

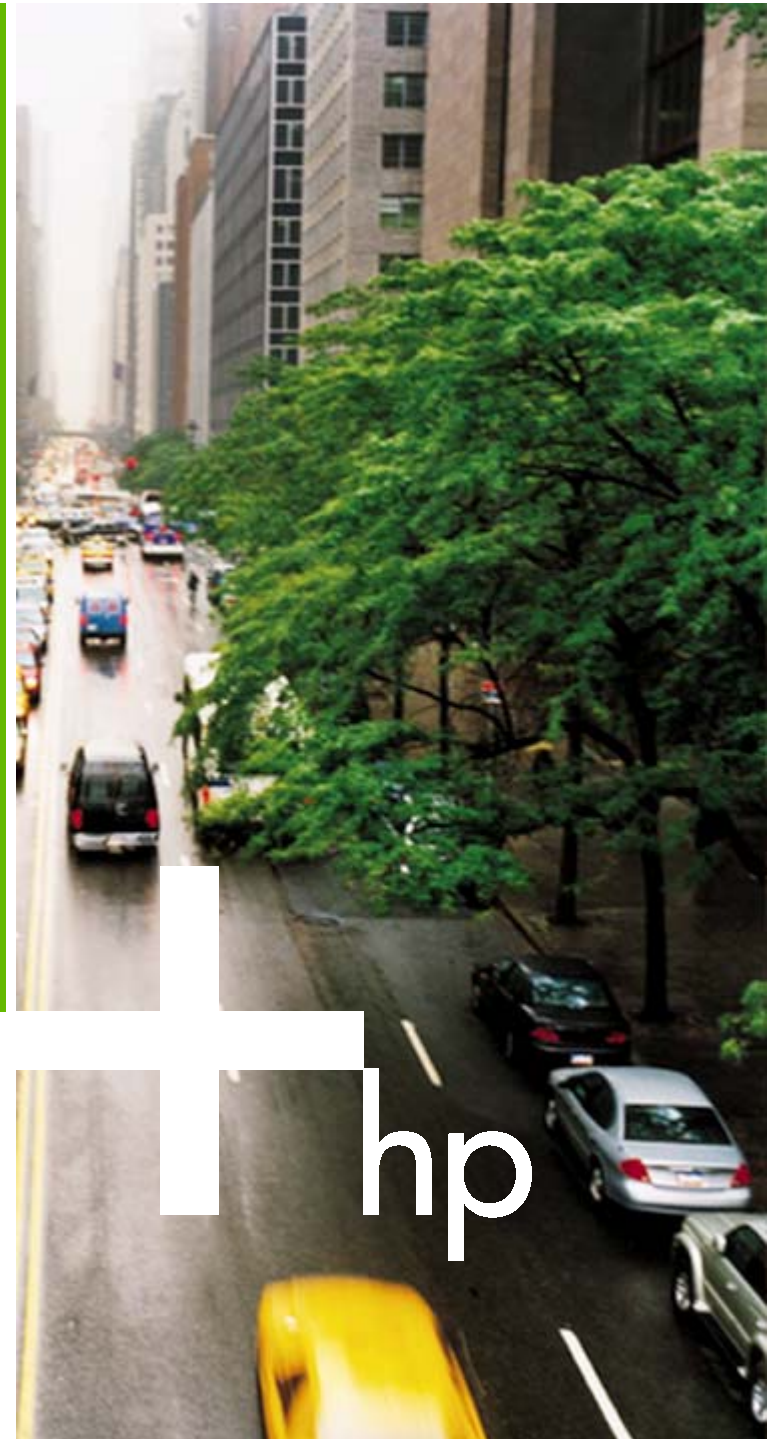


# Model-Driven Automation

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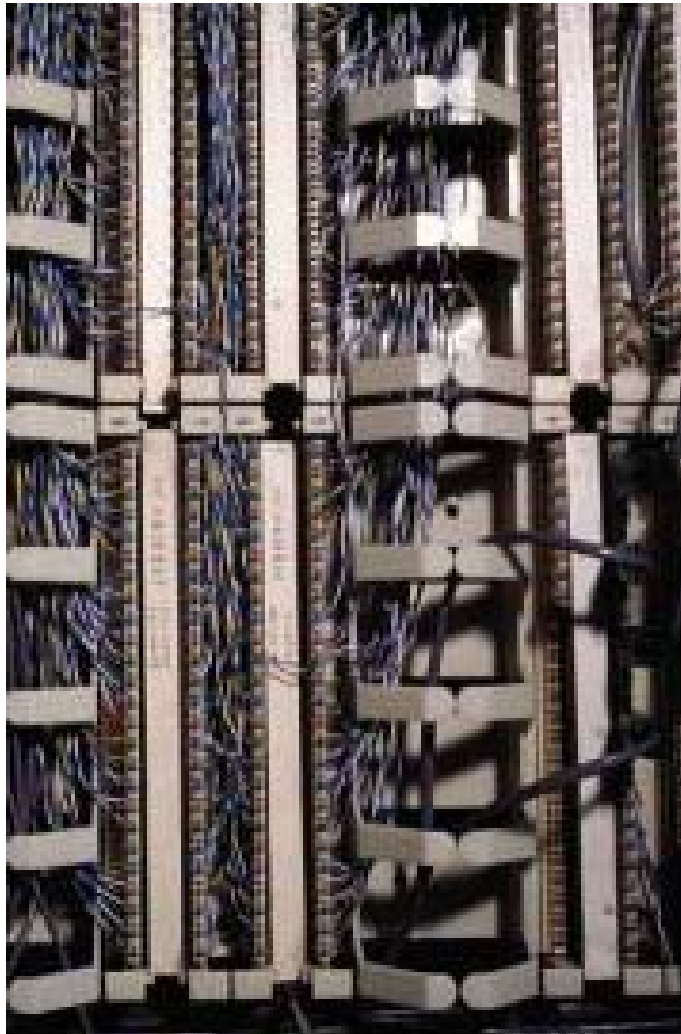


# Evolution of the IT Environment



Pre-merger	Today	Target
7,000+ applications	4,000 applications	1,500 applications
25,000 servers	19,000 servers	10,000 servers
