

ACS/CMGA Enterprise Capacity Management Special Interest Group

Inaugural Meeting 29 August 2006

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(Considerable material stolen from David Vasey, Capacity
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Capacity Management Intro

- § What is it?
- § Capacity Management in the Business Process
- § Capacity Management in the IT Process
- § How do we do it?
 - Ø Data, Analysis, Reporting
- § Does it pay?



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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.



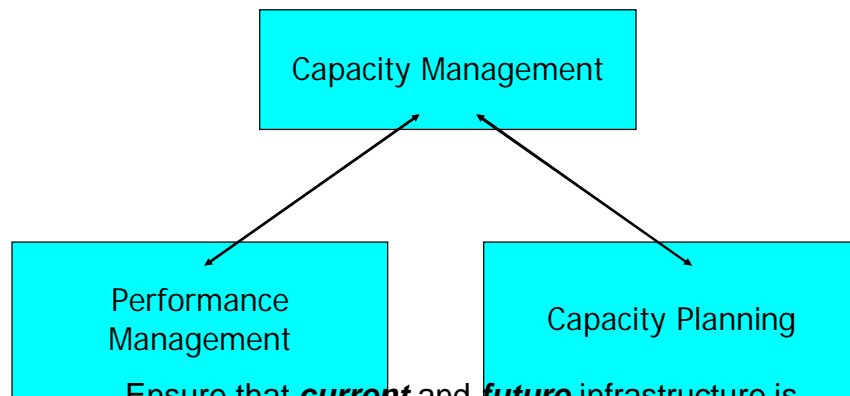
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Planning vs Management



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



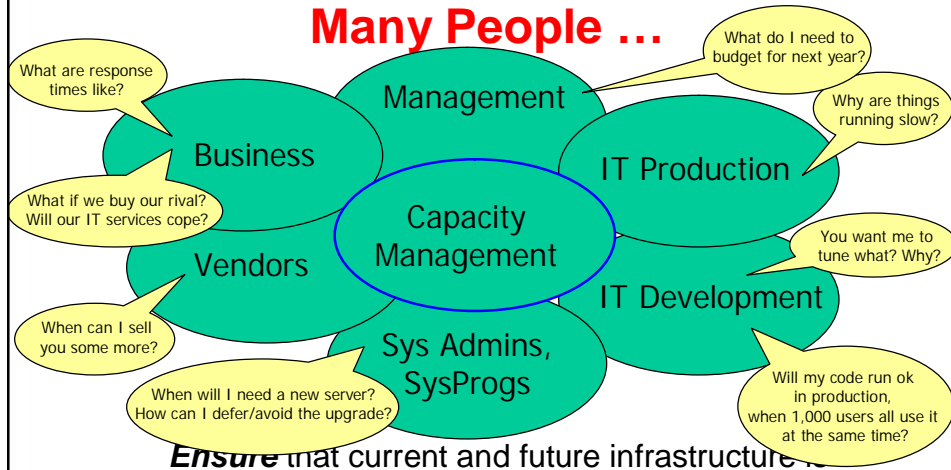
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Capacity Management Involves Many People ...



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



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Capacity Management in the Business Process

- § May be a culture shock
- § Often requires a "compelling event"
- § Depends on Organisational Maturity



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Five Levels of Organisational Maturity

1. Reactive firefighting
2. Professional firefighting
3. Adopting proactive approach
4. Formal Capacity Planning
5. Capacity Planning is a necessary part of business model

- Gartner Research Note SSA-PRD-165, November 1996



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Level 1 – Reactive Firefighting

- § Diagnostic tools highly prized
 - § Silo approach to tool ownership
 - § Firefighters are heroes
 - § Planning is considered less important than problem solving
- è Just needs a compelling event, and a high level audience



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Level 2 – Professional Firefighting

- § Formal performance teams
 - § Money spent optimising existing systems
 - § Capacity Planning seen as threat
- è Needs a very compelling event, or a very highly placed audience



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Level 3 – Adopting Proactive Approach

