



# Reallocating resources across the globe

## Creating a global dynamic grid

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April 28th, 2008



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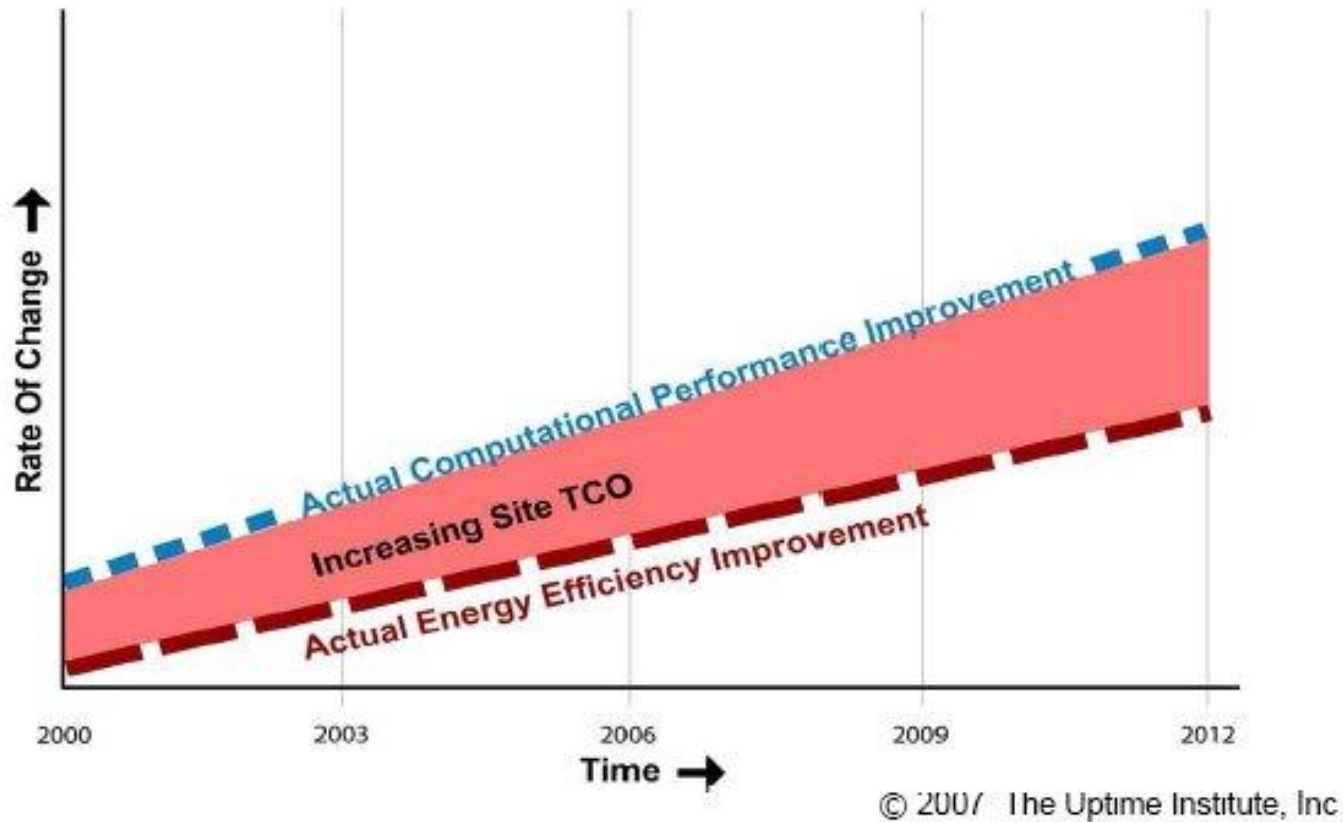
# Global grids – why bother?

