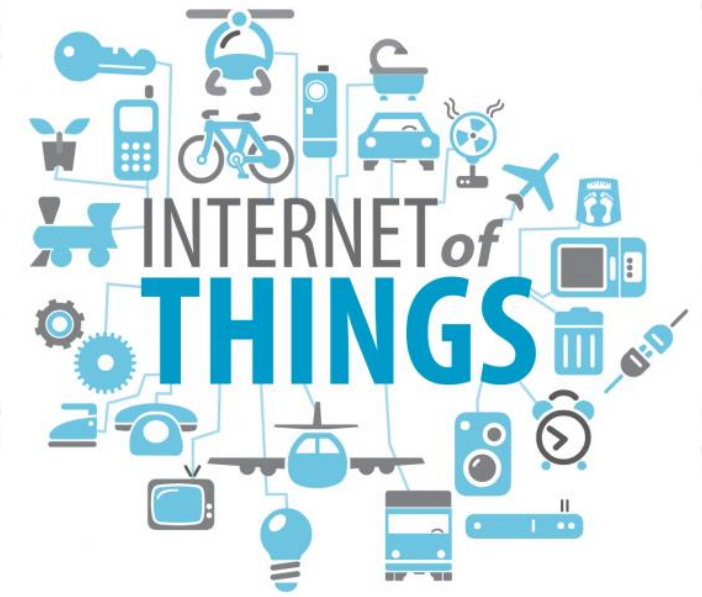


Smart Campus Initiative: IoT Systems Risk Management Task Force



Great potential in IoT Systems in Higher Ed institutions --
Energy management, sustainability, building access
control, research automation & environmental control,
building automation, safety systems, academic learning
systems ...

IoT Systems

Implementation & Management

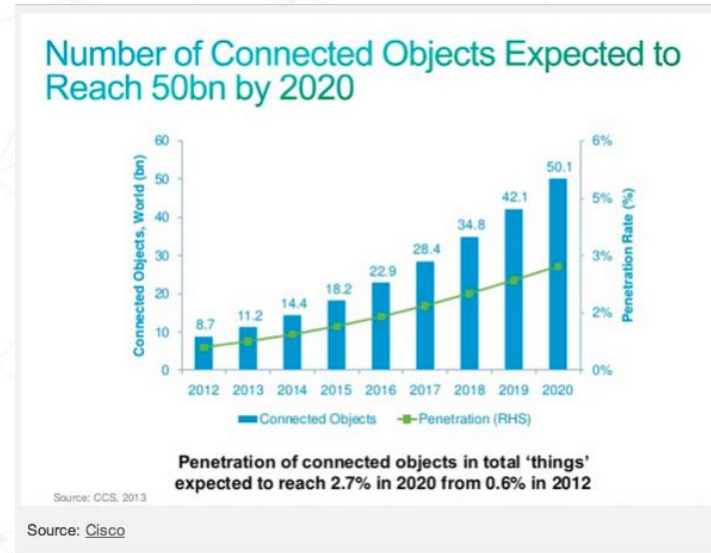
The Real World – e.g. Campus, City, ...

But potential not realized if IoT System is not implemented & managed well.
Topics include:

- Vendor management – articulating & raising expectations
- Vendor management – multiple proprietary systems
- System ownership
- IoT System selection, procurement, installation
- Costing models & approaches
- System risk identification & management
- Network segmentation & portfolio management
- Organizational/Culture change
- Others

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- IoT Systems are different from traditional enterprise systems
 - Large numbers of networked, computing devices
 - High variability within device types
 - Little language/conceptual framework for system planning & managing risk
 - Out of sight, out of mind – Systems embedded in the environment around us
 - IoT Systems tend to span multiple organizations within an institution



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Some participating schools:

- Clemson
- Cornell
- Indiana University
- MIT
- Princeton
- Rice
- Virginia Tech
- University of Pittsburgh
- University of Washington
- University of Wisconsin-Madison
- Yale
- HEA-Net (Ireland)

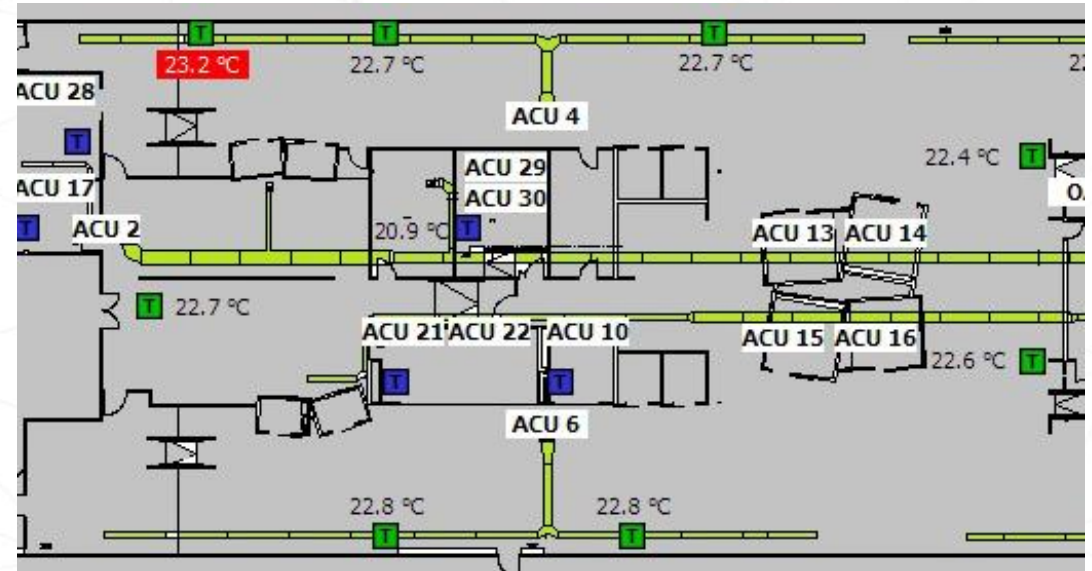
Some roles/titles of participants:

- AVC Operations & Maintenance
- AVP & Chief Facilities Officer
- Associate CIO
- Chief Technology Officer
- Deputy CIO/Chief of Staff
- Enterprise Architect
- Infrastructure Director
- IT Service Owner for Research
- Network Development Manager
- Research Cyber Infrastructure Liaison
- Security Manager
- Senior Applications Systems Engineer

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- The search engine for **Power Plants**
- The search engine for **Buildings**
- The search engine for **Refrigerators**
- The search engine for **Webcams**



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Proposed topics for Quarterly Report Outs to Smart Campus CIO Advisory Council:

Quarter 1 – Sept 2016 - Ability to profile IoT Systems exposure w/public tool (e.g. Shodan.io or Censys.io)

Quarter 2 – Dec 2016 - Vendor management – Standards doc for IoT Systems vendors (process, checklist, etc.)

Quarter 3 – March 2016 – Cost model for IoT Systems selection, procurement, & management

Quarter 4 – May 2016 – Recommendations for further work in 3 – 5 areas

- network segmentation management ?
- organizational/culture change ?
- development of IoT Systems risk language/taxonomies ?
- dependence on non-interoperable proprietary IoT Systems ?
- other ?

- Work on these 2 has started.
- Plan report to CIO Advisory Sept 2016
- (this comment added June 2016)