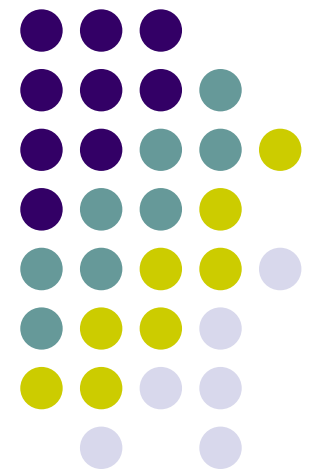


Taking the “Long View” of the Fourth Amendment: Stored Records and the Sanctity of the Home

Deirdre K. Mulligan and Jack I. Lerner
Samuelson Law, Technology & Public Policy Clinic
www.samuelsonclinic.org
University of California—Berkeley
School of Law (Boalt Hall)

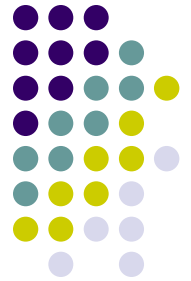


Agenda

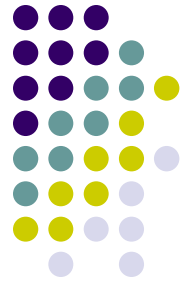


- What is Demand Response?
- Fourth Amendment Jurisprudence
 - Business Records
 - Technology Aimed at the Home
- Mapping Fourth Amendment Law to Demand Response
- Recommendations

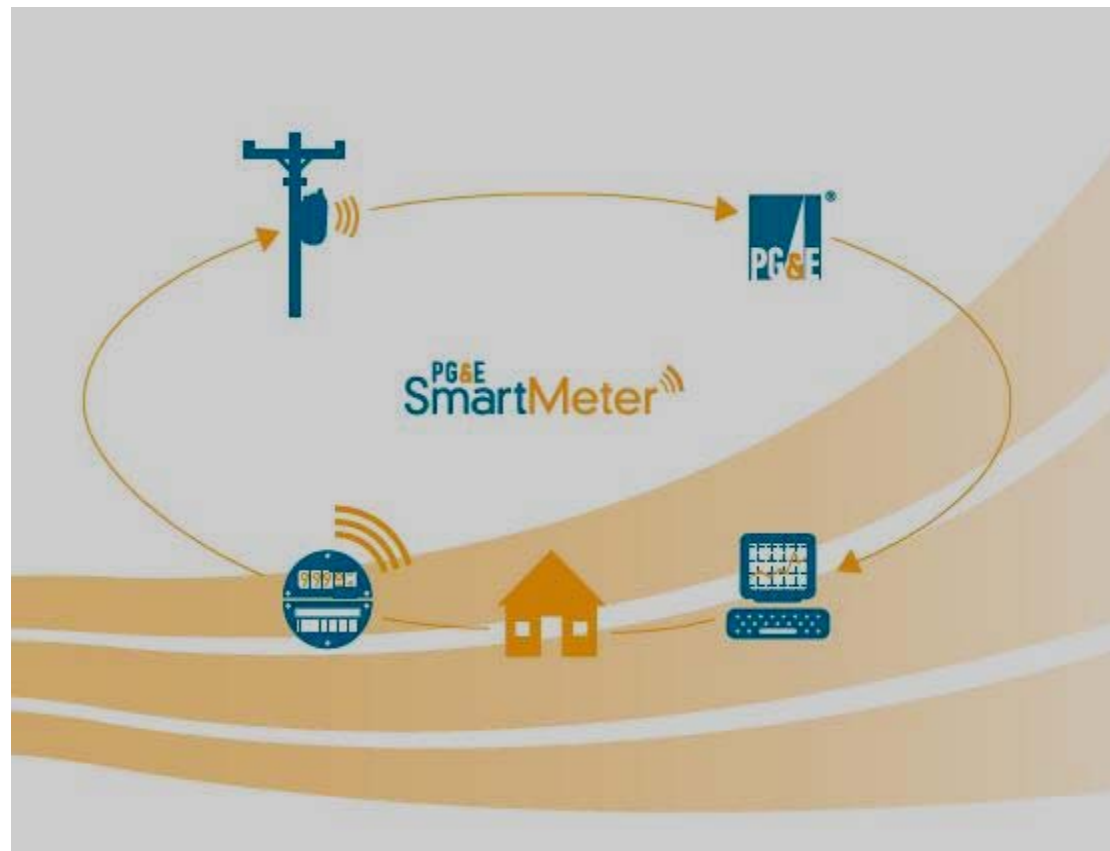
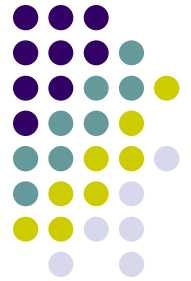
What is Demand Response?