- Your grid's in the most expensive place on the planet
- It's going to get worse ... (energy futures, threat of emission taxation)
- You can save \$\$millions offloading jobs to cheaper locations



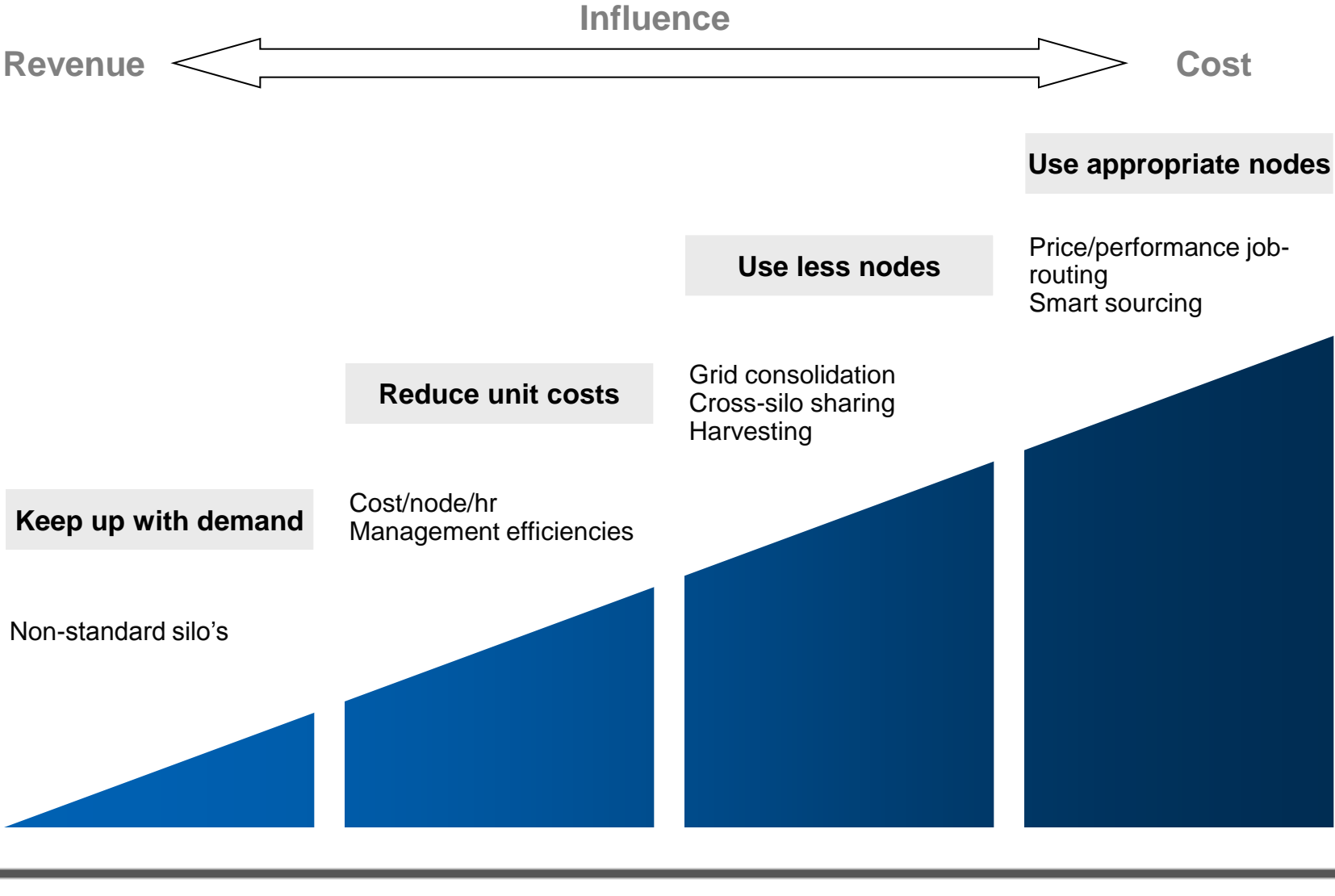
# Energy costs are driving TCO increases