- § No longer crisis-focused
- § Some forecasting tools
- § Fewer performance constraints
- § (May be) Better IT alignment with business
- § Focus on high quality service
- § Interest in procuring proactively and only as necessary



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Level 4 – Formal Capacity Planning

- § Capacity Management includes development process
- § New and changed applications have statement of expected growth
- § Regular Capacity Plans validated as part of business process



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Level 5 – Necessary part of Business

- § Unexpected events lead to refinement of Capacity Management processes
- § Customer impact is main driver of planning process
- § KPI's based on Capacity Management success
- § Team work preferred over individual heroism



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Frameworks - ITIL

What is ITIL?

A series of documents that are used to aid the implementation of a framework for IT Service Management. This customisable framework defines how Service Management is applied within an organisation.

ITIL origins

Come from The U.K. Central Computer and Telecommunications Agency, which is now integrated into the Office of Government Commerce (OGC).

Who Uses ITIL?

The approach has been adopted by hundreds of organizations worldwide, including Procter & Gamble, AT&T, HP, Fujitsu, EDS, Ericsson, Woodside Energy, KPMG, Microsoft and the Australian and New Zealand Departments of Defense.

ITIL has been adopted as the basis of Microsoft's Operations Framework

What are the benefits of ITIL?

- Align IT with the Business
- Reduced Costs
- Customer satisfaction

ITIL - Capacity Management

Capacity Management is the discipline that ensures IT infrastructure is provided at the right time in the right volume at the right price, and ensuring that IT is used in the most efficient manner.

Inputs to Capacity Management processes:

- Performance monitoring
- Workload monitoring
- Application sizing
- Resource forecasting
- Demand forecasting
- Modelling

These processes result in:

the capacity plan itself, forecasts, tuning data and Service Level Management guidelines.

[Source: www.itil-itsm-world.com]



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Auditors – The Inverse of Planning?

- The inverse of Capacity Planning is: There is a risk the IT infrastructure is inadequate and there will be a negative impact to the business as a result of the lack of capacity.

It is the job of the auditors to identify this risk and recommend the steps that need to be put in place to minimise this risk.

- Therefore auditors are interested in capacity management. They are risk savvy, but not experts in all aspects of IT. To become an auditor you must sit exams – notably the Certified Information Systems Auditor exam (CISA), which is managed and controlled by The Information Systems Audit and Control Association (ISACA).



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Capacity Management in the IT Process

§ Whatever it is, it needs to fit into:

- Ø Daily Production
- Ø Development life cycle
- Ø Procurement Process



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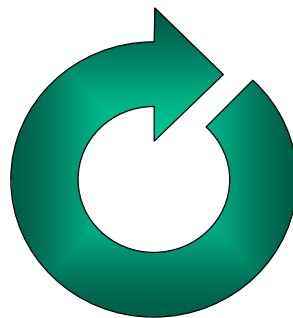
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Daily Operation of IT Production

Define policy:
Architecture,
Standards,
Service Levels

Manage change:
business change,
development,
testing



Monitor,
measure,
alert

Production:
control,
manage,
optimise



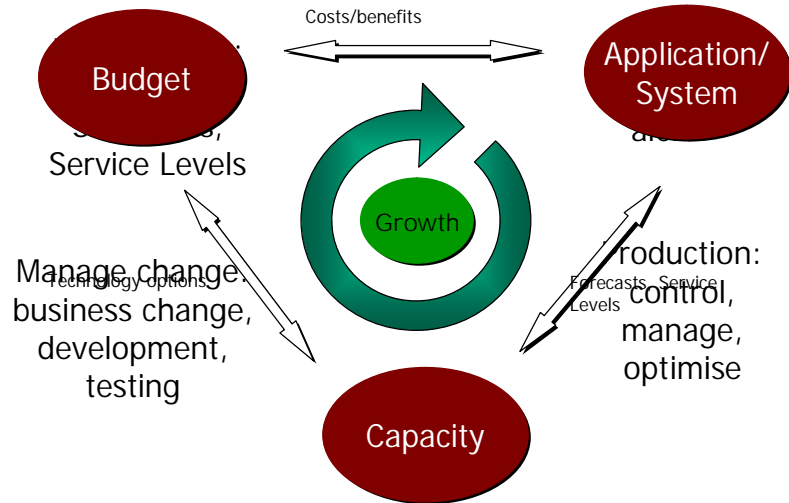
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Combining with Capacity Management



