Online Trust Alliance
an Internet Society initiative

OTA & IoT

A Shared & Collaborative Responsibility

24 October 2017

Online Trust Alliance

- Founded as Industry Trade Organisation in 2007
- 65 members (e.g. DigiCert, Symantec, Verisign, Microsoft, Twitter, Coles)
- Internet Society and OTA merged in April 2017, with OTA members becoming ISOC members
- Objectives and Activities:
  - Promote best practices in protection of user security, privacy and identity, including data stewardship
  - Develop meaningful self-regulation

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IoT Challenges (starting with my house)

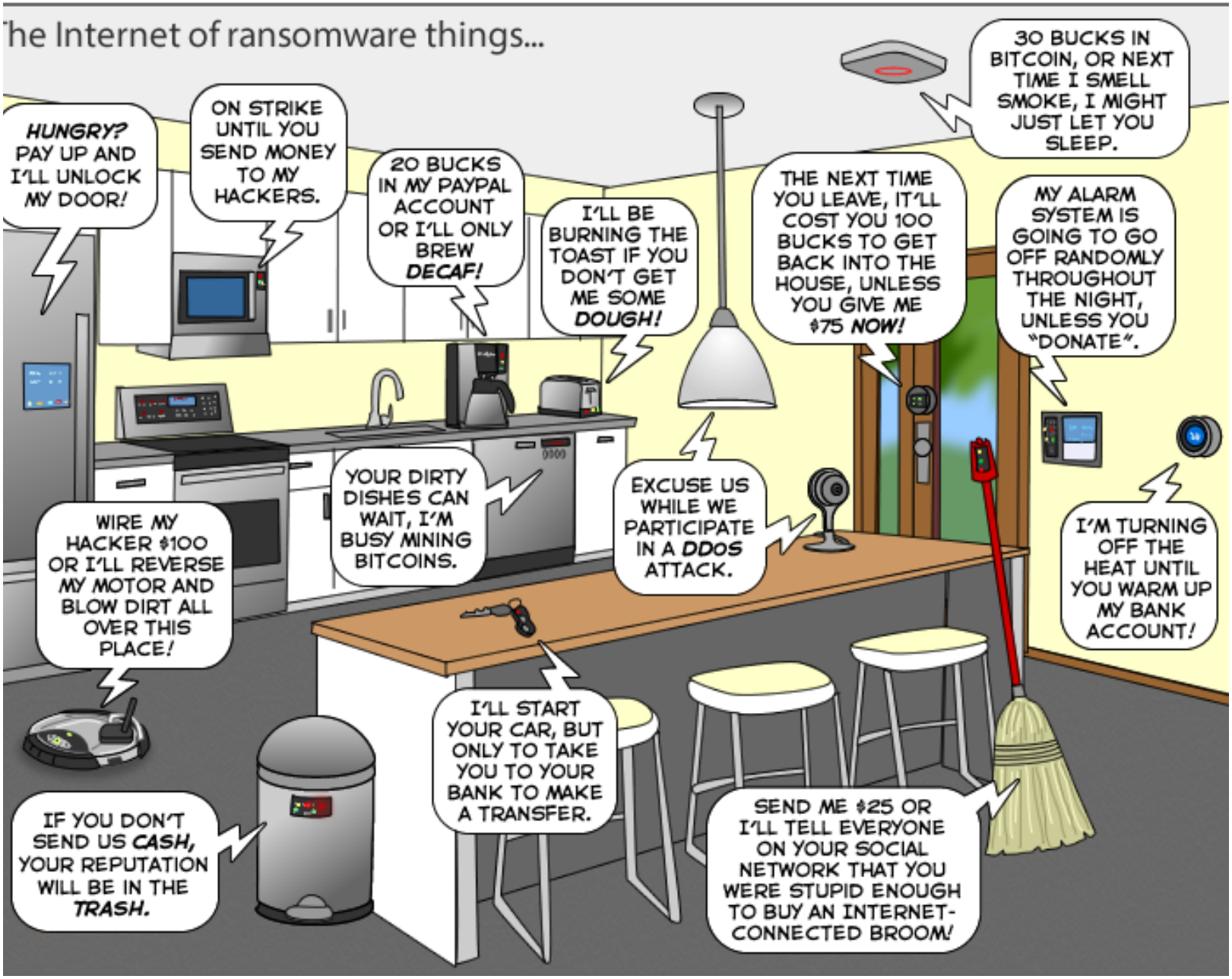
- Cable modem, router, switch
- 2 x WiFi access points
- 2 Apple Macs, 2 PCs
- iPhones (4), iPads (6), Android phone
- 1 x Synology RAID server (multimedia, backup and security)
- 1 x network printer
- Smart televisions (2), multimedia systems (2), gaming controller (1)
- Home security devices – security cameras (2), burglar alarm, smoke and fire sensors
- Home automation – would like to add lighting and temperature controls
- At least 30 devices in use

What is going on?

