Autonomous & Decentralized Architecture

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Benjamin Barber (CUNY) argues that cities and city mayors are solving many of our global challenges.

http://tinyurl.com/jpcyg2a
A Model

Observation

Sense

Smart

Thing

Constraint

Utility

Act

Provide

Consume

Resource/Service
... Many, Inter-dependent, ...
Applicable Along a Wide Spectrum

Matrix

Ants
What to Optimize For?

- Efficiency?
- Utility? (happiness)
- Consumption? (energy)

Robustness

- Antifragility (Nassim Taleb) is a property of systems that increase in capability, resilience, or robustness as a result of shocks, volatility, noise, mistakes, faults, attacks, or failures.
Constraints

- Bandwidth?
  - Latency
- Processing?
- Storage?
- Energy
  - Wireless Power
- Law
- Business Models
Information is the New Oil

• Smart Things **need Information** to make Decisions

• Their **Actions** may **produce Information** useful to others
The more I know about you, the better service I can provide for you

Really?

Confidential Computing
How to gain insight without access to individual data
Data/Internet – Information/???

Internet

Data

Information
Summary

• Cities are the ultimate A/B test!
  • ... with limited roll-back capabilities

• Cities need robust & adaptable solutions
  • ... because we have NO idea how it will be used

• Heterogeneity has served this planet well
  • ... at least so far

• Information (exchange) is at the heart of it
  • ... which creates plenty of new challenges