Making Management Matters Matter: the Academic View

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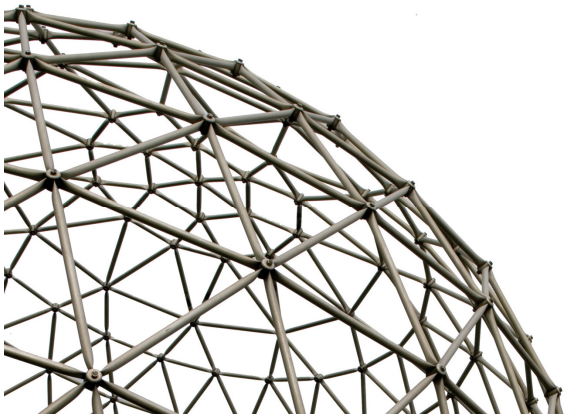
IM09 Distinguished Experts Panel



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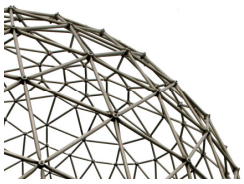
How Can Management Matter

- Making management matters matter means achieving higher impact:
  - Having higher market penetration
  - Resulting in higher revenue/income
- But can network/service management achieve this?
- We discuss relevant issues for all the relevant stakeholders from a network management perspective
  - Network as opposed to IT management



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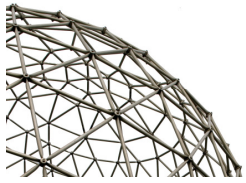
Management for Network/Service Providers

- Network/service management essential but only "an insurance" against problems
  - Guarantees optimal network/services operation
  - Can generate revenue implicitly by cost cutting
  - Avoiding penalties for SLAs etc.
- It cannot generate revenue/income explicitly
- But there is **A LOT** of scope for cost cutting given that around 80% of OpEx is on management



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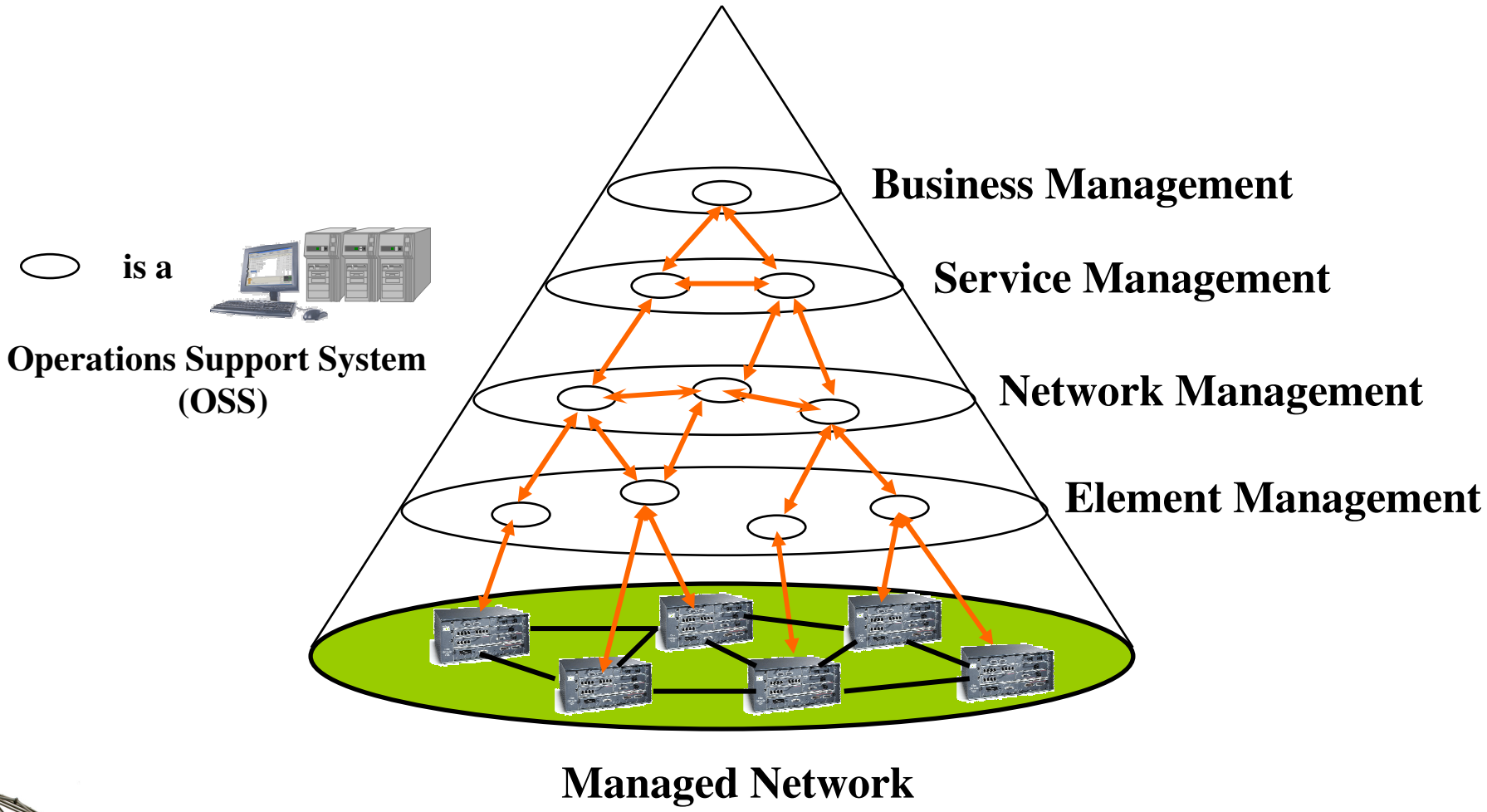
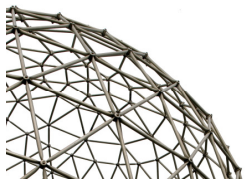
Management for Network/Service Providers (cont'd)