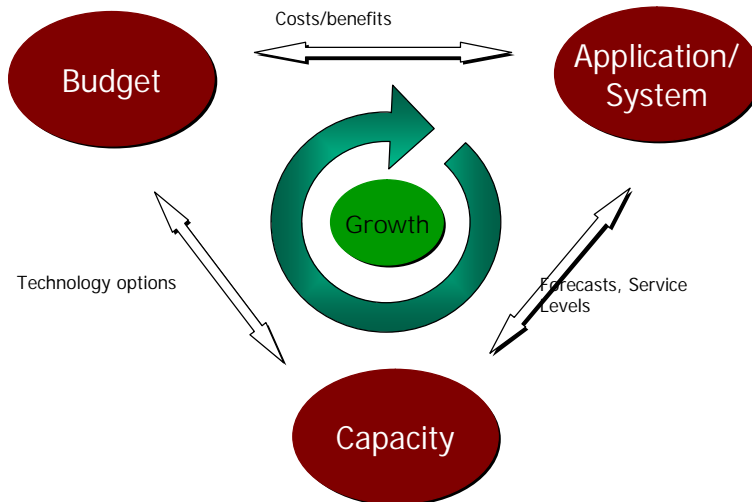
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Capacity Management Process



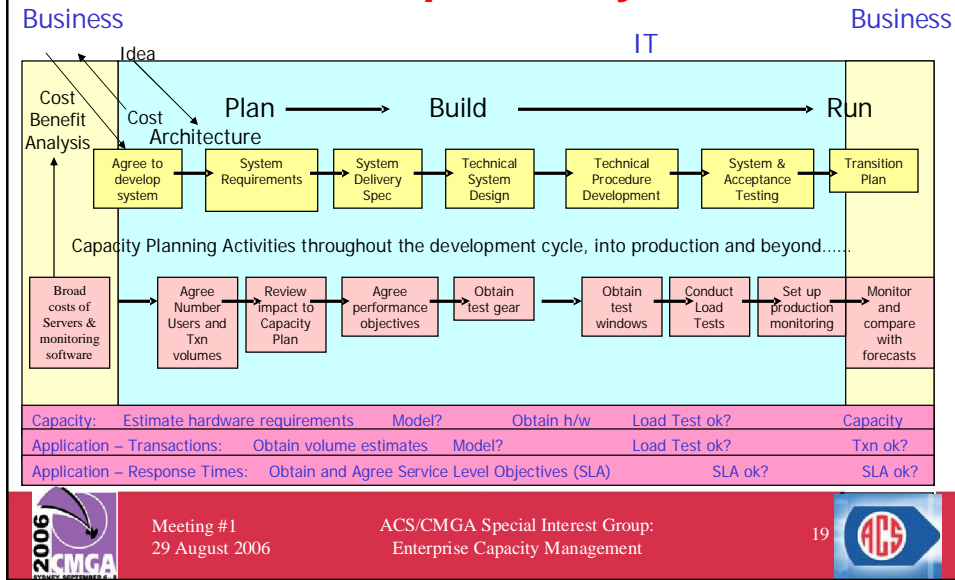
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Capacity Management in an IT Development Cycle