300 Data Centers	85 Data Centers	11 Data Centers
IT cost = 4.6% of revenue	IT cost = 3.5% of revenue	IT cost = <3.0% of revenue
Innovation = 28% of IT spend	Innovation = 34% of IT spend	Innovation = 50% of IT spend

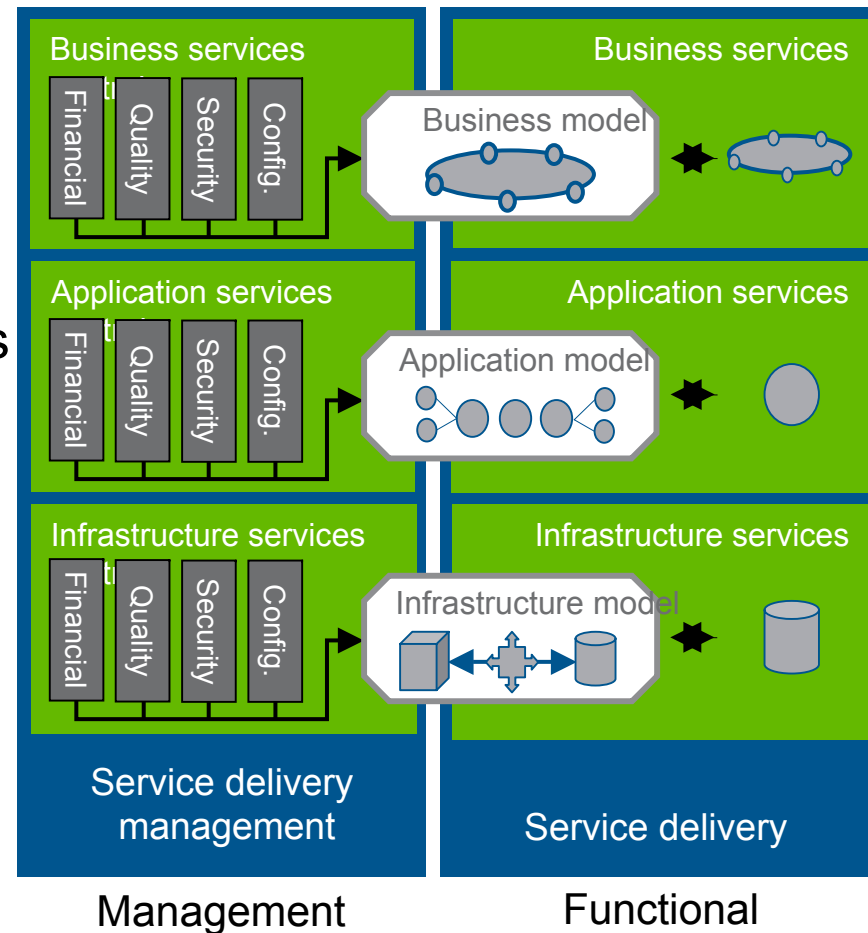
# The key to flipping the ratio: *Automation of IT tasks*



