

# Foundations in Capacity Management

David Vasey  
Executive Manager, Capacity Planning  
St.George Bank  
Australia



18 February 2008

Foundations in Capacity Management  
David Vasey

1



# Foundations in Capacity Management

- CM100 – Dummies Guide to Capacity Management
- CM101 – What to Do and When
- CM102 – Summarising Data and Statistics
- CM103 – Historical and Future Data
- CM104 - Who are You Serving? and With What?
- CM105 - Can Capacity Planning pay?
- Conclusion



8 June 2005

Foundations in Capacity Management  
David Vasey

2



# CM100 – Dummies Guide to Capacity Management



8 June 2005

Foundations in Capacity Management  
David Vasey

3



# CM100 – Dummies Guide to Capacity Management - Introduction

- What is Capacity Management
- The Argument Against Capacity Management
- Could Capacity Management be important?
- Capacity Planning Cycle
- Capacity Management more involved with other people
- Capacity Management in two parts



8 June 2005

Foundations in Capacity Management  
David Vasey

4



## What is Capacity Management?

A definition:

Ensure that current and future infrastructure is available in a timely manner, to ensure that work is completed in acceptable time.



8 June 2005

Foundations in Capacity Management  
David Vasey

5



## The Argument Against Capacity Management

- Hardware is getting cheaper-no need to plan
- The SysAdmin plans in his spare time
- We ask the vendor—he tells us what we need
- Each application budgets for their servers



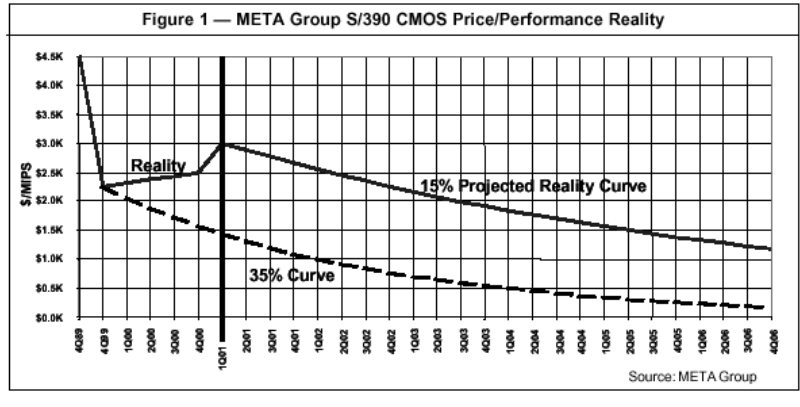
8 June 2005

Foundations in Capacity Management  
David Vasey

6



## Costs Don't Always Go Down



*Open systems often require many servers for Development, Training, UAT, Load testing, Disaster Recovery and don't forget finally Production*



8 June 2005

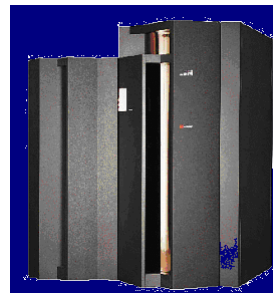
Foundations in Capacity Management  
David Vasey

7



## Could Capacity Management Be Important?

- Regulatory Compliance
- Risk Avoidance
- Accurate Budgeting
- Get Most Out of Your Investment
- Avoid Unplanned Upgrades
- Auditor Requirement