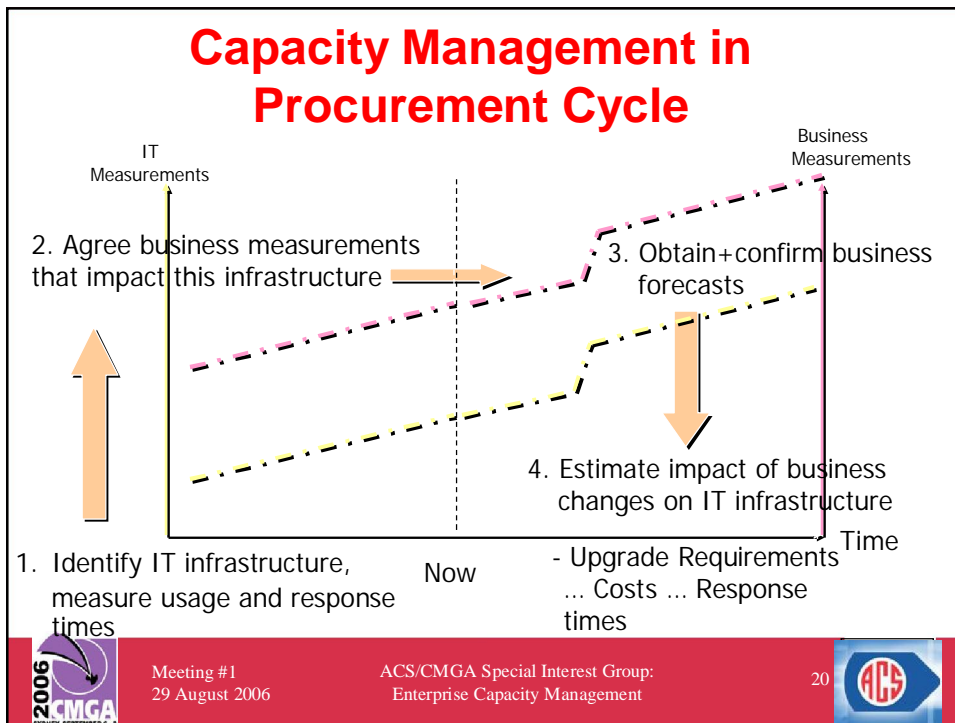
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Capacity Management in Procurement Cycle



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Capacity Management

HOW DO WE DO IT?

- § Measurements
- § Numbers
- § Lots of them ... (!)



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How do we do it?

Measurement:

When you can measure something, and express it in numbers, you know something about it. But when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind: it may be the beginning of knowledge, but you have scarcely (even in your thoughts) advanced to the stage of science, whatever the matter may be. – *Lord Kelvin, 1883*



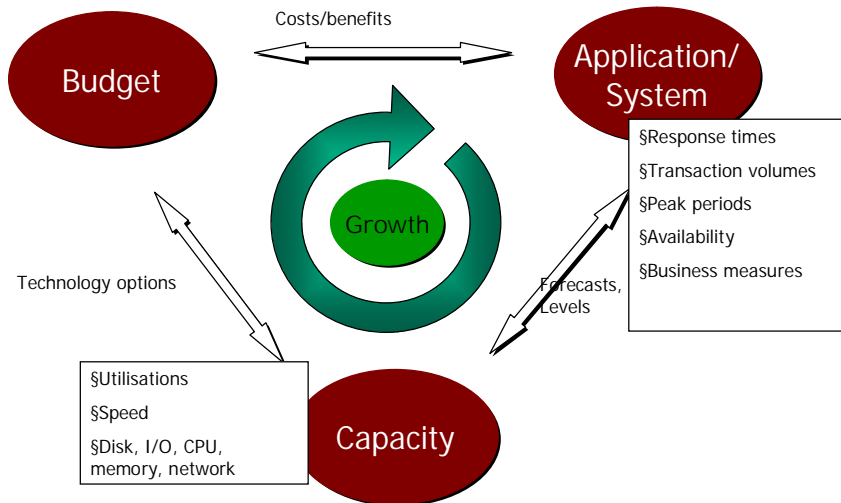
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Measurements we might want



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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
Organizational Value	Tuning	Forecasting & Budgets



