

## Panel 1: Autonomicity vs. Complexity Evaluating Autonomicity

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## Benefits of Autonomic Systems

- Aim of Autonomicity: *To Dramatically Reduce Operating Costs of Complicated Systems*
- How?
  - Off-load monitor-analyse-plan-execute cycle to system intelligence
  - Humans deal in high level policies
  - Reduced cognitive load on operators – more productive, fewer errors
- But autonomics introduces complexity hence cost
- How do we perform the cost-benefit evaluation on a given Autonomic System?

# Autonomic Computing Metrics

- QoS in achieving primary goal
- Cost (of introduction and operation over time)
- Granularity/Flexibility
- Failure Avoidance
- Degree of Autonomy
- Adaptivity and Reaction Time
- Sensitivity and Stabilisation

[McCann and Huebscher, Evaluation Issues in Autonomic Computing, GCC 2004, LNCS 3252]

# Challenges in Evaluating Autonomic Communications

- Need holistic Autonomic Comms Benchmarks
  - Total cost of ownership
  - Across all self-\* axes
- Cost-benefit analysis needed for ever-changing:
  - Network Technologies, Service Portfolios, Value Chains
- From complicated to complex
  - How to convince operators on emergent properties?
- Need to understand lifecycle engineering costs for self-organising, adaptive systems