Selling Management as a Service

- Taking a service-oriented view, management can be sold as a service, generating explicit income. Some examples:
  - Managing remotely home PCs
  - Managing remotely home networks
  - Managing mobile devices and their content in cellular networks
  - …
- This area is likely to grow a lot in the future, providing potentially an important source of income



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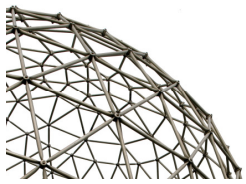
Selling Network/Service Management Products

- Selling management solutions can generate explicit income. Example products:
  - IBM's Tivoli
  - HP's Openview
  - Cisco's Netview
  - …
- This market area is small and likely to remain stable in the future
- Nevertheless it is an important source of income for relevant companies



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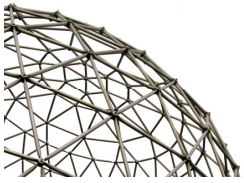
Management for Equipment Vendors

- They simply have to have management interfaces in their products:
  - SNMP
  - CLI
  - …
- In this case management is simply a cost factor
- Heavyweight management technologies can increase significantly equipment cost



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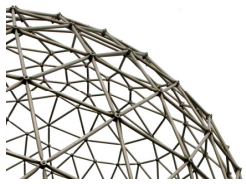
Current State for ISPs/INPs

- Solutions are limited by management technology
  - Offline configuration for a provisioning period
  - Not much automated adaptive network management
  - Not much closed loop control management
- Standardization failure has been partly responsible for this (many diverse technologies)
- Another reason is that closed loop control is more difficult with the management intelligence being placed “outside” the network
  - Timescales of operation



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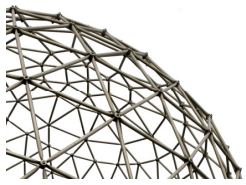
Future Autonomic Management

- Management solutions will be tightly coupled with the networking technologies they manage
  - Embedded management in a similar fashion to control functionality
  - More stringent timescales, arguably easier to implement closed-loop feedback control
- Generic functionality built-in together with specific functionality for managing a particular technology
- Management designed together with the control/data functionality in the first place and not an afterthought