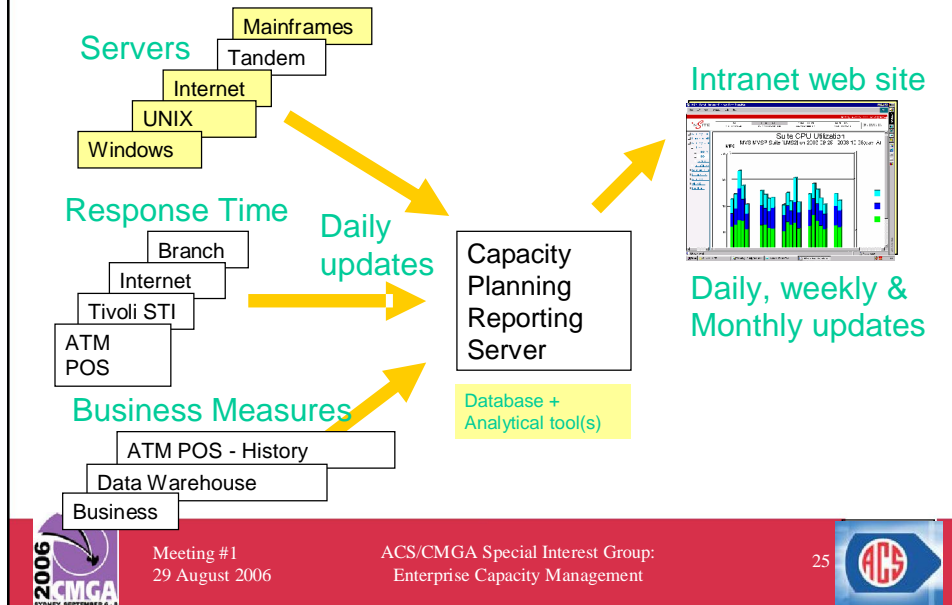
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What to do with the data?



What do we do with the data?

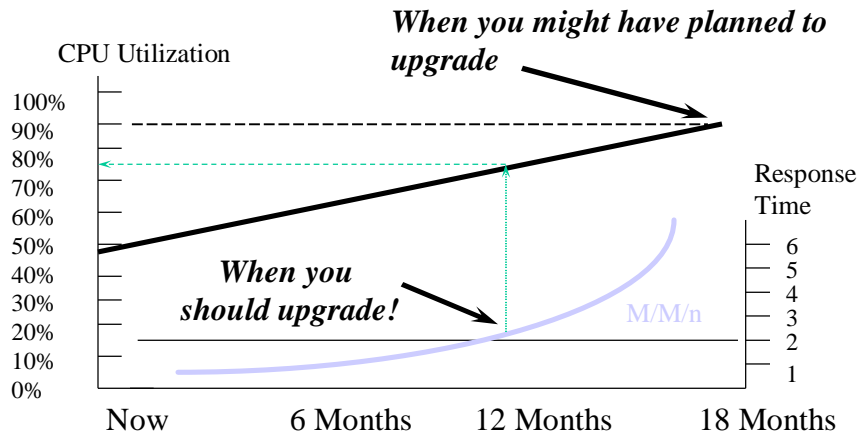
"Data":

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?

– T.S. Elliot, ca 1930

“Modelling” response time is critical ...



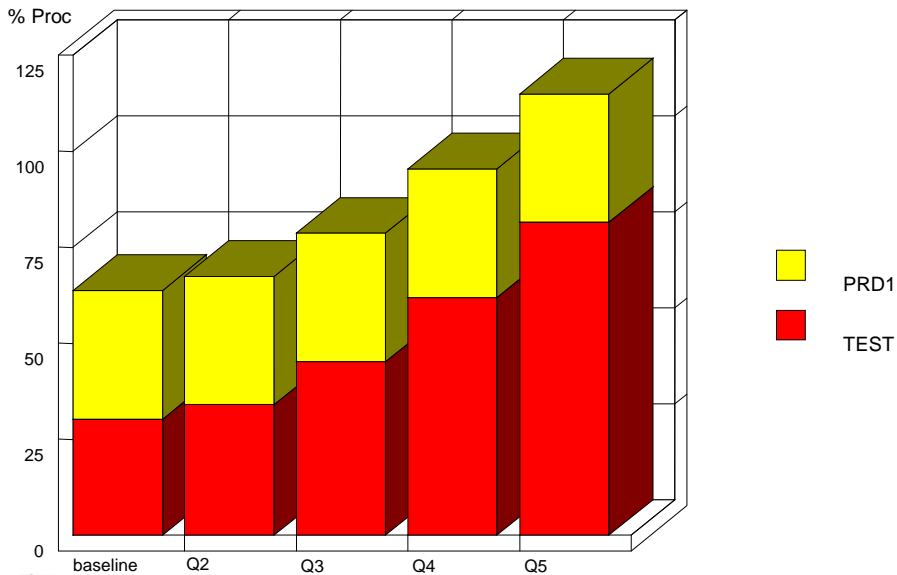
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4 Quarters' Growth - CPU Sizing

