Legal Liability for IoT Vulnerabilities

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About Me

• Trial lawyer at Armstrong Teasdale
• Complex commercial, consumer protection, class actions
• Mostly represent defendants
• Lead counsel for 220,000 member plaintiff class in the Jeep hack class action

About Armstrong Teasdale

• Top 200 law firm
• Top-ranked trial lawyers, strong IP practice
Presentation Overview

• Background and policy
• IoT vulnerabilities in general
• Why a wave of IoT lawsuits is about to hit (Jeep hack)
• Corporate risks
• Legal principles
• How to prepare
Policy Considerations

• “What would make ‘defense greater than offense’...?” – Jeff Motz
• Legal liability can play a crucial role in this calculus
• Purpose of tort law
• Accountability = change
• (Application of) the law hasn’t caught up to technology
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IoT: Potential For Harm

• Processors and communication capacity.
• Weak to non-existent cybersecurity.
• Wide variety of code. Even different models of the same product may have different, proprietary software. Complicates detection and patching.
• So many devices, configurations, proprietary codes, etc., that ad hoc patching often isn’t a viable option (suggests need for much improved designed cybersecurity).
• User error or inattention, e.g. patch lag.
IoT Harm: Pathways

- Data breach
- IoT ransomware
- DDoS attacks
- Privacy-related
- Potential for cyber-physical
Plaintiffs’ lawyers are watching...waiting. Why haven’t they pounced?

• Not many IoT hacks (with harm and attribution) – yet

• Few accepted standards of care

• Struggle of plaintiffs’ lawyers and enforcement agencies to understand the tech and how the law applies to it

• Few precedents
Interconnectedness Issues

• Not the first time product liability or other law has had to address new technology, but the interconnectedness involved in IoT is unique.
Who should be paying attention?

*Everyone* in the IoT supply chain

- Companies that **design** IoT products
- Companies that **manufacture** final IoT products
- Companies that manufacture cybersecurity-related **components** used in IoT products (e.g., Harman in the Jeep litigation)
  - Component manufacturers are generally liable only if their component is defective
  - There may be a **duty to warn** of foreseeable dangers if a component manufacturer is aware that the final product may be harmful/vulnerable
Some enforcement by regulators:

- TRENDSnet Webcam hack: Hackers posted live feeds (video and some audio) from 700 webcams in January 2012
- September 2013: Settlement with the Federal Trade Commission
- Security architecture review
- Vulnerability and penetration testing
- Code review and software testing for security
- Implement reasonable training and guidance of employees involved in designing, coding, and testing
- Firmware updates, stopped all shipments, updated all models
- Mandatory bi-annual third-party security audits for 20 years
Jeep Hack
Federal Class Action Litigation

• Filed August 2015

• Suing Fiat Chrysler and Harman International (manufacturer of the Uconnect head unit that Miller and Valasek hacked to gain access to the Jeep’s CAN Bus)

• Still going today
Corporate Risks
Reputational Harm
Remediation and/or Production Interruption

- Steps to eliminate the vulnerability, e.g., a product recall
- Software patches
- Firmware updates
- Production interruptions and engineering overhauls
Costs of Litigation

- Legal fees
- Burden on/distraction of key employees
- Disruption of operations
- Expensive experts
- Uncertainty

“I’m ready. Are you ready? Let the billing begin!”
Liability

• Legal concepts
  ➢ Damages
  ➢ Claims
Damages

- Vary by legal claim (negligence, warranty, strict liability, fraud, etc.)
- Property damage
- Personal injury to anyone injured by the product, including bystanders
- Diminished value of, or overpayment for, the product
- Emotional distress (sometimes, in some jurisdictions)
- Cost of repair
- Contract-based damages
- Punitive damages (depending on the culpability of the defendant – e.g., fraud or reckless disregard of consumer safety)
Potential Claims
Claims

• Negligence
• Strict product liability (design defect)
• Breach of warranty (express and implied)
• Fraud and fraudulent omission
• Consumer protection statutes
Bases for Liability

• Generally no federal law

• There may be variations among states, but the general principles are widely the same
Negligence

