

# Port business architecture – helping to improve business performance

## Part 2: How to implement PBA at your facility

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*In the 50th Edition we discussed the business complexities of ports/ terminals and the continuing pressures they face, which show no signs of abating. In order to help improve business performance, whilst dealing with these challenges we introduced the concept of Port Business Architecture (PBA). In Part 2 we look at how to implement PBA, further highlighting the benefits such an approach can bring.*

A port is clearly a complex business operating as a key link in an international supply chain. There are increasing pressures to improve profitability, whilst delivering enhanced services at lower costs in a secure environment, with due considerations to sustainability and safety. Ports therefore must be designed with adaptability and continual improvement in mind.

The approach we at BMT have termed Port Business Architecture (PBA) will enable a Port Operator to design the most effective business model, whilst taking into account the complexities outlined in Part 1.

### What is PBA?

Port Business Architecture (PBA) can be defined as a coherent number of principles, methods, and models that are used in the design and realization of a port's strategic objectives, organizational structure, business processes, information systems and infrastructure.

In practical terms, a port's business architecture is a model of the business that enables decision makers to ask pertinent questions and obtain answers in which they feel confident about, providing an approach similar to the successful 'Ask Jeeves' model. This is not something you can buy off-the-shelf but a bespoke solution tailored to meet the specific needs and aspirations of a port or terminal. It takes time and effort to create such a model, but you do not need to wait until it is complete to realize the business benefits. In fact, merely the conscious decision to embark on this journey can spark a flurry of meaningful questions that your organization should know the answer to, probably thinks it knows the answer to, but on embarking to solve a problem realizes that it actually doesn't hold these answers. This type of misconception is a common reason why investment projects do not finish on time or budget. With PBA, this genie can be firmly put back in the bottle where it belongs.

As part of the implementation process of introducing the Port Business Architecture approach, it is necessary to set up a strong governance structure, identifying the necessary rules and guiding principles, a framework, processes, an effective software tool to hold the model and of course the people to *run* the Port Business Architecture.