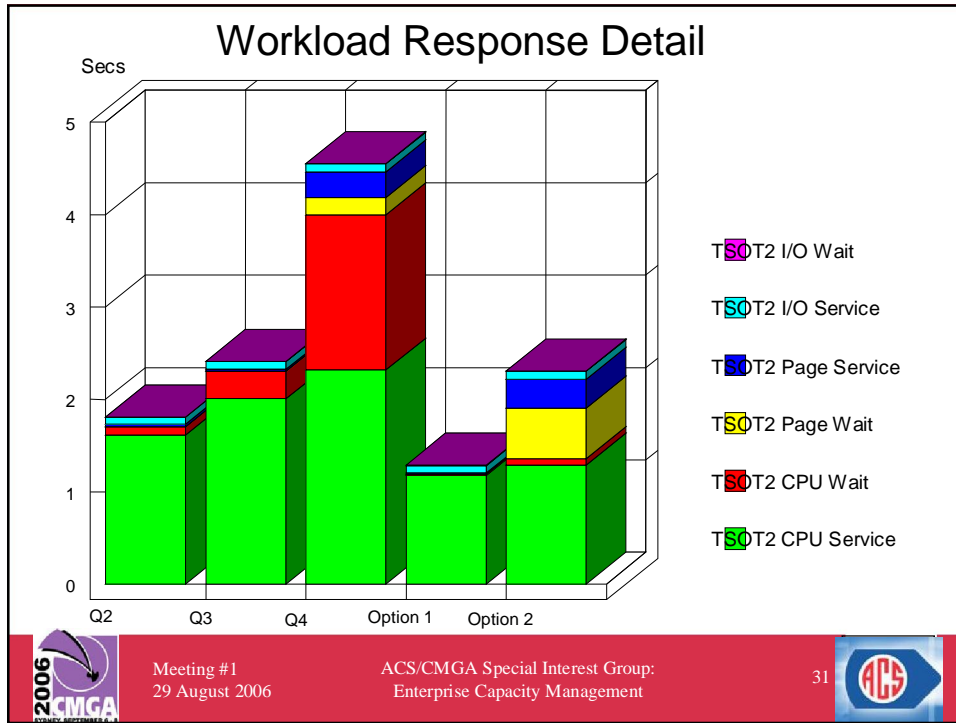


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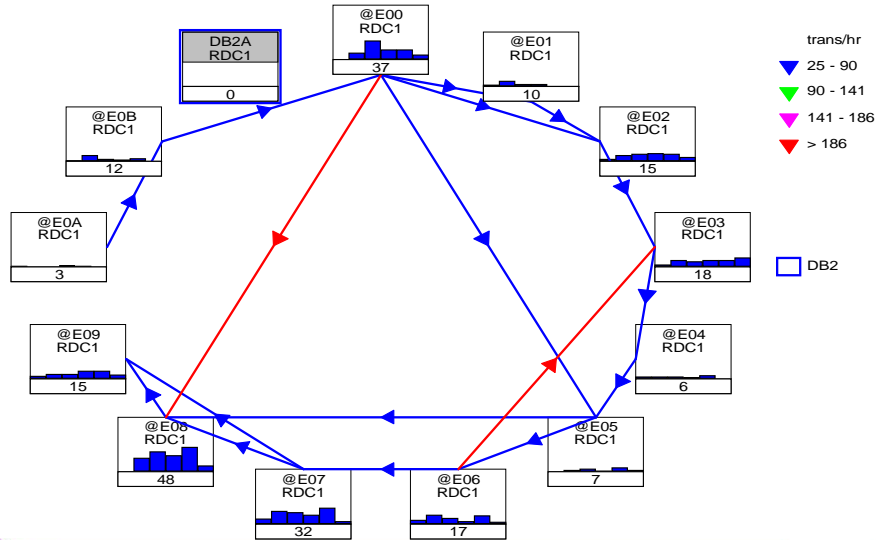
The most important thing you can do with the data?

Pretty pictures for the Managers ...


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CICS CATD Application Transaction Rate Map

