



Capacity Planning & Capital Effectiveness:

A Problem of Supply and Demand

In today's highly competitive and ever-demanding economy, businesses are driven by earnings - not by number of customers, or owning a market as it was in the past. In an earnings driven environment, resources are constricted, forcing companies and departments to use what is already available. In this environment, customer spending is down and risks caused by the unknown are rising.

As the business landscape has evolved into a stronger focus on the bottom line, so too has the landscape of IT changed. Information Technology has moved from an autonomous, often misunderstood department to a key line of business that is held accountable for its spending and resource utilization in the same way as any other line of business. As a peer to other lines of business, the IT department must now meet the same accountability as the other lines of business for items such as return on equity measurements, cost certainty and resource utilization.

At the same time, the Information Technology industry has moved in a new direction. Agile computing, utility computing and on-demand computing are emerging as the models of how hardware and software should work. These models are put in place with the goal of enabling IT to better meet the demands of its customers in a more cost-effective manner while minimizing risks. This direction for IT focuses on both the demand placed on them in the context of the supply of available resources. By viewing IT resource management from the same perspective as a utility, it allows us to realize that when it comes to capacity planning and capital effectiveness, IT is facing an acute supply and demand problem. After all, a utility is the most efficient use of the supply and demand model available.

What is Supply and Demand?

Once IT understands that it faces a supply and demand problem, then it is able to ask the correct questions to ensure the proper planning and delivery of its systems.

- 1) Do you have sufficient resources to meet your current production demand?
- 2) Will you have sufficient resources to meet your forecasted demands?
- 3) What is the most cost-effective way to meet these demands?
- 4) What are the risks involved with meeting these demands?

Fortunately, this problem isn't unique to IT. Supply and demand problems have been faced by other parts of the business and have been addressed with varying levels of success. This provides the IT department with experience that it can leverage to address its own problem.

One additional burden is that most customers of IT are internal to the business. It is much more difficult to deal with your peers as customers. It is critical, though, to have as deep an understanding of your customers behavior. Without this understanding, there is no way to accurately determine the demands that they are placing on the IT organization. How can someone meet the demand if they don't know who the customer is?

The IT Resource Model

First, let us look at the IT Resource Model. This will enhance the understanding of how IT resources fit into a classical supply and demand model. Then, one can begin to understand how to approach IT Capacity Planning from a supply and demand perspective.

The IT Resource Model, as displayed in Figure 1, contains four layers: infrastructure, middleware, applications and business processes. Each layer supplies products to the layer above and places demands of resources from the layers below. Supply flows up while demand is pushed down.

