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# Self-Management



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## A Vision, A Hype, A Philosophy?

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## The Changing Network Management-scape

- Larger, more complex, and increasingly heterogeneous infrastructures
- Expansion of management horizon over services and applications
- Increase in application distributedness



## Self-Management: A Vision, ... a Hype?

- Self-management!



- Self-management?
  - Coping with transition
  - Meta-management complex
  - Catching all the flies

## Managed Chaos: An Oxymoron?

- Perhaps management should not be neat and tidy. Order exists in chaos
  - Self-stabilizing structures in nature
  - Divine proportion
- Embracing chaos ...
  - Principles: game theory
  - Patterns: chaos theory
  - Evolution: neural networks, genetic algorithms
  - Emergence: swarm intelligence



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## Management Smarts

- The new wave
  - Are P2P-based services inherently self-managed?
  - Are kids inherently self-managed?
- The management smarts
  - Guidance, influence, and incentives
- Micromanagement is out!



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## Do We Trust Self-Managing Systems?

- *"Where large sums of money are concerned, it is advisable to trust nobody." -- Agatha Christie*
- *"There is one safeguard known generally to the wise, which is an advantage and security to all, but especially to democracies as against despots. What is it? Distrust." -- Demosthenes*
- Validation procedures, in design, testing and operation
- Management metrics
- Safe guards
  - Asimovian autonomy