- A party may be liable for negligence if it causes harm after failing to take reasonable care
- Level of reasonable care is generally set according to industry standards, but tricky for IoT, since standards of care are not developed/established
- Duty of care applies to design, testing, manufacture, labeling, distribution, etc.
Strict Product Liability (Design Defect)
Design Defect: Examples

• Could be almost anything
• Hardware or software
• Inadequate segmentation, failure to use proper cybersecurity hardware devices or engineering practices
• Storing passwords in plain text, storing hardcoded admin password
Strict Product Liability: Elements

• Focus on the *product* rather than the *conduct of the actor*

• “Defective” if the product is *dangerous beyond a consumer’s expectations*, or it is “*unreasonably dangerous,*” considering state of the art, available alternatives, and a balancing of risks against the utility of the product.

• Physical harm to person or property
Breach of Warranty

- Express warranties (including marketing representations of safety/security)

- Implied warranties
  - *Implied warranty of merchantability*: a product is “fit for its ordinary purposes”
  - Fitness includes safety—if a product is unsafe when used as expected, then it is not fit for its ordinary purposes
Fraud/Fraudulent Omission

- **Fraud**: Affirmative misrepresentations regarding the safety/security of the product or component
- **Fraudulent omission**: Failure to disclose vulnerabilities that were known (or in some instances, that should have been known)
Consumer Protection Statutes

• State statutes, designed to be consumer friendly
• Broad definitions of actionable deception or unfair conduct
• Often provide for the recovery of attorneys’ fees, statutory penalties, and punitive damages
Defenses
Economic Loss Rule

• Precludes recovery for “economic losses” for *torts*
  ➢ “Economic losses” mean loss of value of the product or harm to a business

• Generally does not apply to fraud or consumer protection claims

“It’s worse than you think, it goes down to the third floor.”
Adherence to Standards as a Potential Defense

• Important start, but not necessarily a complete defense
• Compliance with government regulations
• Depends on foreseeability, standard of care, definition of a “defect,” etc.
What Should Companies Do?

• Decisions about the right level of security should be informed by considerations of potential liability.

• Not chicken little or “security nihilists” who believe that any compromise on perfect security is a mortal flaw.
What Can be Done to Minimize Risk of Liability?

• Act responsibly

• Be paranoid (hazard analysis, risk analysis)

• Allocate risk (contracts with other parties upstream and downstream, warnings, instructions)
  
  ➢ Hardware and software vendors, consultants, downstream users of the product, etc.

“We’re all living in each other’s paranoia”
What Can be Done to Minimize Risk of Liability? **Design Review**

- Hazard analysis:
  - Identify all intended and unintended uses and misuses of the product
- Risk assessment: What are the magnitudes and likelihoods of the risks?
- Are there regulatory or industry standards? Are they adequately protective?
- Address identified risks
What Can be Done to Minimize Risk of Liability? **Testing**

- Test products to identify vulnerabilities
- Penetration testing, etc.
- “CYA”: Memorialize the analysis and decision-making process.
  
  - Ultimately, in a lawsuit the design/manufacturing process is scrutinized, not just the end product or result
  - Prove that you acted responsibly, considered all foreseeable hazards, etc.
What Can be Done to Minimize Risk of Liability?

“Word Control” Programs

- Warnings (for all anticipated uses)
  - Substance
  - Language
  - Location (prominence)
- Instructions
- Manuals
- Marketing
  - Advertisements
  - Language that salespeople use
  - Don’t say dumb s*#t
Insurance

• Review corporate insurance policies with IoT liability in mind
  ➢ Scope of general liability insurance program
  ➢ Exclusions for cybersecurity liability (data breaches)
What Should IoT Companies Do if Their Product is Involved in an “Event”?

• Hire a [good] lawyer!
• Investigate the cause, including discussions with engineers and business people
• Identify scope of the issue and consider whether and how to notify consumers
• Respond quickly and responsibly
Black Hat Sound Bites

• A wave of litigation over IoT liability is on the horizon. The threat may be existential for companies that haven’t properly prepared.

• Sound cybersecurity design and engineering is paramount, but should be informed and guided by an understanding of liability risk.

• A clear process involving hazard identification, design response, risk assessment, word control programs, and testing, will go a long way to minimizing liability risk, and should help improve cybersecurity as well. Comprehensive. Followed. Memorialized.
Questions?
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