## Lagging Power Efficiency Drives Site TCO Up (reducing IT's economic productivity)

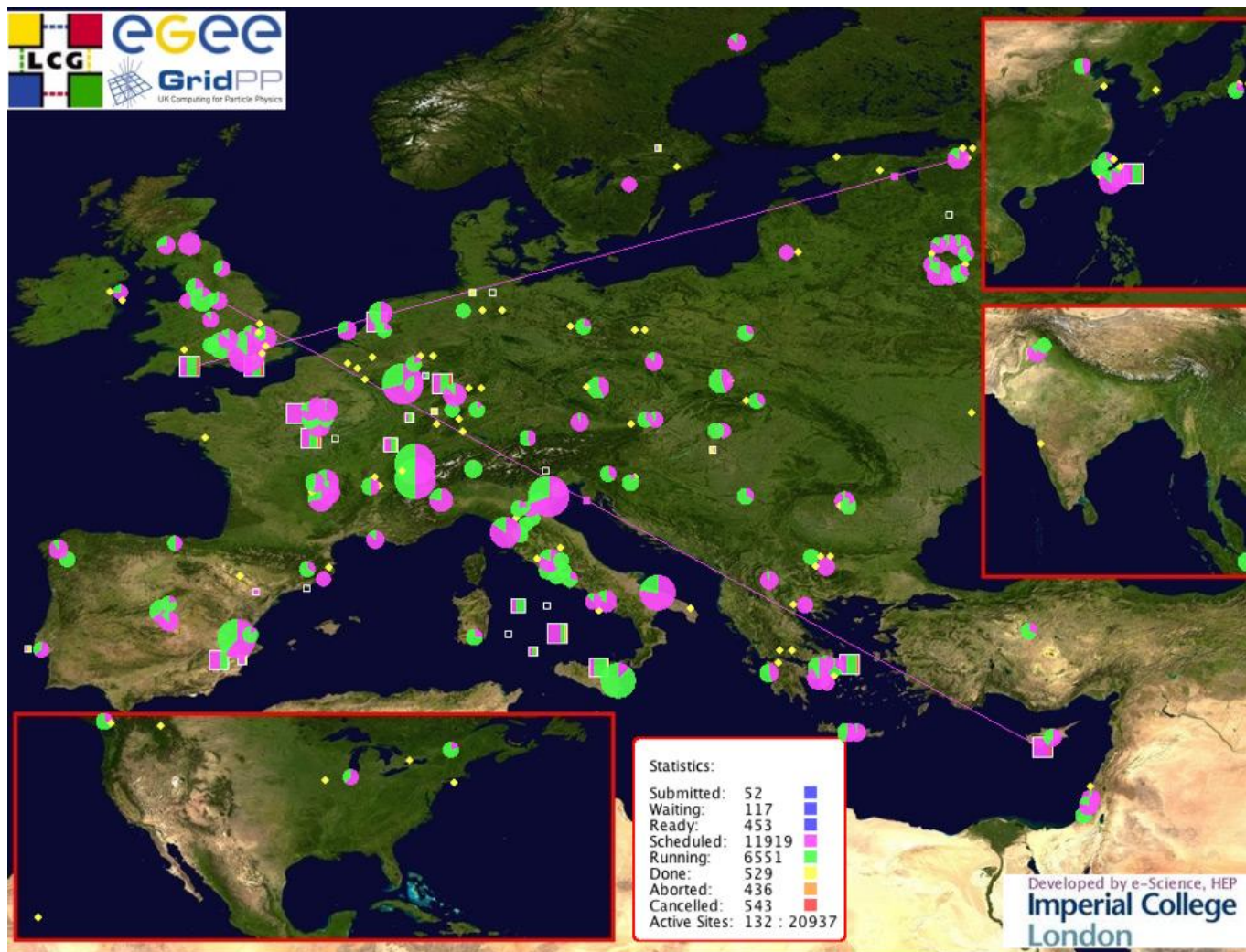


Ken Brill, Uptime Institute

# Increasing grid infrastructure efficiency



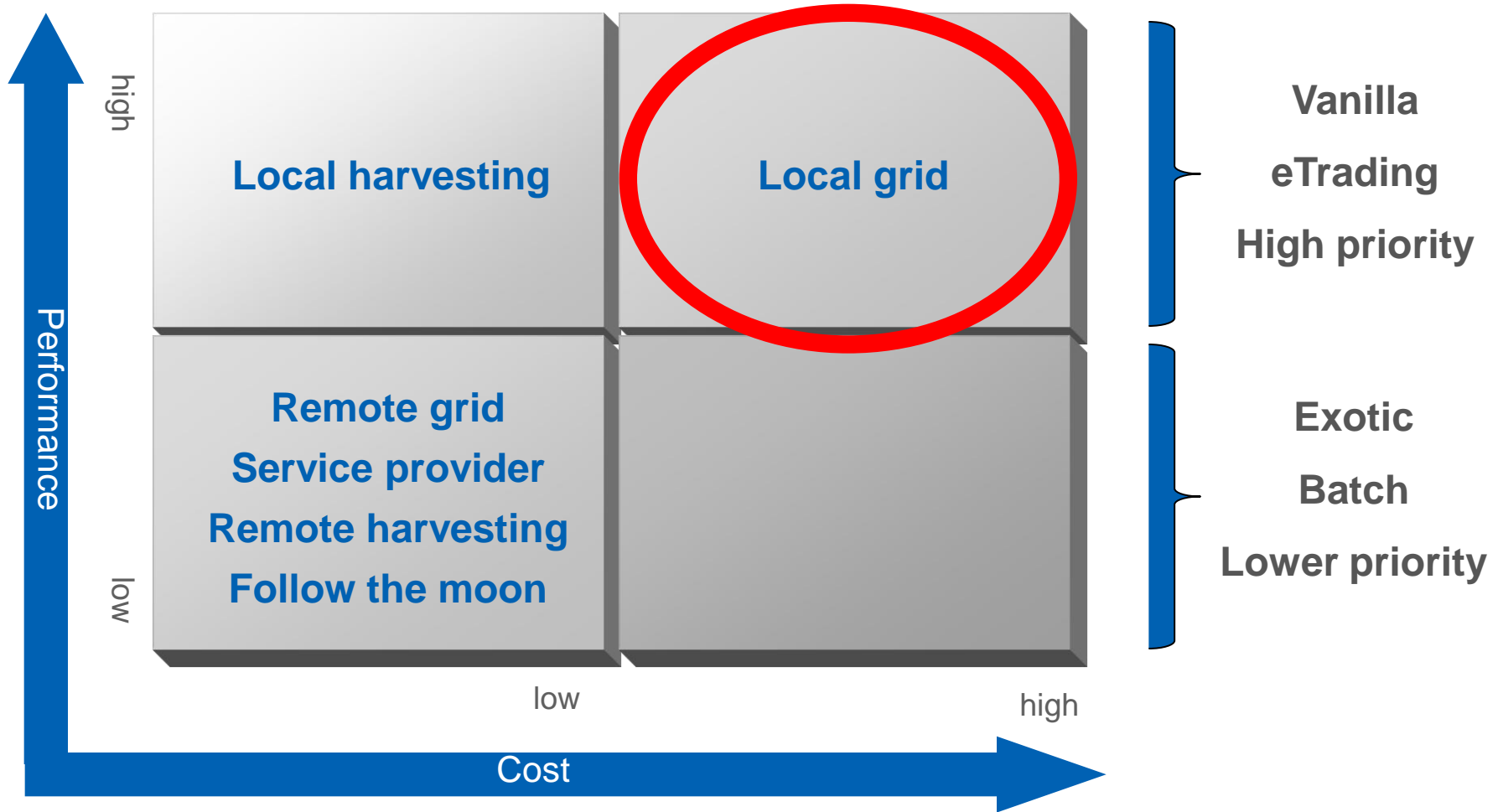
# Global Grid example – LHC Computer Grid



Screenshot of jobs submitted in Europe on 9<sup>th</sup> January 2007, as part of worldwide LHC project, CERN

# Deciding location

Does it really all need to happen here?





