



## Capacity Management

The key to succeeding in the IT world is proactive decision making. If computer systems don't perform, companies lose money, market share, and worst of all - credibility. The increased use and growth of computing systems for E-commerce and business critical operations has made capacity management and executive reporting a vital piece of service level management and cost control. Capacity management ensures that the business processes always have sufficient capacity available at a reasonable cost, as laid down in their Service Level Agreements.

Capacity Management is often viewed as an old fashioned, mainframe-oriented discipline. IT services Managers in charge of distributed computing facilities have argued that Capacity Management takes more time and effort, and therefore cost, than it is worth and that it would be better to 'pay for upgrades as required'. IT organisations with this view tend to exhibit the following symptoms:

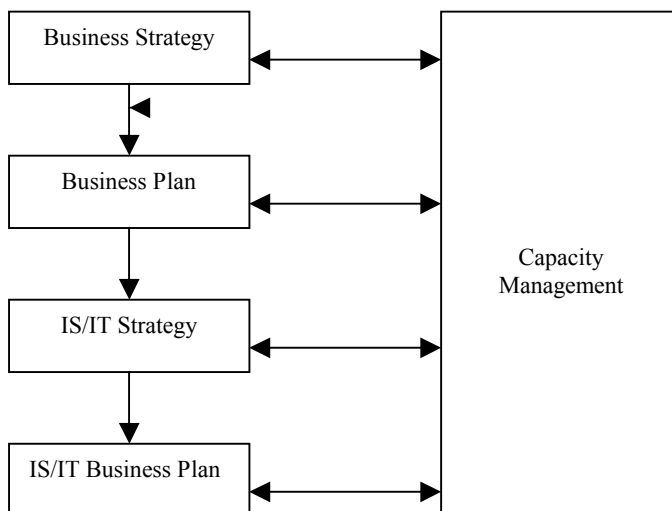
- Procurement of IT equipment is justified on an individual capital return basis, rather than the overall corporate requirement
- There are no corporate Capacity Plans
- No business Capacity forecasts are produced
- Network Capacity Management is done reactively
- Capacity Management of servers is also done reactively, albeit less often
- Little or no Capacity Management is performed on desk top equipment

This insular, short-term attitude is the very antithesis of Capacity Management. A corporate Capacity Management process ensures that the entire organisation's Capacity requirements are catered for.

Capacity Management provides the necessary information on current and planned resource utilisation of individual components to enable organisations to decide, with confidence:

- Which components to upgrade (i.e. more memory, faster storage devices, faster processors, greater bandwidth)
- When to upgrade – ideally this is not too early, resulting in expensive over-Capacity, nor too late, resulting in bottle-necks, inconsistent performance and ultimately Customer dissatisfaction and lost business opportunities
- How much the upgrade will cost – the forecasting and planning elements of Capacity Management feed into budgetary lifecycles, ensuring planned investment.

## Capacity Management and the business



The above figure shows that Capacity Management has a close, two-way relationship with the business strategy and planning process within an organisation.



The organisation's business plans dictate the specific IT/IS strategy and business plans, the contents of which Capacity Management needs to be familiar with and to which Capacity Management needs to have had a large input. In the IT/IS specific business plans, particular technologies, hardware and software are identified, together with some indication of the timescale in which they are to be implemented.

Capacity Management has overall responsibility for ensuring that there is adequate IT capacity to meet required levels of service and for ensuring that senior IT management is correctly advised on how to match Capacity and demand and to ensure that the use of existing Capacity is optimised.

Prerequisites for successful capacity planning are:

- Commitment from all participants especially senior mgt
- Capacity Management being part of an overall strategy and management process
- Capacity Management is a continuous process and cannot be done as a one-off exercise or even a series of one-off exercises and it will not be implemented or delivered overnight

Justifications:

- The need to cope with changing environments
- Providing a quality service
- Ensuring organisational financial stability
- Ensuring there are no sudden unforeseen demands for major upgrades

### **Benefits**

The introduction of capacity management is beneficial to an organisation. There are usually improvements in efficiency, effectiveness and economy, all of which can be quantified and demonstrated.

### **Increased efficiency and cost savings:**

Capacity Management leads to increased efficiency and cost savings in several areas, including:

- Deferred expenditure – if it is possible to defer the cost of new equipment to a later date, then the money that is currently in the budget can be spent in other ways. It may be possible to defer the expenditure permanently, so that the money need never be spent. Also, with the pace of technological change, the later a purchase is left, the more Capacity is obtained for the money
- Economic Provision of services – Capacity is matched to business need. Unnecessary spare capacity is not being maintained and therefore cost savings result. Use of existing Capacity is optimized as far as possible, again resulting in cost savings through not paying for unwanted Capacity during quiet usage periods.
- Planned buying is always cheaper than panic buying.

### **Reduced risk:**

Reduced risk is a major benefit of Capacity Management. Effective Capacity Management reduces the risk of performance problems and failure in the following ways:



- For existing applications the risk is minimized through managing the resources and service performance
- The risk to new applications is reduced through application sizing – as new applications can have an adverse effect on existing applications, the risk to those applications is also minimized
- The Capacity Management process should be included on the Change Advisory Board (CAB) to assess the impact of changes upon existing Capacity, thus reducing the risk of Capacity problems caused by changes
- The number of urgent changes to increase Capacity are reduced and hopefully eliminated, through effective Capacity planning.

**Confident forecasts:**

Capacity Planning improves over time. By establishing normal operating baselines and monitoring usage over time, Capacity requirements for existing services become more accurate. Through application sizing and modeling for new services, more accurate forecasting and greater confidence results.

**Value to application lifecycles:**

Throughout it's lifecycle, application development is influenced by Capacity Management. Additional Capacity requirements can be identified during the early development stages and built into the Capacity Plan. This is in contrast to the more usual approach of thinking about Capacity just before go-live. There are, therefore, benefits in terms of reduced risk and more economic provision of new services.

**Customer relations:**

Capacity management helps IT Directorates to provide services that have good and consistent performance. Good and consistent performance ensures good relationships with IT customers, whether they be direct users or businesses that are dependent on the IT Directorate. Poor service also affects an organisation's relationship with its customers: capacity management helps to reduce this risk.

**Efficient use of personnel:**

When the frustration caused by performance and capacity problems is reduced, more efficient use can be made of IT staff time. Their time is better spent on planning than on 'fire-fighting'.

**Anticipation of problems:**

Potential performance and capacity problems can be anticipated, and corrective action instigated to prevent a crisis.

**Better understanding and awareness:**

Capacity management helps the IT Directorate to understand their IT infrastructures and increases the awareness of the IT Directorate about the importance of SLAs.