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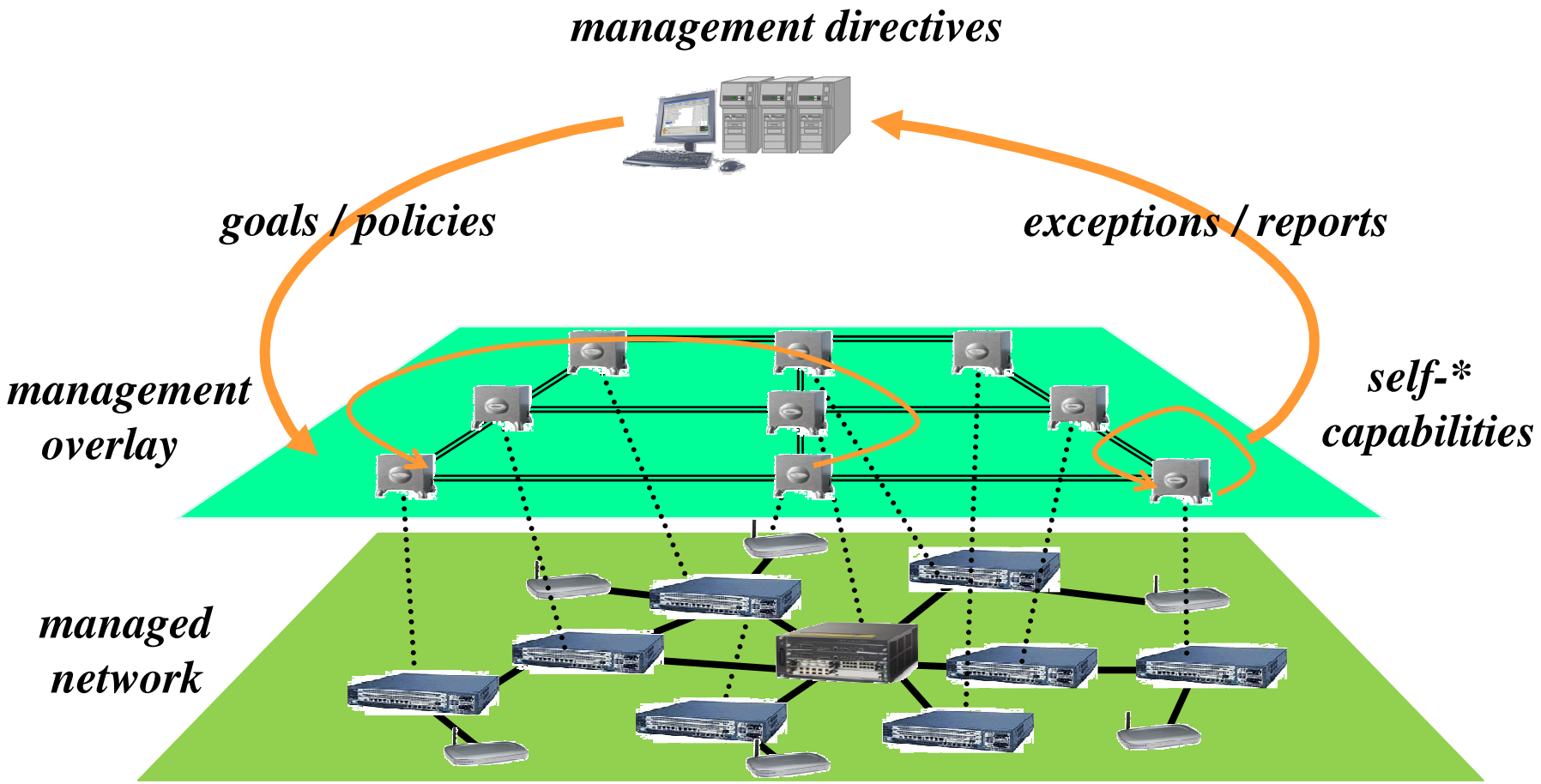
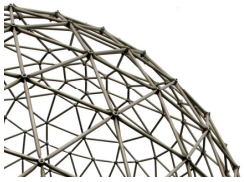
Future Autonomic Management (cont'd)





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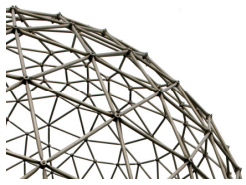
The Future of Management

- Network/service management was/is extremely important for telecom operators selling services with 99.999% availability
- The Internet changed this model and consequently the significance of management seems to have been reduced somehow
- But with migration of everything over IP we will need again 99.999% availability and QoS
- Management will be very important in the future but mostly embedded with the relevant network technologies
  - *Need to adapt/change our way of thinking otherwise the game will be lost to other communities!*



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