What is Demand Response?



What is Demand Response?



Source: <http://www.pge.com/smartmeter/>



What is Demand Response?



Source: http://dr.berkeley.edu/images/DR_posters_060806/HouseHardwarePoster2006.pdf

Uses of Demand-Response Data



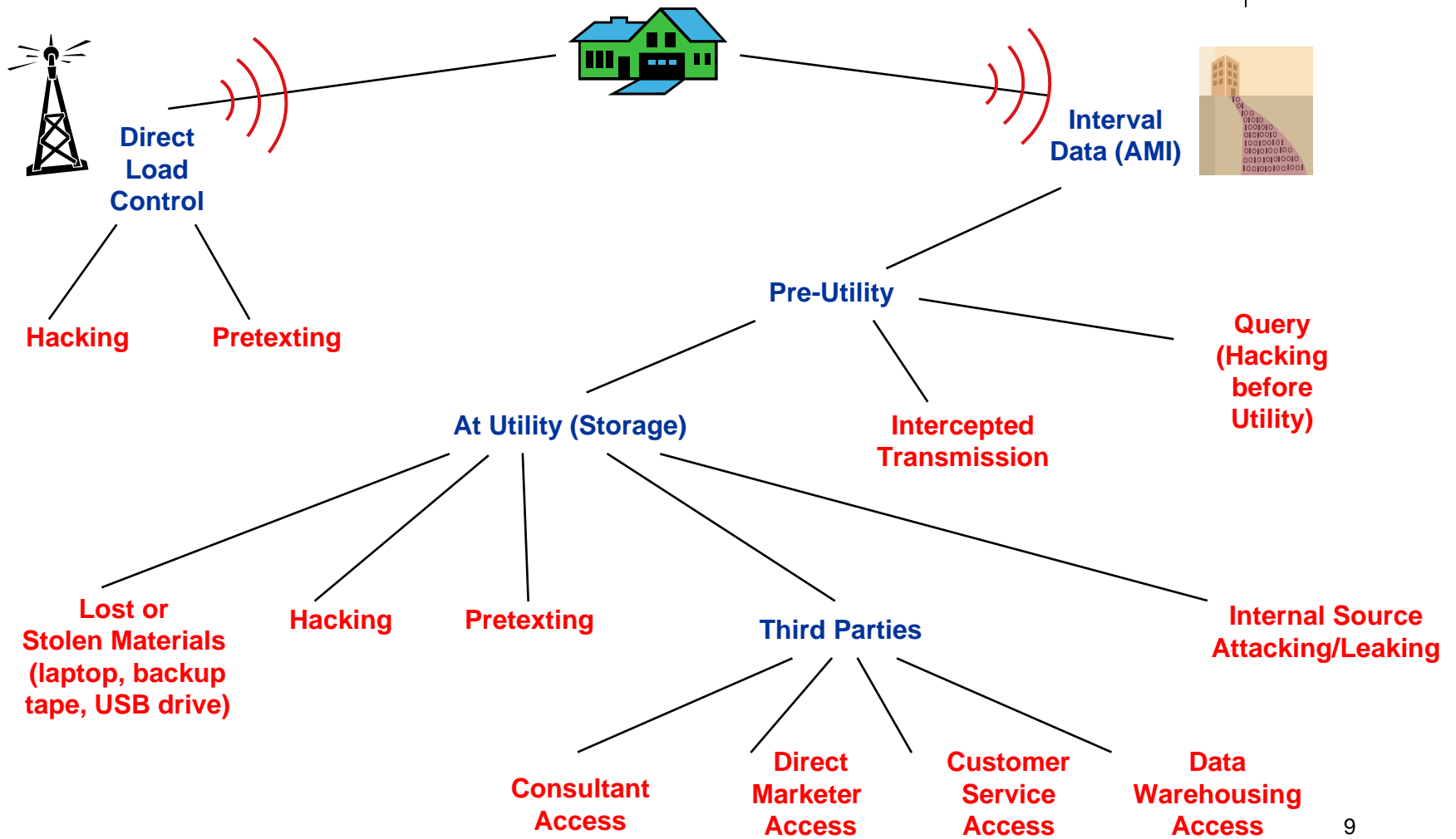
- Load Control
 - Prevent Blackouts
 - Efficiency; Fewer Plants
- Outage Assessment & Repair
- Marketing
- Customer Education