Workload CATD by Region on 22 October



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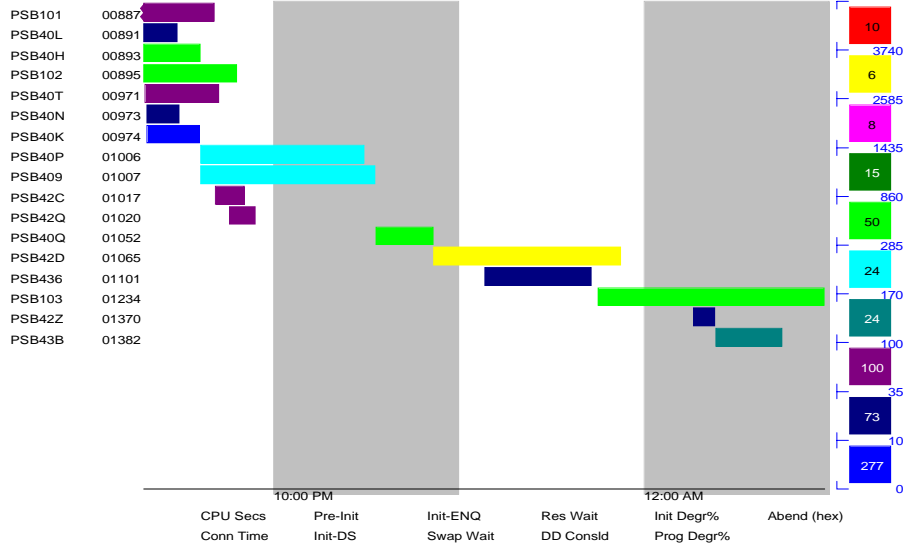
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Critical Batch Window Profile for Billing Batch First Cycle

