Technology Standardization and Privacy

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Technology Ecosystems

- Internet Systems are in fact ecosystems consisting of many players with different roles, motivations and objectives, and numerous loosely coupled technology components developed independently
 - Web Example:
 - Browser for user mediation, many browser vendors,
 - Many web site(s) with services, possible mash-ups,
 - Local device end-user with information/services (contacts, camera, sensors etc)
 - Intermediaries (ISPs etc)
 - Device manufacturers, software providers.
 - Application stores

Independent Standardization Efforts

- Technologies often standardized independently
 - Within same standards organization
 - Example: W3C Working Groups for HTML5, DAP, WebApps, Geolocation
 - Across different standards organizations
 - Different governance
 - Examples: W3C, IETF for HTTP, OASIS for XACML, web services security etc
 - Differing schedules
- No single point of architectural control or consistency
 - "Darwinian" evolution of standards through adoption.
 - Exception may be vertical industry standards

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Privacy by Design Challenges and Adoption

- Challenging to achieve "privacy by design" in fragmented environment
 - Privacy as default, embedded in design, with end to end security difficult with components standardized by disparate parties and implemented by others with numerous independent groups
 - Example: Evidenced by difficulty in obtaining consensus in standards groups like W3C Geolocation and DAP
- Work continues to consider privacy as part of overall design
 - Mozilla "Do Not Track HTTP" headers to convey user preferences http://lists.w3.org/Archives/Public/public-device-apis/2011Jan/0095.html
 - Rulesets, http://dev.w3.org/2009/dap/privacy-rulesets/
 - Web Introducer, http://web-send.org/introducer/

(Note there are various interpretations and initiatives related to "Do Not Track")

Privacy Patterns

- Patterns with focus on control over one's information as opposed to privacy of identity
 - "Sticky-Policy" pattern
 - User privacy expectations conveyed with information
 - Information Accountability and Appropriate Use
 - Audit logs and verification of activity
- Are there other relevant patterns?

Additional resources

- "Context-Aware Privacy Design Pattern Selection", http://www.hpl.hp.com/techreports/2010/HPL-2010-74.pdf
- DAP
 - WG home page and roadmap:http://www.w3.org/2009/dap/
 - Charter: http://www.w3.org/2009/05/DeviceAPICharter
- "Designing for Trust", http://www.ljean.com/files/whatIsTrust.pdf
- "Information Accountability", http://dspace.mit.edu/bitstream/handle/1721.1/37600/MIT-CSAIL-TR-2007-034.pdf
- "Internet Privacy Workshop Position Paper: Privacy and Device APIs", Frederick Hirsch, 5
 November 2010, http://www.iab.org/about/workshops/privacy/papers/frederick_hirsch-revised.pdf
- Privacy By Design, http://www.privacybydesign.ca/