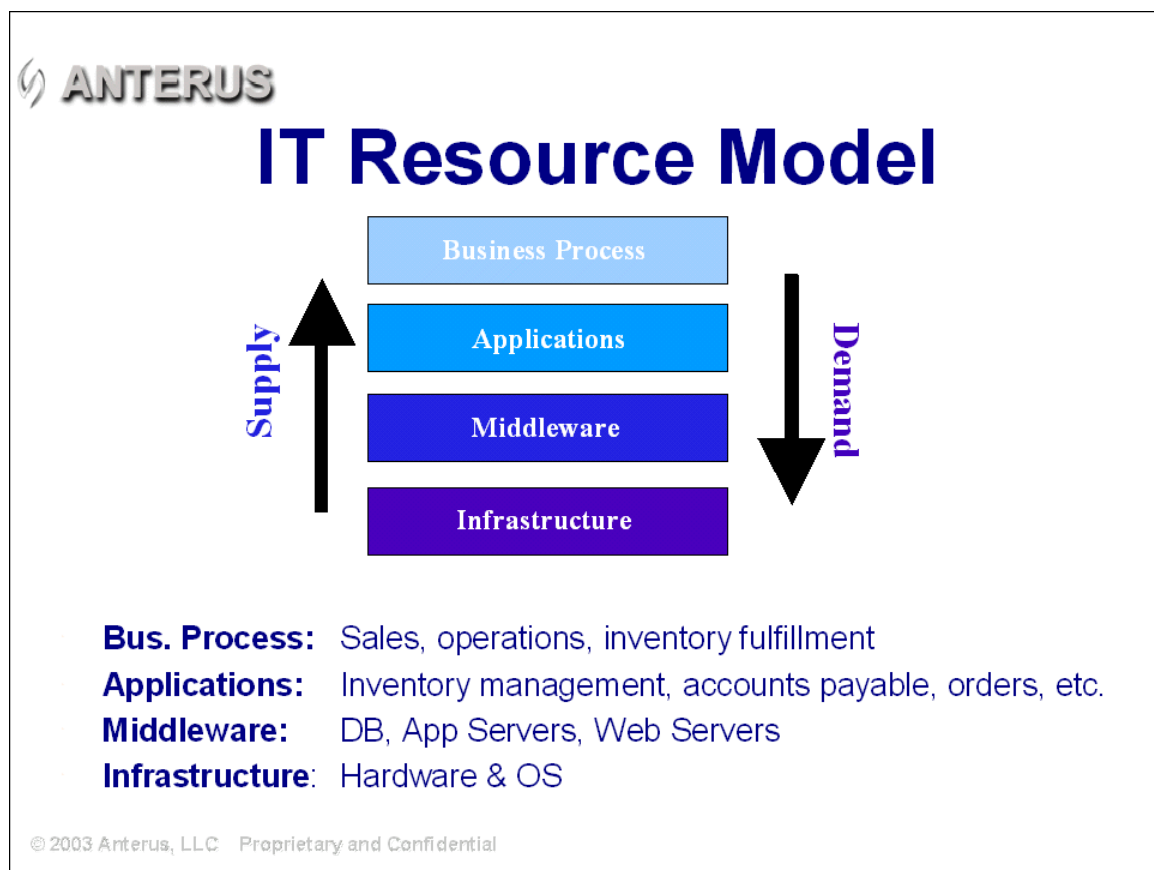


Figure 1: IT Resource Model

A large problem in supporting this model is that management hires people with direct knowledge of only one layer. Unfortunately, each employee who is responsible for one of the layers needs in-depth knowledge of the layers below. This places a heavy burden on IT people and an unbearable burden on the business analyst who resides at the top layer. For example, it is impossible to expect the business analyst to understand all levels of IT. Instead, the business analyst wants to understand from a business perspective answers to questions such as: If you want to increase sales by 30%, can the systems support the additional burden? In a successful supply and demand driven capacity planning model, this answer should be available to the business analyst without requiring in-depth knowledge of IT transactions.

A Simple Supply & Demand Model

In Figure 2, you can see a simple set of supply and demand models that are derived from the IT resource Model above.

