

Managing Production Systems

hpug
The Independent
HP User Group

**Dennis Adams
associates**

The HP User Group
in partnership with
Dennis Adams Associates Ltd.

**“Managing Production Systems:
Fire-Fighting and MOPS”**

January 2006

Agenda

- 09:30 Registration
- 09:55 Welcome – HPUG chairman
- 10:00 The challenges of managing IT Production then & now.
The “MOPS” strategic approach.
- 11:00 Refreshment Break
- 11:15 Metrics and Operational Tools
- 12:30 Lunch
- 13:15 Processes, Procedures and Standards
- 14:15 Refreshment Break
- 14:30 Bringing it together – creating and implementing a
Production Strategy.
- 15:30 Open Forum.
- 16:00 Seminar Ends

M **METRICS**

CPU Demand for Business Transactions

Business Transactions	CPU Demand
100	40
200	45
300	55
400	70
500	90
600	110
700	130
800	145
900	155

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METRICS ?

- METRIC = *"(technical) A system or standard of measurement"* [Concise Oxford Dictionary]
- *"A value or set of values that SUMMARISE the state of a system"* [Anon]
- *"Some numbers which tell me what is happening"*

• *"Errors using inadequate data are much less than those using no data at all."* [Charles Babbage]

• *"The numbers are a catalyst that can help turn raving madmen into polite humans."* [Philip J. Davis, "Mathematical Maxims and Minims" edited by N. Rose]

Why Collect Metrics ?

"That which is not written down,
Does not Exist"

Ancient Babylonian Proverb.

WHAT could METRICS do for us ?

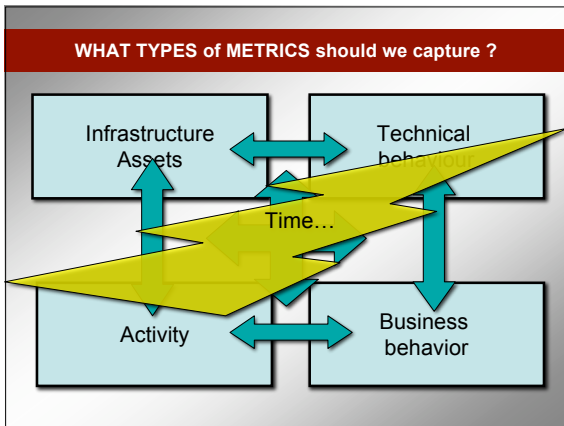
- Metrics should enable us to:
- **Explain** to the Business what the IT Production Team is doing
- **Justify** expenditure and future IT Infrastructure Investment
- **Identify** "problem applications"
- Enable efficient **Planning**
- **Control** where resources are allocated

We know we are doing things right.
The client knows we are doing the right things.

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WHAT makes METRICS USEFUL?

- Understand the TARGET AUDIENCE:
 - Technical teams trying to monitor / tune systems ? (X)
 - IT Production Management trying to allocate priorities ? (Y)
 - Business trying to find out what IT Production is up to ? (Y)
- IT Production provides a SERVICE:
 - Activity Metrics (e.g Man-Days) should be related back to the Business Function they support - I.e. the underlying APPLICATION.
 - Technical Metrics (e.g CPU use) should be correlated with the underlying BUSINESS METRICS which caused them.
- IT Production can be considered a BUSINESS
 - "Fixed Assets" Balance Sheet = Servers, Disk storage etc.
 - Variable Costs = activity to support an Application
 - Fixed Costs = activity to manage core infrastructure (which must be charged back to the customer).



METRIC Traps

- Dangers associated with collecting Metrics or KPIs:
- "Technical Overkill"
 - CPU utilisation to the nth degree may help us squeeze out the last 2% of the available power, but in terms of managing IT Production, it should be of little interest.
- "KPI Khaos"
 - Collections of hundreds of KPIs published on a monthly basis (2 months later?) and read with very little interest by lots of managers with more important things to do.
- In practice., we should collect that information that gives a broad brush indication **for the purpose of managing the department**
- Metrics should be captured **for a specific target audience.**

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Metrics Auditing

- What methods are in place for collecting and publishing key performance indicators (including man-hours) and technical metrics (such as CPU, disk utilisation etc.) ?
- These are essential in order to explain to the Business what the IT Production Team is doing, to justify expenditure, to identify "problem applications", and for future planning.
- Identify and collect some key statistics to understand
 - what is happening to your systems Technically (CPU etc.), and
 - where your support Activity is going (time spent).
- Incorporate these into a pragmatic capacity planning function.

