their persistence.

SAP Guided Procedures as part of CAF allow tying single process steps into larger processes and scenarios.

ARIS

ARIS is a business process modeling tool that supports the creation of fairly complex business processes, including rules, components, roles, etc. The generated metadata model can be exported and used in any other development tool supporting the standard. In contrast to the modeling tools mentioned before, ARIS does not generate the application, but requires manual implementation efforts.

Business Scenarios

In the last section we mentioned the basic end-to-end business scenarios that are the basis for real implementations. In this section, the software equivalent for SAP software is shortly discussed.

Core Modules

When SAP core modules are discussed, this basically means Financials, Sales, Inventory or Human Resources. The modules are used by all industries as their basis, and if organizations operate in multiple industries, they are the central integration point for industry-specific adaptation.

A BPX in the SAP area needs to be aware of those modules and ideally is experienced with at least one or several of them.

Industry

Industry solutions build on the core modules and extend them or plug in additional business scenarios. From a modeling perspective, this means that changes to objects (80 characters for the material key in the aerospace Industry instead of a much smaller number of characters in the core), the processes, the rules, etc. have to be done. This covers all areas from transaction to analysis.

As a BPX, you should be familiar with your industry and with the deviations from the standard or basic scenarios and the potential implications.

Solutions

Beside the core modules and the industry solutions, the past decade has seen the rise of solutions like CRM, Supply Chain Management (SCM), and so on, but also the sudden appearance of much more flexible cross applications, like the whole catalog of SAP xApps. While the former ones are specialized versions of large systems in the style of core applications, the xApps tie services and components from different areas together to form new cross applications.

Communication Tools

As communication is an important ingredient of the work of a BPX, we must devote a short section to the proper tools for this. The following subsections focus on the most commonly used communication tools from different providers. In this section, we will not only see what to learn about, but also what not to learn.

Presentations

As weird as this point may seem, even if you have worked with MS PowerPoint (or similar presentation tools) in the past, stop and think before every use whether the information that you want to convey is properly communicated with a slide deck. The cognitive style of PowerPoint [10] and the way slide decks are used (mostly read without having them being presented to the audience), drastically lowers the understandability of complex technical information and adds to the geek/suit gap.

A very serious recommendation is to "unlearn" PowerPoint and use communication tools that allow a higher density of information and support a style of formulating full sentences (as opposed to bullet points).

Text Documents

It is nearly always better to prepare documents with full sentences and clearly phrased thoughts, created with text editors like MS Word or LaTeX, or even e-mail. A text document is still one of the publishing forms with the highest density of information.

There are some rules that should be followed (as every scientific work will teach you):

- Build a structure with an abstract, introduction, body, result and conclusion.

- Define abbreviations and explain their meaning.

- Give full references for further details and to show your thorough research.

- Name the author, time, location, document version, etc., so that the reader knows whom to ask and the accuracy of the document.

Alternative Tools

Besides analog tools like the whiteboard or easels, digital tools like **mind maps**, **e-mail** or a **wiki** are good ways to communicate. You should use whichever tool helps you collaborate (wiki), visualize and organize (mind map) or structure your thoughts (e-mail, text editor), offers high density of information and forces you to a clear and consistent structure.

Soft Skills

Unlike the popular notion that developers and techies do not have or need soft skills, they do. Showing passion, being able to communicate and structure a problem, being helpful, working in teams, etc., are soft skills that geeks are noticing in other geeks as well, although you never find these skills on a resume, or at least not with the importance that they actually do carry.

Have you ever asked yourself why you like working with some people in your organization more than with others? Here is an example from [13]:

> A company hired consultants, who were asked to make a cost analysis of departments and their employees. They had one female engineer on their list, whom they believed did not add value to the company, and they put her on the layoff list. Deeper analysis showed that all projects that she had worked on had been extremely successful, and other engineers actually were anxious to be on her projects.

For business process experts, that's an example of a person with extremely well-developed soft skills. She obviously was able to add good spirit to the team, motivate people and have them stay focused and result driven. She was an example of someone who is a great leader not by being named the leader, but just by being a leader.