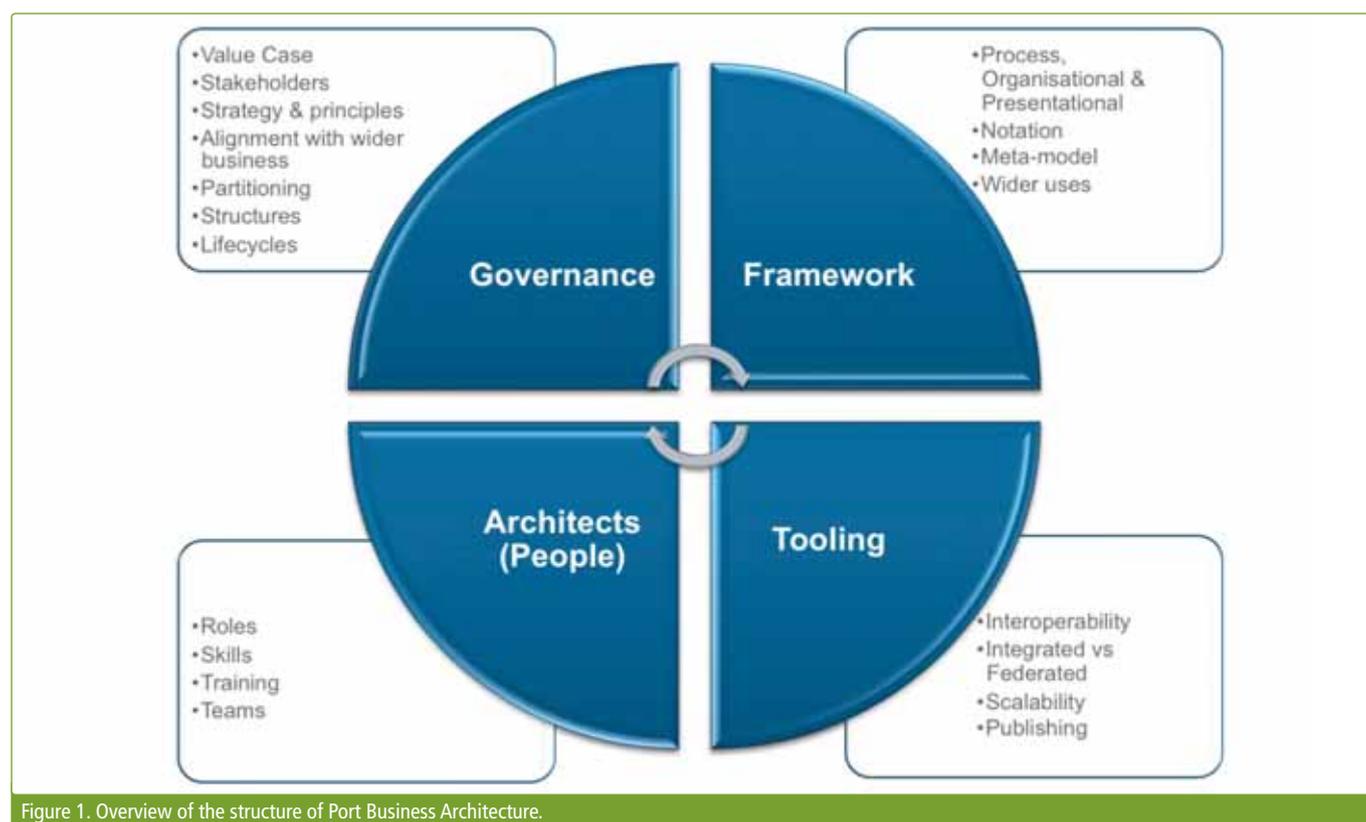


Figure 1. Overview of the structure of Port Business Architecture.

## The journey is just as important as the destination

What has been found to be even more important than having a completed Port Business Architecture model is the journey an organization takes to achieve the end goal. This is often where significant improvements are made because a company, in many cases for the first time, duly considers who its customers are, what it offers, what it delivers, what it does behind closed doors, why it does it and determines where costs are incurred. The simplest way to look at these areas is to start by documenting them in a single, integrated model of the end-to-end business. This model will contain details of the processes, the organization that uses the processes and the IT that supports those processes. In every consultation carried out by the authors and their colleagues, opportunities to improve the business have been identified during this discovery phase time and time again.

To enable an organization to start this journey, the process requires a buy-in from senior executives and effective communication of the overall improvement objectives to all staff. This is probably the hardest aspect of such a program, as individuals will start becoming aware of changes that may affect them and their position. In essence, we are asking people to think about what they do, why they do it and most importantly consider themselves as part of a process, part of a link in a very important chain.

How many times have your employees wished that they had been given different information, perhaps more or maybe less, that would have enabled them to do their job more efficiently? The key is to encourage individuals to consider who relies upon them in the overall process and make sure they deliver what the next person in the process actually needs, not what they think they need. This is a fundamental part of the process in order to ensure an organization can benefit from continuous business improvements.

## How do we start the journey?

### Executive buy-in

The first step is to sell the benefits of PBA to the senior executives and clearly articulate the Change Program which will follow to the workforce. The executives need to clearly understand the associated costs and most importantly, the return on the investment in PBA. The challenge is that ports and terminals are so busy improving their operational efficiency that they have little time to consider improving business efficiency. This is where a Management Consultancy who understands Ports and the Port Business Architecture approach is very cost effective at helping you to take the initial steps. When considering external consultants ensure that they are focused on transferring knowledge to your own internal team as it is up to you to own the approach and the resulting PBA.

### PBA virtual team (PEOPLE)

It is also necessary to create a small team (this should be a virtual team – initially part-time) that analyzes a cross-section of the business. Their role is to clearly and precisely define the questions that the port/terminal wants to be able to answer more easily and more confidently.

### Define PBA questions

A few questions have been mentioned in this article, but it is important to consider not only the question, but also who is asking it. A simple question such as “What do we need to do to accept the Triple E Class of vessels? And should we do so?” has many different levels of detail in the answer, which will be pertinent to certain individuals in the business. For example, a planner will be concerned with time and numbers of containers

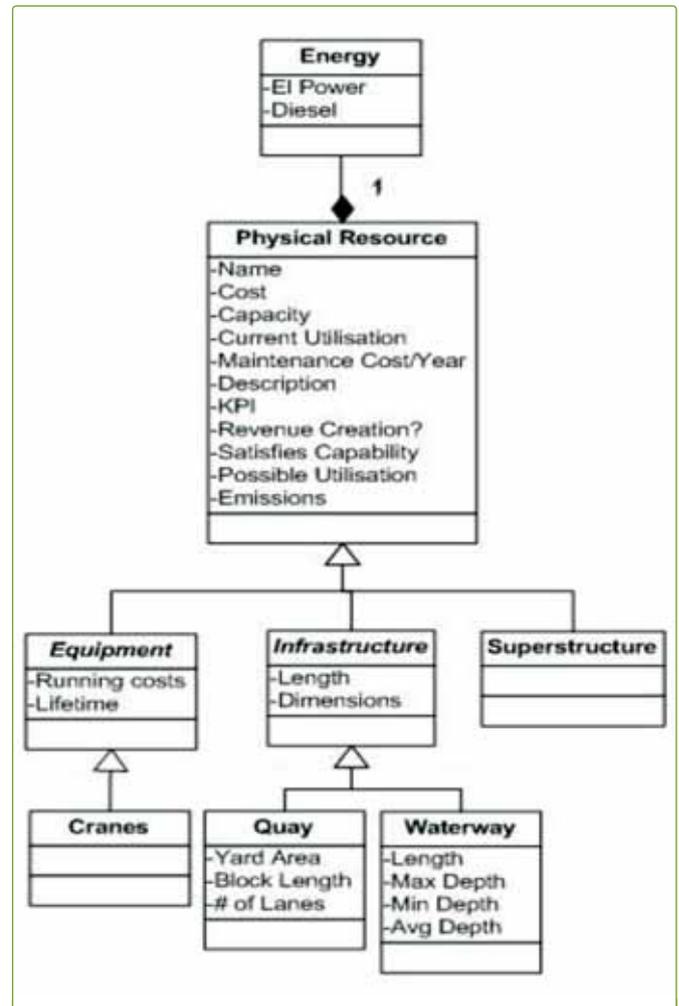


Figure 2. Metamodel of operational processes of a port or terminal.