Types of Metrics

- Operational Activity (man-hours, no of call outs)
- Technical Environment (what assets are being used and where)
- The first could be considered "revenue costs", the second "capital costs"

Categories of Metrics

- ACTIVITY
 - Support Man-days according to Application Name
 - Help desk calls
 - Callouts / Incidents (repeat and non-repeat)
- TECHNICAL
 - CPU, Disk Utilisation
 - Backup activity
 - Uptime, planned / unplanned outages
- ORGANISATIONAL
 - Asset Register of servers, purpose, configuration, user access

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Man-Days

- Man-Days are a large percentage of the IT budget.
- Capture man-days, according to the Application that is being supported.
- You can prove which Apps are impacting your headcount, and engage with development teams to fix those applications that have a disproportional impact on support resources.

Disk Storage Use

- Capture, and publish, disk storage use, categorised by primary, secondary, tertiary etc. for each user department or application. Include growth trends, and predictive analysis.
- By consolidating these figures, you can build a business justification for NAS / SAN environments, and show how storage can be more efficiently managed.
- Growth trends enable you to predict storage requirements, and gain approval to bulk-purchase storage in advance.
- You can also ensure that Applications / User departments are aware of their IT costs, and any charge-back to their departmental budgets. This, in turn, gives them an incentive to manage their storage requirements in a more controlled way.

Incidents, Call-Outs

- Capture number of Incidents, Call-outs etc. by Application and/or user department.
 - Categorize these by repeat-incidents, and new ones.
- Along with man-days, this enables you prove where your support effort has gone, and which applications are impacting Production, so that
 - you can justify your costs
 - ensure that "problem" applications are changed.
- Having a clear analysis of repeat-incidents enables you to highlight where problems could have been prevented if appropriate action had been taken.
- This either serves as a feedback to your own team, to improve procedures, or to application teams to improve their software.

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Other Technical Metrics

- Capture other technical metrics, such as CPU utilization, with growth trends, and predictive analysis.
- With a basic Capacity Planning function in IT Production, you are able to
 - engage with the business and application teams,
 - justify investment in technology upgrades,
 - schedule these where they will have least impact on day-to-day operational use.
- This reduces the incident of "panic buying" for CPU, memory upgrades etc.,
 - enables IT to engage with suppliers in a more managed way, to ensure that you gain appropriate discounts etc.

Asset Register

- Asset Register of Systems, their configuration (cpu, memory, storage etc.), and allocation to user department.
- Capital Assets describe the size of an IT Department.
- An asset register enables ITP to show how IT costs (specifically depreciation) should be charged back to the user departments.

SOME EXAMPLES

- ACTIVITY METRICS
- Man-Days
 - Significant Percentage of the "Variable Costs"
 - Captured by the APPLICATION they have worked on ("Demand")
 - NOT the cost-centre or skill they have ("Supply")
 - Capture Man-days by TASK, not by SKILL
 - e.g. an Oracle DBA worked on the HR System.
- No of calls to Help Desk, Incidents, Outages etc.
 - By APPLICATION

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SOME EXAMPLES (2)


- INFRASTRUCTURE METRICS
- Lists of Servers, their spec and purpose.
 - What Business APPLICATION are they used for ?
- TECHNICAL METRICS
- CPU utilization, expressed as "units of power consumed"
 - NOT Percentage (percentage of "what" ?)
- Disk utilisation as Chargeable Amounts

COST OF SUPPORTING APPLICATION =
*f (CPU power, Disk Space Maintained, Callouts, Operations Tasks) * Architecture Loading*

METRICS: SUMMARY

- What **Infrastructure** you are responsible for
 - servers, purpose, config, user base
- Where your support **Activity** is going
 - time spent by Application, Help desk calls, incidents, outages
- What is happening to your systems **Technically**
 - CPU, disk space etc.
- What the **Business** is doing.
 - Simple key indicators.
- Collect these metrics **over time**
 - Incorporate these into a pragmatic capacity planning function.
- **Correlate** the Business and Technical activities
- Understand who the **Audience** is, and validate.

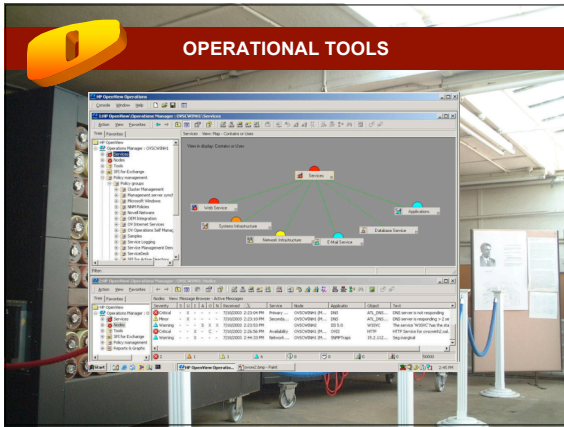
METRICS should have a PURPOSE



"Perhaps it is time for a pragmatic rethink of ... how IT is measured, to provide strategy-driven performance measurement as an enabler for your people to deliver what the board wants, rather than just ensuring that you get a tick in the compliance box"