Communication Skills

A senior developer in my former team was not only a very good developer, he also took the time to coach new members and explain the problems and architectures. He ensured that they asked questions and understood the problem and solution. This way, new team members not only became productive much faster, they were also in sync with the team goals, and the solution benefited from that fact. Problems were openly discussed, issues raised in time and caught before they hit the customer.

That's basically what a BPX needs to acquire: communication skills. Being able to describe a complex system in a structured way, being able to abstract and view that from different angles and distances (from high level to deep detail), and being able to formulate and phrase a problem in the language that your target audience understands and accepts. The latter requirement, especially, leads often to misunderstanding and prejudices about attitudes of people.

There are multiple ways of acquiring communication skills:

- Structure your problem (solutions and other problems become much clearer).

- Describe it for different audiences (have you ever described what you do to your grandparents?).

- Grab every opportunity to describe it (you cannot become a piano virtuoso without practicing).

The easiest way to learn about structure is to look at how news reporters do it. The basic questions that each news reporter has to answer are:

- What happened?

- Where did it happen?

- Why did it happen?

- When did it happen?

- Who was involved?

The basic questions that BPXs, developers, architects, etc. have to answer are:

- What's the current situation?

- What's the problem with that?

- What are ways to solve the problem?

- What are problems with those solutions?

- Who needs to do what by when?

If you cannot structure your problem or project in such a way, then either something is wrong with your problem or project, or something is wrong with your communication skills.

Once you've structured your problem/project, try to describe it for audiences with different levels of expertise. An extreme example that I always imagine: How would I explain it to my grandmother? How would I explain it to my child? How would I explain it to my banker?

Do not make the mistake of assuming they are "dumb". They are not, they just have other information than you and see the problem (if they see a problem) from their point of view and with their experiences. In fact, it might turn out that you are the dumb one, having seen the problem too narrowly or having seen a problem where there is none, but missed other, much more urgent problems.

There are many ways to improve on your communication skills. Here is a partial list of organizations or recommendations that can help you:

- Join a Toastmasters club (visit http://www.toastmasters.org/).

- Take presentation classes.

- Grab every opportunity to speak publicly (and listen carefully).

Leadership Skills

As a BPX, you might not always have people responsibility; you may be the functionality or dotted-line manager. That means your leadership skills become even more crucial as you have to lead through expertise and soft skills.

Here is a partial list of organizations or recommendations that can help you to gain leadership skills

- Join a Toastmasters club (visit http://www.toastmasters.org/).

- Join other clubs and pursue officer roles.

- Volunteer to help organize events (school events for your children…).

- Coach interns or new hires in your company.

Open-Mindedness

All your knowledge does not help, if it prevents you from discovering new things. Experts with great knowledge and experience, especially, tend to use behavior that proved successful in the past to tackle new problems. Although it helped them to be successful, this may be exactly the reason they will fail in the future.

> Alfred Sloan, who ran General Motors from 1923 to 1956, was onto something when he said at a meeting, "Gentlemen, I take it that we are all in complete agreement on the decision here. Then, I propose that we postpone further discussion … to give ourselves time to develop disagreement and perhaps gain some understanding of what the decision is all about." [7]

There are many examples (Polaroid, American tire industry, disk drive industry…[14]), where gathered expertise proved to be an obstacle for the coming changes.

A BPX should therefore always consider that new business processes and requirements might challenge existing knowledge and understanding. In order to institutionalize this, a BPX must make sure that diverse teams are formed and *zero-gravity thinkers* [7] are invited to projects to question and challenge the status quo.

Cultural Diversity

There are two aspects of cultural diversity that are important:

- Culturally diverse teams take more time but come up with many more solutions than homogeneous teams.
- Perceived communication problems are often based on misunderstandings due to cultural differences.

As a BPX, you need to be aware of both points.

How to Start

Subscribe to relevant periodicals about your solution or industry area. And read them on a regular basis! Join a Toastmasters club or other organization where speaking and effective listening are crucial. Dive into the tools that were mentioned one by one and take classes, or look into the blogs on SDN or the BPX Community.

If you follow these steps, you are on your way to better comprehending and succeeding in the business you are working in.

Related Content

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