# Gold plated Data Centers?

- Grid solves resiliency issue at the Job management level
- Tier 2 data centers can be 1/2 of the cost
- Split workload across multiple sites
- Scale to cope with failure



# Consolidation Inhibitors

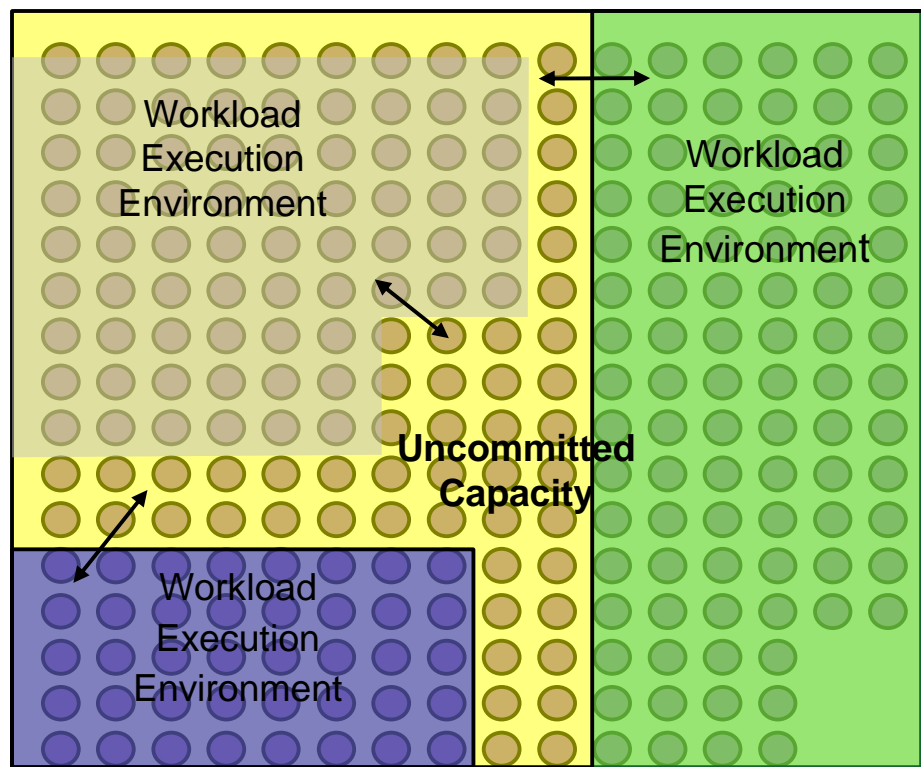
- Different Dynamic Resource Schedulers
- Incompatible server builds or applications
- Possessiveness – “I bought it and you can’t use it”
- Fear of job level interference
- Lack of decent charge back
- Lack of DC space



# Recommendations

- Consolidate the physical infrastructure and create re-sizable execution environments
- Where compatibilities permit consolidate into same Execution environment
- Locate appropriate to need:
  - Real Time Grid
    - Market Data, Algorithmic trading - close to Market data feeds
  - Interactive Grid
    - Trader jobs, Quotes, Excel Grids – within 500 miles
  - Batch Grid
    - Risk calculation, mark to market - Global

# Consolidated Grids



Creates variable sized execution partitions

Each one executes a specific application or environment.

Resources are allocated to partitions based on Service Level Objectives

Partitions are isolated except for predefined endpoints connections

Examples of partitions: Fixed Income Grid, F/X Grid also for SOA application, Web Services