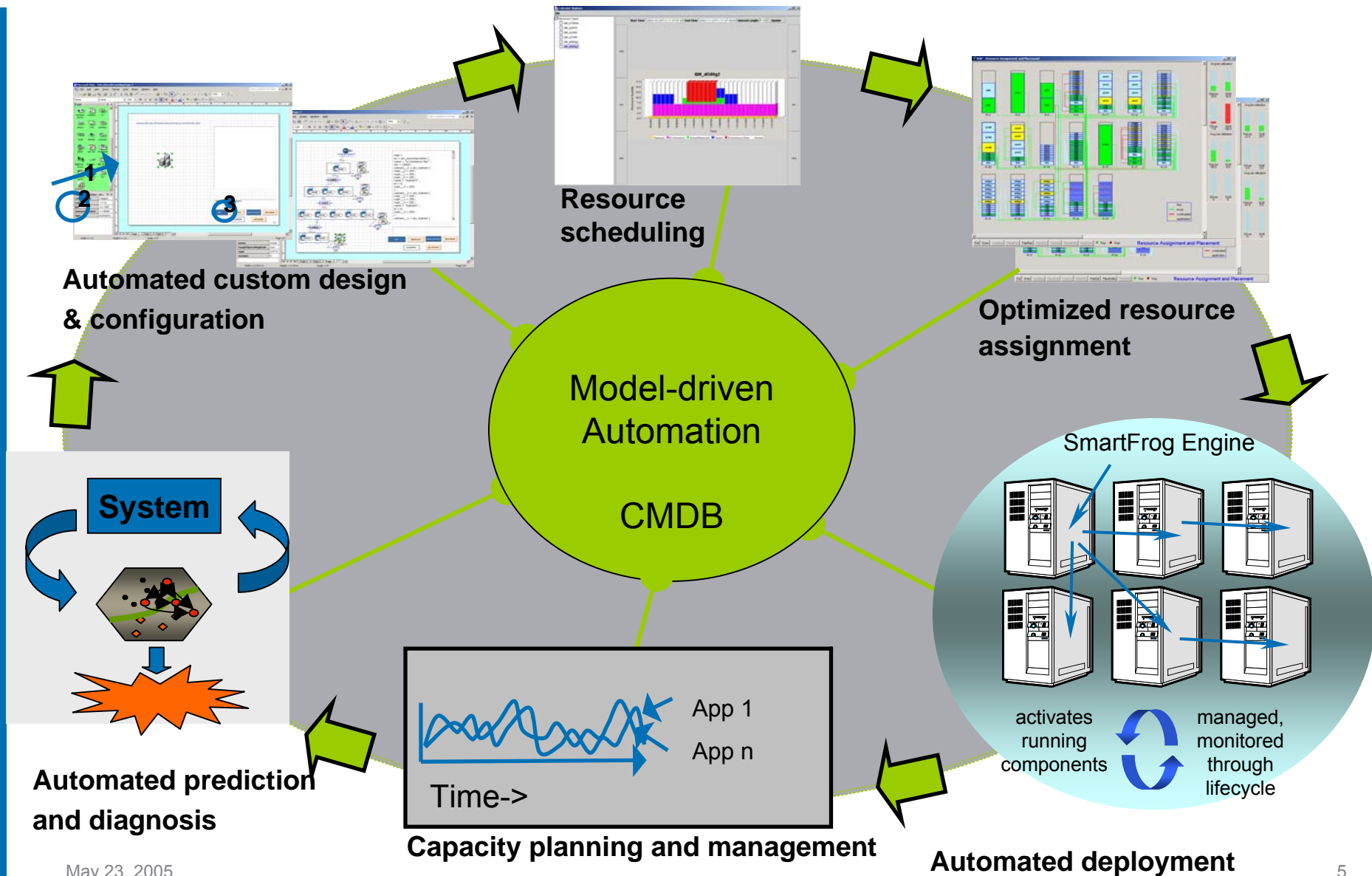
- Most maintenance/operations spending is head count/labor related
- Complex, repetitive, and boring tasks are a bad fit for human cognitive skills
- People inject errors, and error diagnosis and remediation drive huge costs