- I'm a reasonably astute technical user;
- I bought devices that support SSL/TLS management, IPv6, configurable security, and encrypted data transmission + storage;
- and, I have an idea how to do network monitoring

BUT

- I'm time poor, not at home much, and can't monitor everything
- I've little/no idea who these devices are communicating with, and who is communicating with them
- I've little/no idea what data is being collected, and where it's going
- Many devices have stopped being supported (usually 1-2 years)
- Some of the 'secure' aspects have been deprecated (e.g. TLSv1)


The Internet of ransomware things...
HUNGRY? PAY UP AND I'LL UNLOCK MY DOOR!
ON STRIKE UNTIL YOU SEND MONEY TO MY HACKERS.
20 BUCKS IN MY PAYPAL ACCOUNT OR I'LL ONLY BREW DECAF!
I'LL BE BURNING THE TOAST IF YOU DON'T GET ME SOME DOUGH!
30 BUCKS IN BITCOIN, OR NEXT TIME I SMELL SMOKE, I MIGHT JUST LET YOU SLEEP.
THE NEXT TIME YOU LEAVE, IT'LL COST YOU 100 BUCKS TO GET BACK INTO THE HOUSE, UNLESS YOU GIVE ME $75 NOW!
MY ALARM SYSTEM IS GOING TO GO OFF RANDOMLY THROUGHOUT THE NIGHT, UNLESS YOU "DONATE".
YOUR DIRTY DISHES CAN WAIT, I'M BUSY MINING BITCOINS.
EXCUSE US WHILE WE PARTICIPATE IN A DDOS ATTACK.
I'M TURNING OFF THE HEAT UNTIL YOU WARM UP MY BANK ACCOUNT!
WIRE MY HACKER $100 OR I'LL REVERSE MY MOTOR AND BLOW DIRT ALL OVER THIS PLACE!
I'LL START YOUR CAR, BUT ONLY TO TAKE YOU TO YOUR BANK TO MAKE A TRANSFER.
IF YOU DON'T SEND US CASH, YOUR REPUTATION WILL BE IN THE TRASH.
SEND ME $25 OR I'LL TELL EVERYONE ON YOUR SOCIAL NETWORK THAT YOU WERE STUPID ENOUGH TO BUY AN INTERNET-CONNECTED BROOM!

Something must be done!

- But there are ~40 different IoT industry bodies!
- OTA decided to take broad multi-stakeholder approach to assess IoT risks, and address security, privacy and life-cycle sustainability in IoT products and services
- OTA's IoT Trustworthy Working Group (ITWG) was established in January 2015, chartered with development of an IoT Trust Framework
- Consultation with more than 100 device manufacturers, major retailers, security and private experts, consumer testing and advocacy organisations, and governments
- Published IoT Security & Privacy Trust Framework in March 2016, updated several times, latest version (v2.5) released June 2017

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OTA IoT Security & Privacy Trust Framework

40 principles in 4 key areas to secure IoT devices and their data:

- Security – ensure devices use cryptographic protocols by default, only open physical and virtual ports and services that are required, regular monitoring of security settings, verifiable patches
- User Access & Credentials – strong authentication, storing of credentials, and anti-brute forcing measures
- Privacy, Disclosure & Transparency – what data is being transferred, only collecting data with affirmative user support, disclose end-of-life security and patch support
- Notifications – sending authenticated messages to users

https://otalliance.org/system/files/files/initiative/documents/iot_trust_framework6-22.pdf

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Okay, but so what?

- Other IoT frameworks exist (e.g. OWASP, IOTSF), but tend to focus on specific areas like interoperability and security
- OTA is arguably the only holistic IoT framework, although has overlaps with many of the others
- Talking with several leading manufacturers and suppliers who are agreed in principle, but still some legalities to resolve
- Several large retailers are planning to use OTA framework as filter for carrying products
- Working with consumer testing and review organisations – probably initially producing rankings than certification programmes
- Framework is conformant with NTIA IoT Multistakeholder recommendations

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More Information

- IoT Resources https://otalliance.org/IoT
  - Industry https://otalliance.org/IoTindustry
  - Consumer https://otalliance.org/IoTconsumer

- Online Trust Honor Roll https://otalliance.org/HonorRoll
- Join ISOC/OTA https://otalliance.org/membership

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