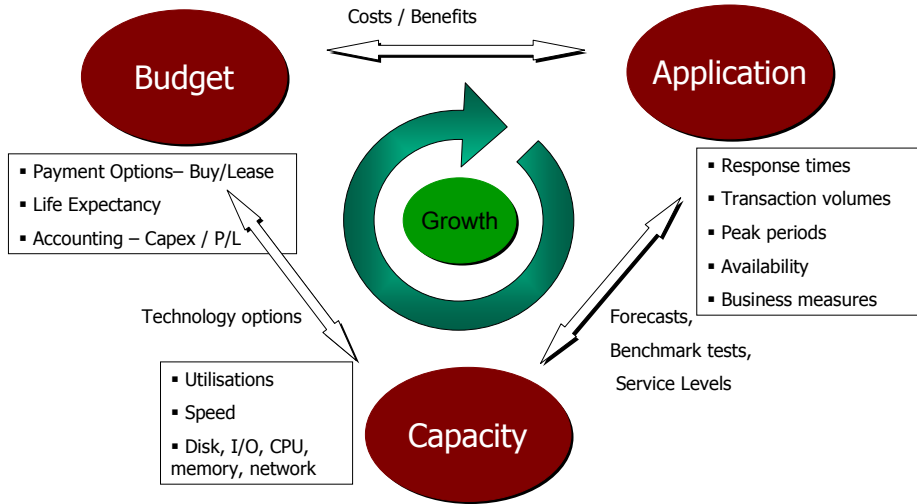
8 June 2005

Foundations in Capacity Management  
David Vasey

8



# Capacity Planning Cycle



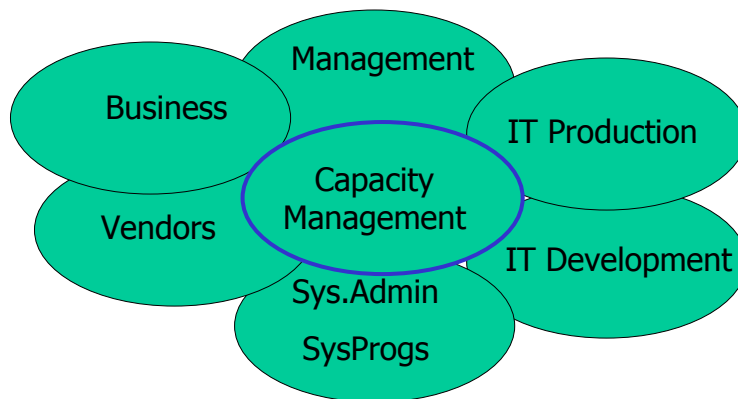
8 June 2005

Foundations in Capacity Management  
David Vasey

9



# Capacity Management Has More Involvement With Other People Than Many Other IT People



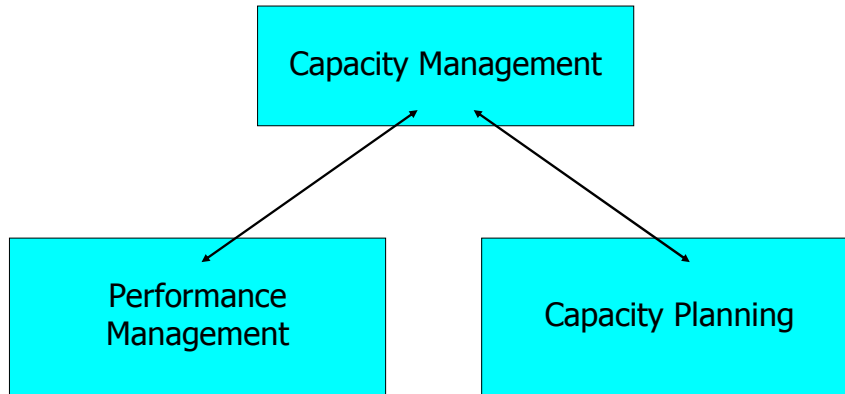
8 June 2005

Foundations in Capacity Management  
David Vasey

10



## Planning vs Management



Ensure that **current** and **future** infrastructure is available in a timely manner, to ensure that work is completed in acceptable time.



8 June 2005

Foundations in Capacity Management  
David Vasey

11



## Performance Management vs Capacity Planning – Data Usage

	Performance Mgt	Capacity Planning
Data currency	Current day (NRT)	Yesterday
Amount of Data	Last few days/weeks	Trend for months, years
Skills required	System specific	General IT & Business
Liaison	Vendor & IT Mgt	IT Mgt & Business
Measures of Success	Response Times okay	No unforeseen upgrades
Organizational Value	Tuning	Forecasting & Budgets

*It is un-fair to expect a SysAdmin to do all this, isn't it?*



8 June 2005

Foundations in Capacity Management  
David Vasey

12



## Capacity Management Goes Out of Fashion (The Argument 10 Years Ago)

- Hardware is cheap and getting cheaper
- Monitoring tools are expensive
- Tuning Experts and Capacity Planners are expensive
- It is not worth the costs of lengthy evaluations – just buy what you think you need!