# Model-driven Automation

- Model is an abstract, formal definition of a service
  - Interpretable by a machine
- It captures the requirements and properties of its SW & HW components, their inter-relationships & configuration
- It can include administrative, user and business policies, and QoS requirements such as SLOs
- Policies & requirements are used to derive a specific “instance” model
- Instance model drives automation through all the layers



# Automated Service Lifecycle Management

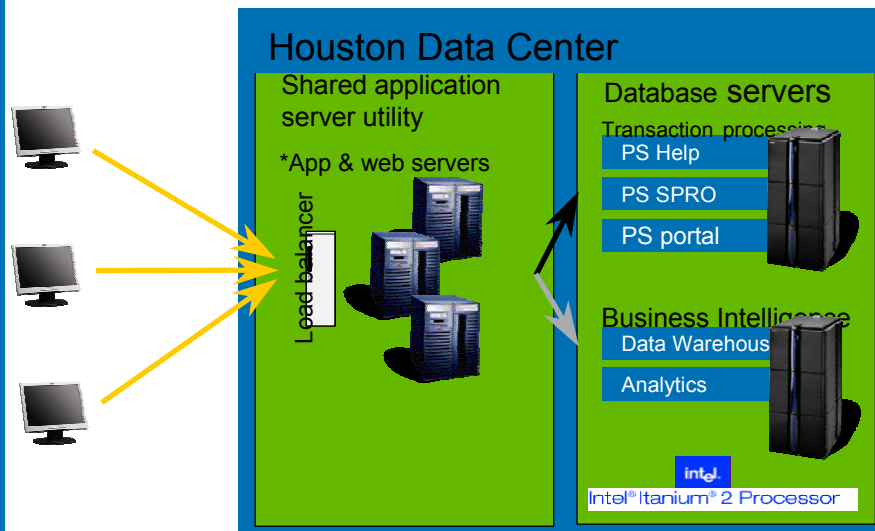


# Shared Application Server Utility (SASU)



- **Challenge**

- High SW License costs
- Low HW utilization
- Redundant support & maintenance
- Long time to market



- **Solution**

- Shared consolidated HW & Virtualization
- Shared App Server Tier
- Automation from the Labs
  - Capacity management
  - Auto configuration & deployment



# HP-IT/Labs Project: Automate the Utility

- PROBLEM:

- How much resources are required for a new application?
- Is there enough capacity in the infrastructure to admit this new application?
- Which particular resources to allocate for this new application?
- How can we re-organize the applications to improve utilization?

- BENEFITS:

- Automation results in 25% reduction in resource requirements
  - Replaced manual process that uses simplistic aggregation of peak-on-peak demands With our techniques: Considering sharing, resource requirements have *decreased up to 25%* on the average for various customers we worked with.
- Automation performs current capacity management in minutes with minimal human intervention
  - Replaced manual process that takes hours and needs to be repeated several times (new app, weekly, problems, etc).



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