Iain Parker, The Boxwood Group
Source: Computing 15 September 2005

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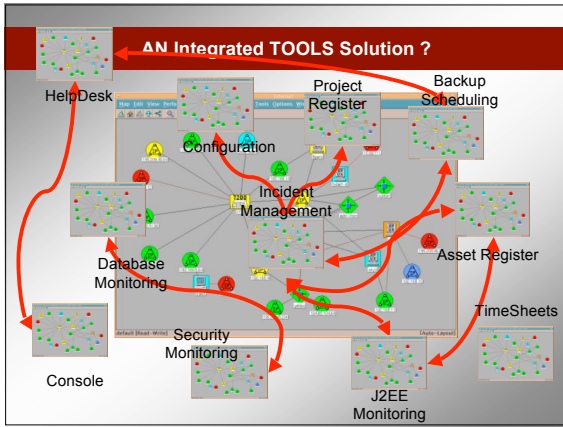
WHAT do we mean by OPERATIONAL TOOLS?

- Technical Solutions to assist the Management of IT Production
- METRIC COLLECTION TOOLS
 - Activity Tracking (Man-Days)
 - Help Desk, Incident Management, Change Control
 - Asset Management.
- TECHNICAL SUPPORT TOOLS
 - HP OpenView, Unicenter, Tivoli, Patrol, Alerting console
 - Specialised Technical Monitoring of Operating Systems, Networks, Databases
 - Specialised monitoring of Application Infrastructure, J2EE
 - Backup / Recovery, Business Continuity
- WORKFLOW

Types of Software Tools

- Technical framework
- Man-Hour capture
- Application monitoring
- Backup and Recovery
- Disaster Recovery and Environment (Network)
- Help Desk and Incidents
- Asset Management
- And
- and
- and
- and....

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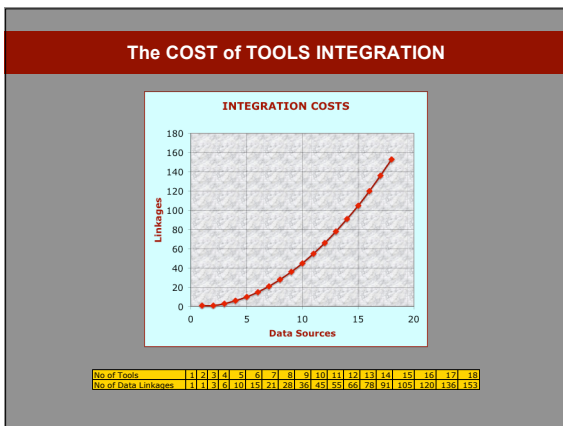


The importance of a TOOLS REFERENTIAL

Each specific category of data should be derived from one Unique Definitive Master Copy.

Tools	Server Configs	Application Names and Owners	PC Owners	Project Names	Licenses		
Help Desk		*	✓		✓		
Configuration Management Database	✓	✓	*		*		
Incident Management	*	*	*	*			
Project Register				✓			
Monitoring Console	*			*			
Time Capture		*		*			
eBusiness Console	*	*					

Establishing a definitive Referential can help to simplify reporting and minimise inconsistency



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CRITERIA for selecting TOOLS

- Don't invest in too many products !
 - Every new Tool implies significant additional investment in integration
 - Ensure that you are getting value for money from existing investment
- Consider the extent to which Stand-Alone products need to be Stand-Alone
- From a Management Perspective, Tools should:
 - Capture Metrics for management
 - Automate the Support Function

Summarize and Simplify

- You have how many tools ??? ? ! ! ? ? ?
- Sometimes it is worth auditing what tools you already have, to identify the functionality they provide. ("Monitoring Landscape")
- This would tell you....
- Where some tools have overlapping functionality and could be decommissioned.
- What tools have "hidden" functionality which could be implemented at minimal cost to address the shortfall.
- Only buy additional tools if you really, really, really need them. And if you do so, make sure you "sweat the assets", and get them to really work for you.

SUMMARY: Operational Tools

- METRIC COLLECTION TOOLS
 - Activity Tracking, Help Desk, Incident Management, Asset Management, Change Control
- TECHNICAL SUPPORT TOOLS
 - HP OpenView, alerting console
 - Specialised monitoring of Networks, Databases, J2EE
 - Backup / Recovery, Business Continuity

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Review of OPERATIONAL TOOLS

- Review what tools you have for collecting Technical and Activity metrics.
- Look at the extent to which tools are integrated
 - Help Desk fed from Asset Management, into Time Tracking etc.
- Tools should have historical analysis
 - e.g. help-desk should include problem resolution, so that subsequent callouts are not duplicated.
- Define a single referential for each data item.

Automate, Integrate and Summarise.

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