8 June 2005

Foundations in Capacity Management  
David Vasey

13



## Software Licensing Is the New Hardware

- Windows servers are all half full at best
- VMWare is helping out – but how much can you consolidate depends on growth patterns
- Unix Micro partitioning helps with consolidations but it is old tricks not re-learnt for new dogs!
- Mainframe hardware is increasing at 20% pa
- The Independent Software Vendor Costs is killing the mainframe
- IBM fights back with Z/APP engines and Linux
- Software licensing is the New Hardware – Hardware may be cheap but software license costs are forcing sites to think and re-think before they upgrade nowadays



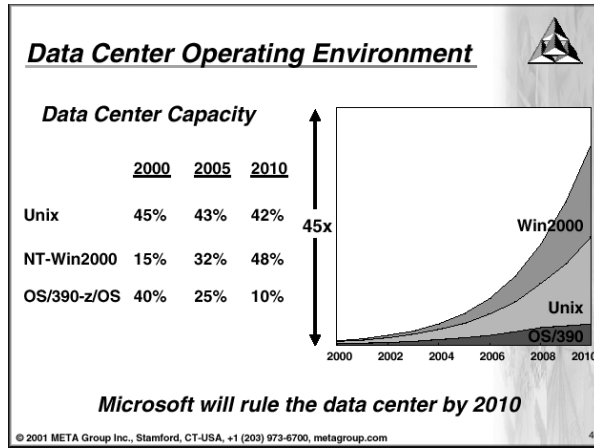
8 June 2005

Foundations in Capacity Management  
David Vasey

14



## Do You Think This Is a Realistic Forecast?



- Do you think we are soon going to live in a Microsoft dominated world?

Or

- Do you think VM Ware and Unix micro partitioning and Linux on will have a big impact?



8 June 2005

Foundations in Capacity Management  
David Vasey

15



## Capacity Management is Back in Fashion



8 June 2005

Foundations in Capacity Management  
David Vasey

16



# Capacity Planning Course As Taught at TAFE and University ...

## Module Information

Successful completion of this module will enable learners to develop the ability to analyze, monitor and improve system capacity, install components and determine future requirements by translating business growth into realistic and achievable forecasts and using these to determine IT capacity requirements



8 June 2005

Foundations in Capacity Management  
David Vasey

17



## Learning Outcomes in Detail

Learning Outcome 1:  
On completion, learners will be able to analyse existing system capacity.

### Assessment Criteria

- 1.1 Review existing system configuration to determine capacity issues.
- 1.2 Identify relationships between current workloads, capacity and performance.
- 1.3 Review current service level agreements to determine capacity standards to adhere to.
- 1.4 Examine fault logs for capacity problems and review actual capacity issues with users.

### Learning Outcome 2:

- 2.1 Discuss future requirements with users and forecast the workload.
- 2.2 Compare actual workloads with future predictions to determine capacity problems.
- 2.3 Estimate equipment and resource requirements.
- 2.4 Determine an effective enhancement strategy taking into account a financial analysis of the capacity requirements.
- 2.5 Document and present recommendations to management.

### 7.3 Learning Outcome 3:

- 3.1 Recognise the impact of changes on operations and develop and implementation plan that minimises the impact of change.
- 3.2 Take into account the availability of finances when planning capacity enhancement.
- 3.3 Plan the capacity enhancement taking into account user requirements and staff availability.
- 3.4 Submit prepared plan for approval by management and user departments.

### 7.4 Learning Outcome 4:

- 4.1 Install capacity enhancements in accordance with the plan.
- 4.2 Measure the capacity increments due to installed equipment and demonstrate it provides the additional resources expected.
- 4.3 Update all documentation, asset registers, hardware reports, etc. to reflect the additional capacity.

### 7.5 Learning Outcome 5:

- 5.1 Monitor development design phases of applications to assess impact on capacity and performance.
- 5.2 Implement a performance database, set benchmarks and regularly review performance.
- 5.3 Assess the impact of new technology on capacity and performance.



8 June 2005

Foundations in Capacity Management  
David Vasey

18



## The Argument For Capacity Management

- Hardware is not getting cheaper
  - Usually require n\*servers for Development, Training, Load Testing, Disaster Recovery and also Production
  - Software is the new Hardware
  - Open Systems vendors are now charging by CPU (and size)
- The SysAdmin plans in his spare time
  - Usually he has no spare time and no skills – as we have seen performance and capacity are different
- Each application budgets for their servers
  - Virtualisation allows sharing when you are not sharing
- Compliance – ITIL / CoBIT Accreditation
- We ask the vendor – he takes our money



8 June 2005

Foundations in Capacity Management  
David Vasey

19



## Dummies Guide - Summary

- Capacity Management important – avoid untimely upgrades and be seen to conform to compliance rules
- Capacity Planning is an on-going Cycle
- Capacity Management involved with people – therefore you must be able to communicate
- Capacity Management in two parts – Performance Mgt and Capacity Planning
- Capacity Management back in fashion because of risk and increasing costs – 'software licensing is the new hardware'. There are TAFE and Uni courses in Capacity Planning.



8 June 2005

Foundations in Capacity Management  
David Vasey

20