Enables resources to be moved between them, based on business needs

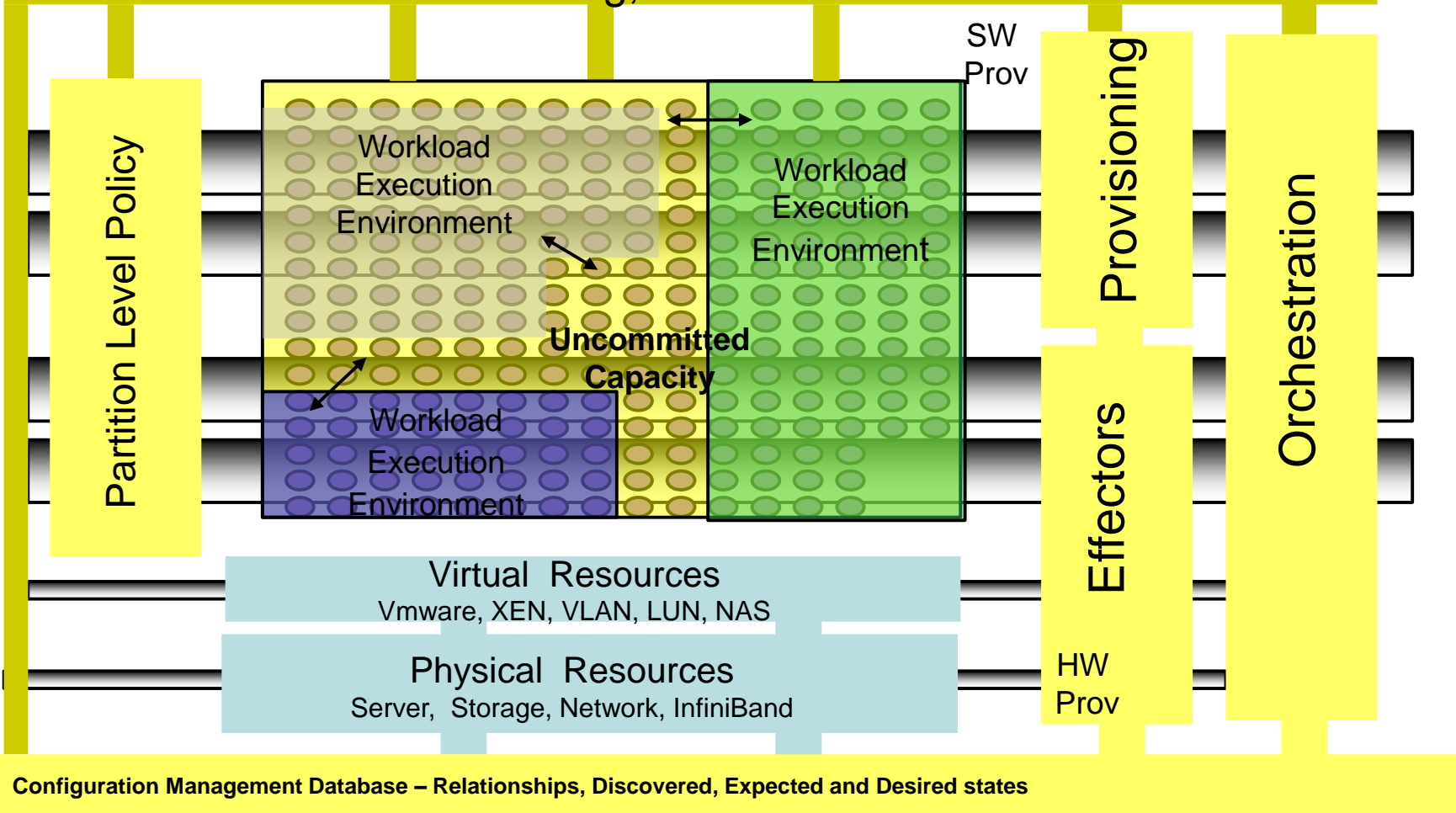
Typical time to provision is 5mins to 1 hour

