SECURITY and the INTERNET OF THINGS

The Internet of Things includes both traditional electronics and everyday "things" embedded with sensors, computing, & networking capabilities

CONNECTED HOMES

Traditional Electronics
Smart Thermostats
Security
Smart Lighting
Coffee Makers
Smart Appliances
HVAC Systems
Cars
Even Cows!

Wireless sensors tell farmers when cows get sick or pregnant, transmitting 200 MB per cow a year.

RISKS: Intrusion of privacy, risk to your physical home

The Internet of things is all around us

INDUSTRIAL INTERNET

RISKS: Financial Information, trade secrets

Real-time analytics
Factory automation
Robotics
Supply Chain Efficiency

www.internetworldstats.com

CONNECTED CITIES

RISKS: Safety, Financial Information, Location

Smart Meter Technology
Smart Parking Meters
Smart Traffic Lights

WEARABLES

Smart Glasses
Action Cameras
Electric Vehicle Parking
Fitness Bands
Smart Watches
Information & Navigation

RISKS: Financial Information Location

CONNECTED CARS

Safety
Vehicle Diagnostics
Fleet Management

RISKS: Safety, location

The Internet of things is growing faster than our ability to secure it

4.9 BILLION connected "things" will be in use by 2015

and **25 BILLION** by 2020

Almost one for every man, woman, & child on Earth

That's 2.5 per estimated population of 2020

Currently, people living in large urban environments are surrounded by thousands of trackable objects at every moment.

Where Internet of things capabilities are installed

Number of devices per year in millions

- Automotive
- Consumer
- Generic Business
- Vertical Business
- Grand Total

	2013	2014	2015	2020

Leaving an increasing digital trail offering new forms of cyber security risks

By the end of 2011, 20 typical households generated more Internet traffic than the entire Internet in 2008.

With **1 billion more** Internet users today than in 2011

2011 2.2 billion Internet users

Today 3 billion+

Large Cyber security Breaches by Year

(breaches with over 30,000 records stolen)

2015: 5
2014: 20
2013: 27
2012: 20
2011: 36
2010: 20
2009: 14
2008: 16
2007: 14
2006: 5
2005: 4
2004: 1

With several data breaches much larger than the rest

Number of records stolen

160M	152M	145M	130M	94M
Campaign against JC Penney, 7-Eleven, Hannaford, Heartland, JetBlue, & many others (2012)	Adobe (2014)	eBay (2014)	Heartland (2009)	TK/TJ Maxx (2007)

Some information is particularly sought after

Black market data prices in dollars

Item	Price	
CVV, 3-digit security code	$2	$$
Name, DOB, Basics	$3	$$$
Bank account details	$5	$$$$$
Credit Card (Old)	$5	$$$$$
Credit Card (market flooded)	$10	$$$$$$$$$$
Healthcare information	$10	$$$$$$$$$$
Paypal/eBay account	$27	$$$$$$$$$$$$$$$$$$$$$$$$$$$
Average new credit card info	$32	$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$

Cyber security professionals & detailed cyber security plans within new businesses are necessary

74% growth in cyber security jobs in the last 6 years

Nearly twice the rate of other IT jobs

Growing Threats

Many cyber attackers are hardened veterans with more experience than the IT professionals meant to defend against attacks

Organizations defending against disruptive threats are outdated. Threats today are "Campaigns" aiming at disrupting entire business sectors in many-waved attacks.

The barrier of entry in tech has never been lower, leaving many new organizations to later grapple with unsatisfactory security.

ERROR

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