Uses of Demand-Response Data

- Law Enforcement Use: Current
 - Confirm or establish residency
 - Investigate or build a case
 - Evidence (e.g. of knowledge)
 - Usually obtained with Grand Jury Subpoena
- Potential Law Enforcement Use of DR Data
 - Evidence (e.g. timing of crime, occupation, growing cycles)
 - Usage patterns
 - Real-time monitoring of in-home activity
 - Profiling of suspicious activities
 - Carnivore-like dragnet

Network Threats





Related Research of Interest

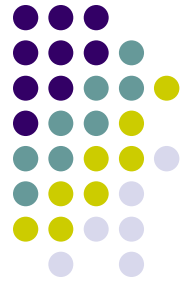
- **Security**
- **Sensor networks within home**
- **Utility Practice**
- **Commercial Use**

Business Records: Federal Case Law



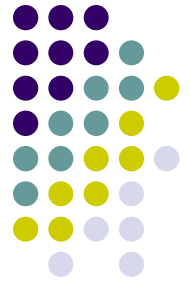
- *Miller, Smith, Starkweather*
- Law enforcement arguments (e.g. *Warshak*)
- Limiting principles:
 - Business intended recipient of info
 - Business has independent interest in info
 - Consider other First Amendment interests data may expose
 - Consider whether relationship is voluntary

Business Records: State Law



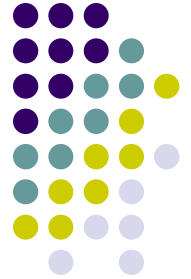
- **Some states have rejected federal business records jurisprudence**
- **Virtual current biography (*Burrows*, *Miller* dissent)**
- **Traditionally, minimal privacy interest in utility data (e.g. *People v. Stanley*)**
- **Courts note prospect of future change in nature of information**

Business Records: Statutory Protections



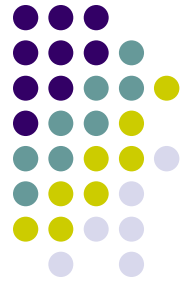
- **ECPA**
- **Video Privacy Protection Act**
- **Cable Communications Policy Act**
- **Right to Financial Privacy Act**

Technology Aimed at Home: *Kyllo v. United States*



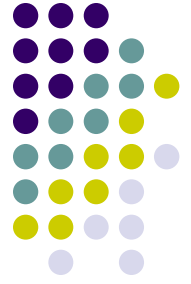
QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Technology Aimed at Home: *Kyllo v. United States*



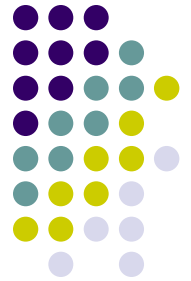
- **Thermal Imaging Device**
- **Common use? Points to expectation**
- **Otherwise accessible without entering?**
- **Factors:**
 - **Technology not readily available to public**
 - **Reveal activity within the home**

Technology Aimed at Home



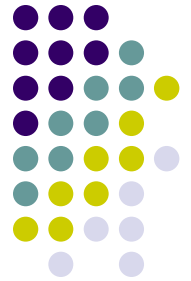
- Focus on Special Places
- Observation of activities inside the home
- Cf. “Actual presence” (*Kyllo* dissent)
- Greater problem – boundaries of home in networked, interconnected world

Mapping Demand Response Onto 4th Amdt Jurisprudence



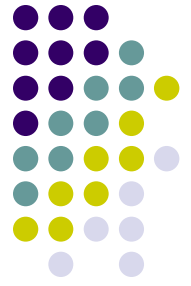
- How is activity sensed or recorded?
 - Generates records held by others?
 - Imperceptible without trespass?
 - Can it be sensed from outside - in “Plain View”?
 - Is only rendered perceptible by technology?
 - Is the technology available to the public or in “common use”?
- Where is the activity taking place?
 - Home versus public street?
- What is sensed?
 - Just illegal activity, contraband? (Cf. *Caballes*)
 - Mix of legal and illegal activities?

Protecting Privacy in DR Data: Architectural Choices



- Identify precise data requirements for utility sub-systems (e.g., billing)
 - Create separate pathways for systems that require identifiable data
- Minimize amount of raw usage data that enters external networks
- Use in-home processing capability
- Minimize granularity of information transmitted, at every step
- Policy choices are “hardened” when incorporated in architectural design

Protecting Privacy in DR Data: Legislative/Regulatory Fixes



- Revisit business record doctrine
- Require warrant before law enforcement can obtain fine-grained DR data
- Require utilities to demand a warrant before releasing fine-grained DR data (Cf. CPUC)

Taking the “Long View” of the Fourth Amendment: Stored Records and the Sanctity of the Home

Deirdre K. Mulligan and Jack I. Lerner
Samuelson Law, Technology & Public Policy Clinic
www.samuelsonclinic.org
University of California—Berkeley
School of Law (Boalt Hall)