moved; the finance officer will want to focus on fuel costs; maintenance will look at ongoing costs, while the CEO will want to see trends and margins.

### Define PBA nomenclature and structure (FRAMEWORK)

As aforementioned, the objective of PBA is to create a model, similar to the ‘Ask Jeeves’ concept. Therefore, the next step is to define the structure of the knowledge base/model that will enable the business to obtain the answer in a form that is appropriate to their needs. This can be technically challenging and an independent expert with expertise in this could prove extremely beneficial. A PBA metamodel and a PBA framework that is configured for a particular business are both needed.

Figure 2 is a partial metamodel of a port or terminal. The rectangles represent the areas of interest to the business with the lines between the boxes indicating how these areas relate to one another. For example, a ‘Crane’ is a particular type of ‘Equipment’ that is a particular type of ‘Physical Resource’. A ‘Physical Resource’ consumes ‘Energy’ and so on. These relationships are important to allow us to answer questions such as: “What will be the effect on my OPEX if I update my port to accept the Triple E Class of vessels?”

The next aspect is to define a Framework. A Framework is a simple way of categorizing the information you are going to store. It helps those responsible for the model to maintain it and ensure they can provide the right information.

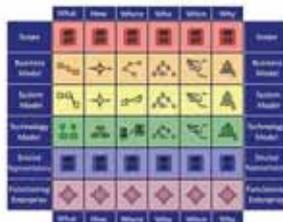
Figure 3 shows three different types of frameworks. These are combined and configured for the particular port or terminal. This becomes part of the IPR (Intellectual Property Rights) for that organization.

An **Architecture Framework** provides a set of standards and resources from which an Architecture can be developed and maintained.

*It is common to combine different frameworks to deliver an architecture*



*Presentation Framework*



*Organisational Framework*



*Process Framework*

*They are all designed to be adapted and can be combined*

Figure 3. Three differing types of architectural framework for a port or terminal.

### PBA Governance

Architectural Governance comprises the rules that determine who is allowed to change, add or delete what type of information at which particular location within the PBA. In other words, they are the rules that determine how the organization maintains the PBA. Governance must be defined to ensure:

- Strategic alignment across the organization
- Value through-life delivery across the whole enterprise
- Consistent performance measurement is achieved
- Effective management of risk
- Regulatory requirements are met
- Value for money for the investor.

### Defining PBA tooling

Capturing information about the port and its business operations is vital and so a robust tool must be in place to enable organizations to carry out this important activity. There are many tools on the market each claiming to provide a complete solution, but do not forget that the objective is to deliver business benefits quickly and consistently.

Therefore, organizations must ask whether or not the tools that they already have could achieve this and do you in fact need specialist tools that not only can incur further costs, but can also add some degree of complexity when integrating with existing business infrastructure.

### START using PBA on a project

The most important part of the journey is to start using the principles of PBA on a particular project. The project can be small and will not only require you to define a number of processes, but to look at the people involved both within the port and the external supply chain. It needs to consider technology, potential civil engineering changes and of course finance. Following the steps outlined above will allow organizations to develop their first PBA model. This can be used and extended as other improvement projects occur.

### Communicate results

Through this approach valuable information about the Port Operations and the associated benefits will be recognized and this should be communicated across the whole organization. The initial success will encourage other projects to want to use PBA and instill confidence in using such an approach to a point at which PBA becomes the norm.

Ports that implement a Port Business Architecture approach will better understand its business and how the people, processes and technology need to be balanced to deliver the business objectives and satisfy the end customer's demands. With the help of a Port Business Architecture, a port is able to ask strategic questions to help it determine what changes it should make and the investments needed to meet the current and projected market requirements. Also, the Port Business Architecture enables a port to quickly understand the tactical, in-depth implications of a chosen strategy route and therefore allow it to take more effective, calculated risks through a fuller understanding of the impact of specific objectives.

#### ABOUT THE AUTHOR

**Martin Sharp** has spent over 20 years working across a broad range of industry sectors delivering business improvements through the implementation of Enterprise Architecture. He is a Naval Architect and Chartered Engineer and combines his marine expertise with that of Enterprise Architecture to deliver this capability in the ports sector. He is proud to be part of the BMT Group of companies and to be regarded as the world's first Port Business Architect.

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