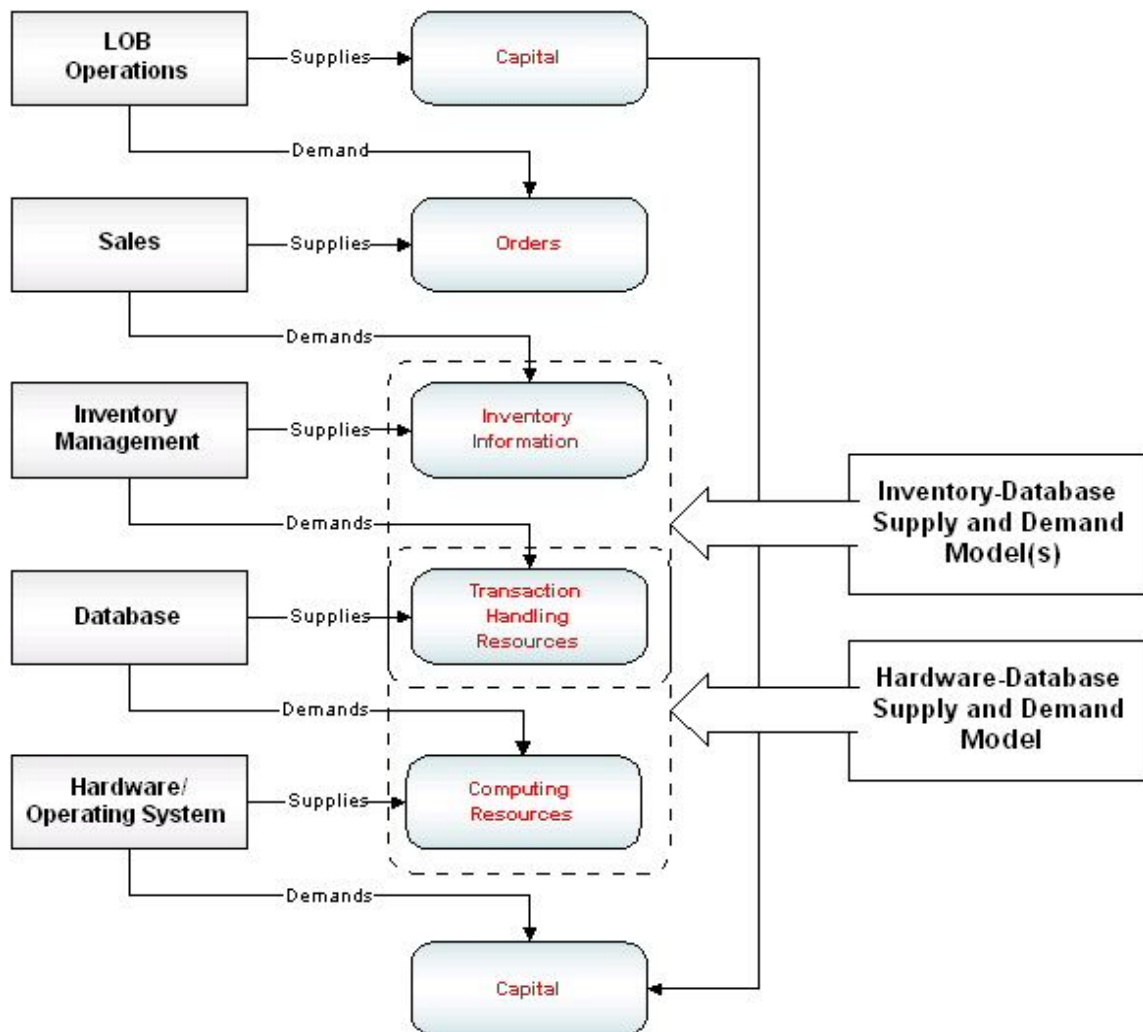


Figure 2: A Simple Supply & Demand Model

Here is an overview of how these models flow:

1. The hardware/OS demands capital. In return, it supplies CPU cycles, disk space, and memory.
2. The database demands computing resources from the hardware/OS such as CPU, disk and memory resources and in turn supplies different types of transactions per second.
3. The ordering application demands transactions from the database and supplies orders.
4. The sales business process demands orders from the ordering application so it can supply capital to the business.

Capital is native to the models. It is critical not to differential between capital and any other resource that can be supplied or demanded. Treating capital in this manner allows for the easy integration of both Capital Effectiveness and Risk Assessment into the Capacity Planning process.

As one can see, the Supply and Demand models actually exist *between* the layers. This is a much different approach than a workload-based model, which focuses specifically on each layer. In addition, there are really multiple supply and demand models, which must interact, and are interdependent. One model can not take into account all of the dynamics between the IT resources.

The Supply and Demand Value Proposition

We have seen that a Capacity Planning & Capital Effectiveness system that is based on Supply and Demand models is very powerful. Specifically, this system brings the following values:

- 1) Takes advantage of what has worked for other lines of business.
- 2) Uses technology that has already been shown capable of solving supply and demand problems.
- 3) Bridges the needs gap between business and IT needs.
- 4) Brings cost transparency to IT
- 5) Fulfills the need for cost measurement
- 6) Assesses and Mitigates risks to your IT investments.

Once an organization realizes that Capacity Planning is indelibly linked to the workings of a supply and demand model, it can position itself to overcome the business and IT challenges faced in an uncertain world.

Anterus, LLC helps companies regain control of their IT resources, make more effective us of capital, and mitigate the risks of their IT investments. Please contact Anterus, LLC at sales@anterus.com or visit http://www.anterus.com for more information.
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