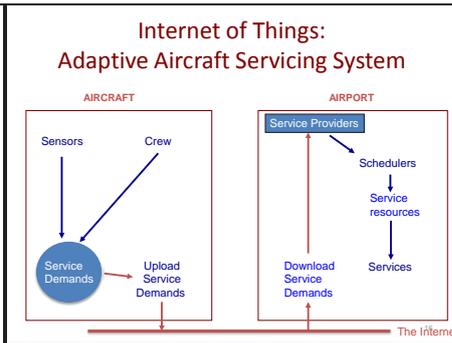


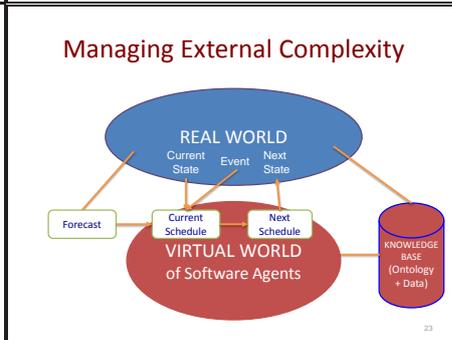
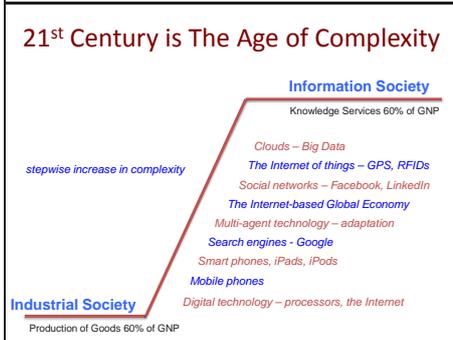
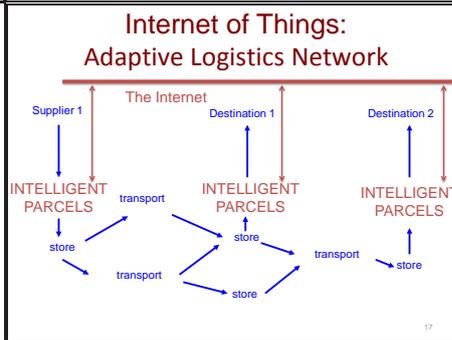
Managing Complexity

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Co-Evolution of Society and Technology

STAGES	KEY RESOURCES	DISTRIBUTION	SCOPE	SUCCESS FACTORS
Industrial society Mass production technology	Capital	Motorways Railways	Regional & National	Economy of scale
Information society Digital technology	Knowledge	Digital networks	Global	Adaptability



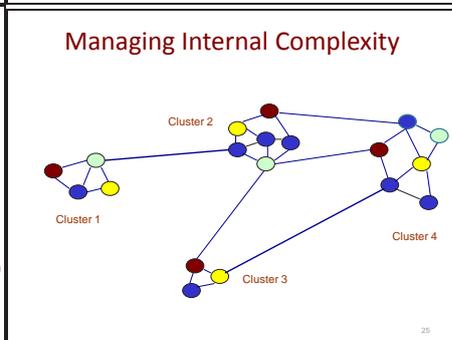
Complex Systems

RANDOM	COMPLEX	DETERMINISTIC
Uncertainty = 1	1 > Uncertainty > 0	Uncertainty = 0
Full autonomy	Partial autonomy	No autonomy
Disorganised	Self-organising	Organised
Unpredictable behaviour	Emergent behaviour	Predictable behaviour

- ### Managing Internal Complexity
- Reduction of Complexity* | *Increase in Complexity*
- Improves predictability of behaviour
 - Improves stability
 - Reduces risk from disruptive and extreme events
 - Decreases speed of recovery
- Improves self-organisation
 - More adaptability
 - More resilience
 - More creativity
 - More intelligence
 - Improves co-evolution
 - Increases risk of disruptive and extreme events
 - Increases speed of recovery



- ### Definition of Complexity
- Complexity is the property of an open system*
- Which consists of a large number of diverse richly connected partially autonomous Agents
 - Has no central control
 - Its behaviour emerges from the interaction of agents and is therefore unpredictable but not random
 - Operates far from equilibrium
 - Has nonlinear connections between agents, which occasionally create Extreme Events (butterfly effect)
 - Capable of self-organising and coevolving with its environment



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