Order: Start Time From SYSA:BILLBAT on 22 October

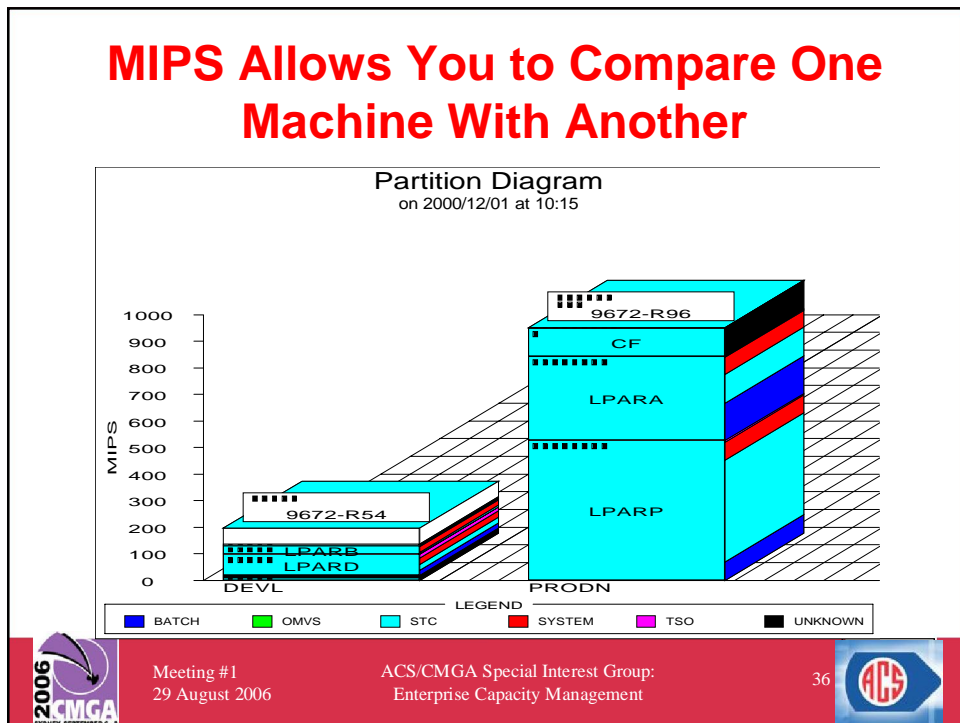
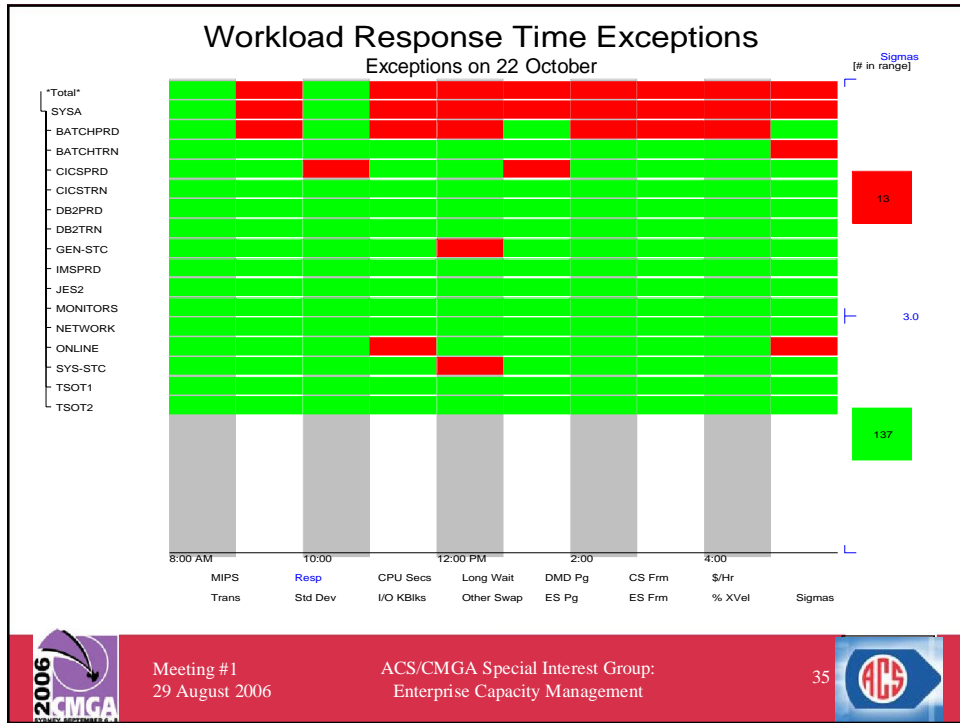


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Conclusion

- § Working definition
- § Looked at integration with Business and IT processes
- § Looked briefly at some analytical techniques, introduced “prediction”, non linear response times, saw some pretty graphs
- § Saw an example of high profile success
- § Probably made it all sound too complicated!



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Where to next:

- § Computer Measurement Group Australia 2006 Conference: 6-8 September, Sydney, see www.cmga.org.au
- § “Foundations of Capacity Management” ½ day seminar at conference will be more detailed
- § Monthly ECM SIG, see www.acs.org.au
- § MXG-L archive: www.mxg.com/main_mxgl.asp
- § ITIL: www.itil.co.uk



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