Headroom of uncommitted capacity kept available to deal with surges

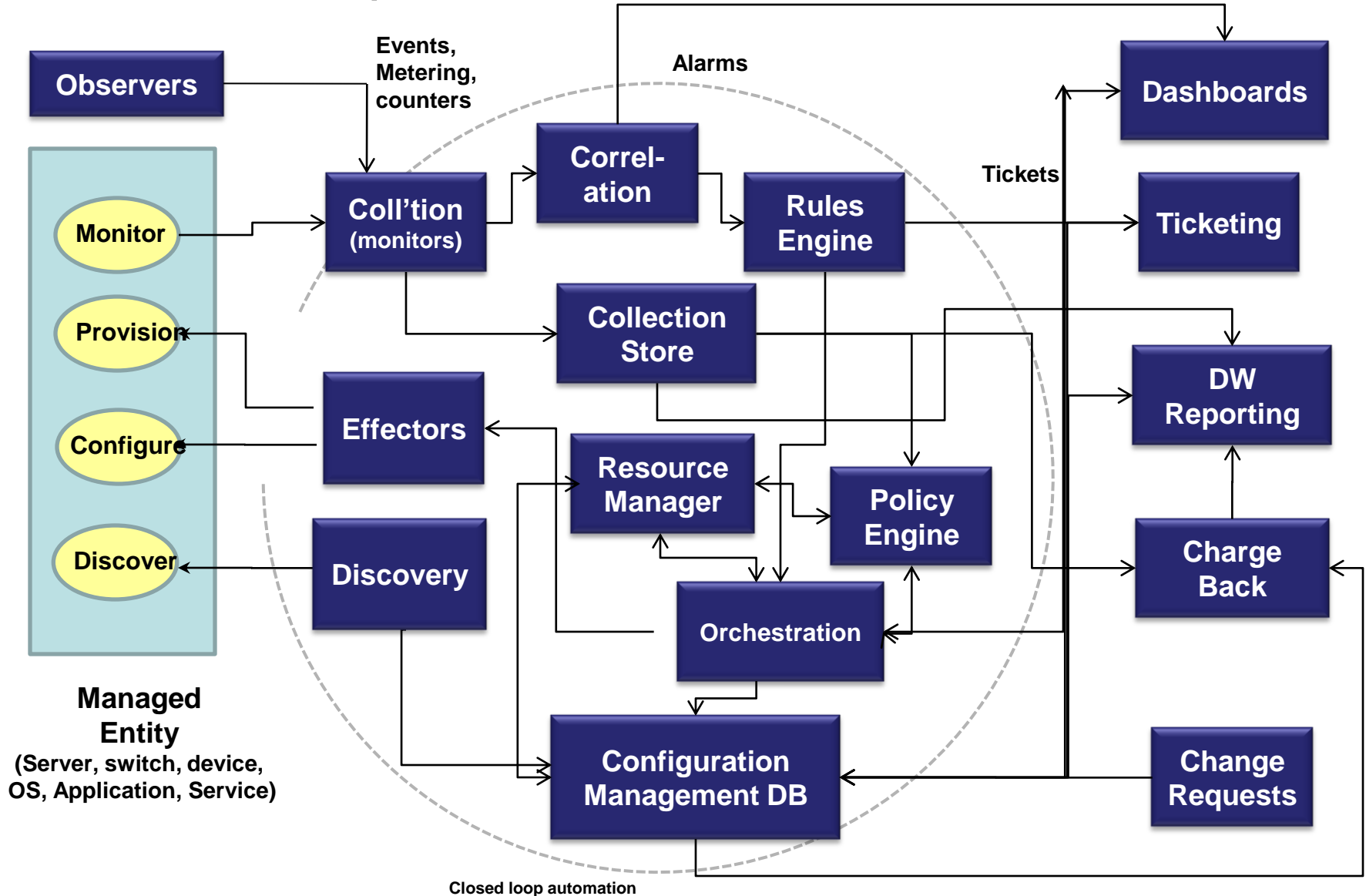
# Automation of Execution Partitions

Reporting, Logging, Trend Analysis

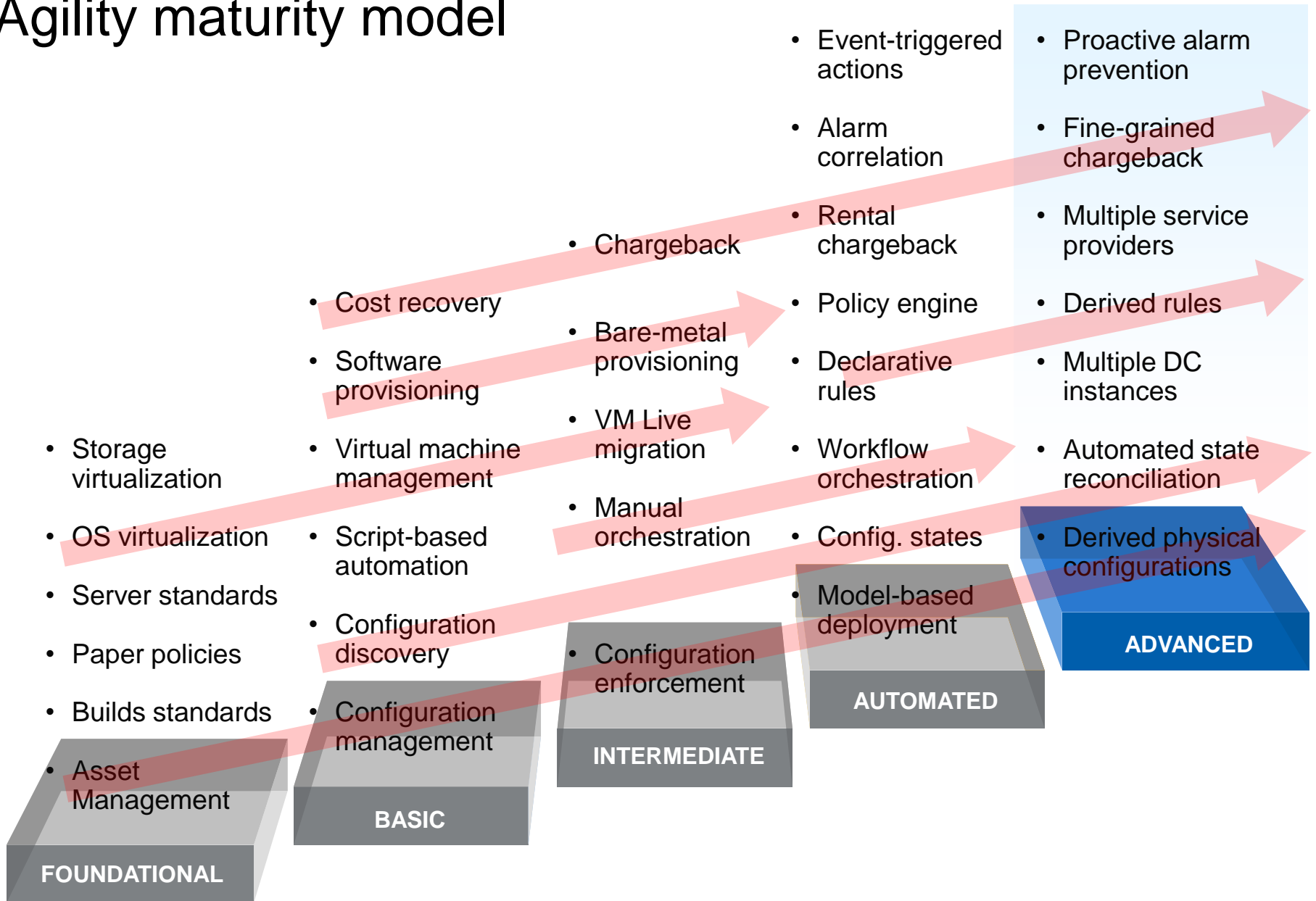
Sensors - Monitoring, Observers



# Automation capabilities



# Agility maturity model



# Summary

- Build an 'offload' / workload distribution strategy to reduce dependency on primary data centers
- Look (again) at cycle harvesting
- Use the Citihub Infrastructure Agility Maturity model to set a strategic roadmap for your infrastructure management
- Consider extended use of service providers


# About Citihub



Citihub is a specialist IT infrastructure consultancy for the financial services industry



Our people are proven industry practitioners with an appetite for complex challenges, particularly around applications infrastructure



We're passionate about our clients' success; the industry's leading companies come back to us time and again because we take ownership and we deliver results

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