

alertme

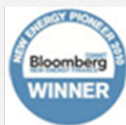
creating smart homes



The real 2020 challenge: Simplicity

CIR Smart Grids 5th June 2013 pilgrim.beart@alertme.com

www.cir-strategy.com/events



Today



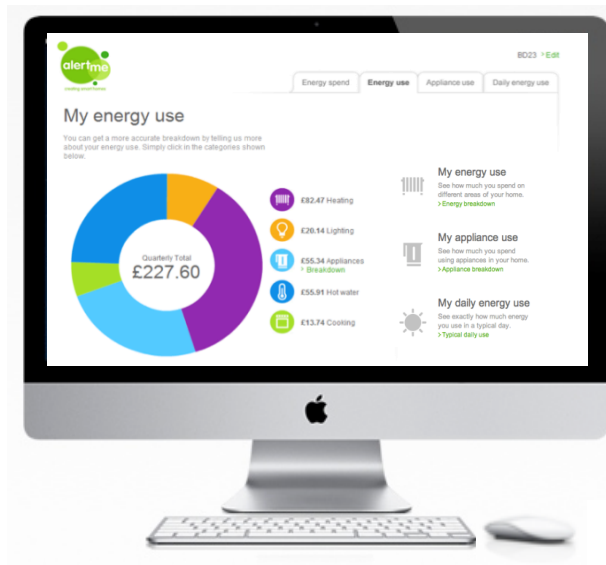
- Intro
- Big Picture
 - View from the Analysts
 - What's happening on the Internet of Things?
 - What's happening in the home?
- Towards Simplicity
- Conclusions

Intro



- AlertMe is the cloud link to your home

Smart Energy Analytics



Information

Analysis on how I & when I use energy to help understand my bill and advice on how to save.

Smart Heating



Smart Appliances

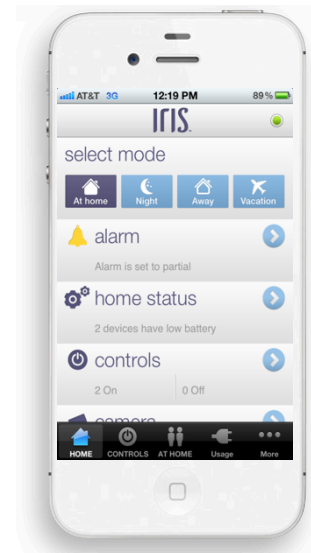


Remote Control

- Heating
- Cooling
- Hot water

- Appliances

Smart Home



- Lights
- Locks
- Security
- Cameras

Big Picture

What the analysts are saying



15b

internet connected devices by 2020

Cisco trends, June 2011

=IoT

50b

connected devices by 2050

Ericsson, Feb 2012

\$4b

Home Energy Management revenues in 2016

ONWorld, Oct 2011

72 m

home automation software platforms shipped by 2016

ABI, Q4 2011

\$6.5b

\$72b

Market for Smart Home Systems & services by 2017

Strategy Analytics Apr 2013

38 m

Smart Homes by 2015

ONWorld, Oct 2011

Cloud Service revenues by 2015

\$6b

50%

US homes with Broadband interested in connected thermostat

Parks Associates Q1 2012

INTERNET OF THINGS LANDSCAPE



Platforms & Enablement (Horizontals)

Connectivity FTTT, Symplo, ioBridge, ARRAYENT, electric imp, haystack, sensinode, ThingWorx, N NODE, EVRYTHING, bugswarm	Open Source Platforms sense, spark, Nimbits, ThingSpeak	Software Platforms sense, SmartThings, Withings, NINJABLOCKS, xively, TWINE, OSITO, zonoff	Sensor Networks MESHSYSTEMS, SAFECAST	Enabling Networks FreedomPop, SocialSign.in, Open Garden, SIGFOX	Corporates IBM, LG, CISCO, Honeywell
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Applications (Verticals)

Quantified Self Wearable Computing: GLASS, Pebble Fitness: FUEL, amigo, Withings, fitbit, JAWBONE Health: BASIS, LUMO, HAPIfork, wahoo, NuMetrex Family: REST, Lively, Good Night Lamp, Withings, EVADO FILIP	Lifestyle Leisure: blossom, ICA kitchen, remee, Thimble, iGrill, HEXBRIGHT, sobi Pets: gibi, FITBARK Toys: MakieLab, KAROTZ, greenGOOSE Music: gitar Gardening: BITPONICS, plantlink, Koubachi Home Improv.: Radiator Labs, netatmo	Connected Home Home Automation: SmartThings, NINJABLOCKS, lapka, Wovyn, electric imp, Ubi, N NODE Energy Efficiency: knut, nest, we mo, tado, ecobee, LIFX, belkin echo, micasaverde Security: Bosch, Lockitron, CANARY, HomeMonitor, iSmartAlarm New Interfaces: NeuroSky, gestigon, sphero, PrimeSense, EQUISO, emotivo, Interaxon, LEAP	Industries Retail: Nomi, euclid, placemeter Healthcare: VISI MOBILE, AdhereTech, AliveCor, TELCARE, intelligentM Automotive: Dashlabs, SYNC, OpenXC, enture Smart Buildings: APOGEE, Johnson Controls, Schneider Electric	Industrial Internet Robotics: KIVA Systems, Double Robotics, Airware, ROBOTEX, 3D Robotics, MOMENTUM Greentech: BigBelly, Axeda, enlighthd, GRIDMOBILITY 3D Printing: BOSYSTEMS, MezzoMill, Stratasys, formlabs, shapeways, MakerBot, RepRap
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Building Blocks

Connection Protocols neul, ZigBee, macheen, RFID, NFC, WiFi, Bluetooth, M-Bus, MQTT, 2G 3G 4G	Telecom at&t, verizon, T-Mobile, boost	M2M Jasper, CROSSBRIDGE, gemalto, Numerex, Telit, ERICSSON					
Software amazon web services, hadoop	Mobile iOS, Parse	Hardware epengate, ARDUINO, beagleboard, spark	Parts / Kits MAKEE MAKEE, TinkerForge, LittleBite, MOSORO, ready2mate	Services ICH International, DRAGON Innovation, makexyz, TN, adafruit, CIRCUIT LAB	Incubators BOLT, LEMNOS Labs, springboard	Funding KICKSTARTER, indiegogo	Distribution Anvil

Evolution of connected devices



MORE THAN
50 BILLION
CONNECTED
DEVICES



Ericsson, Feb 2012

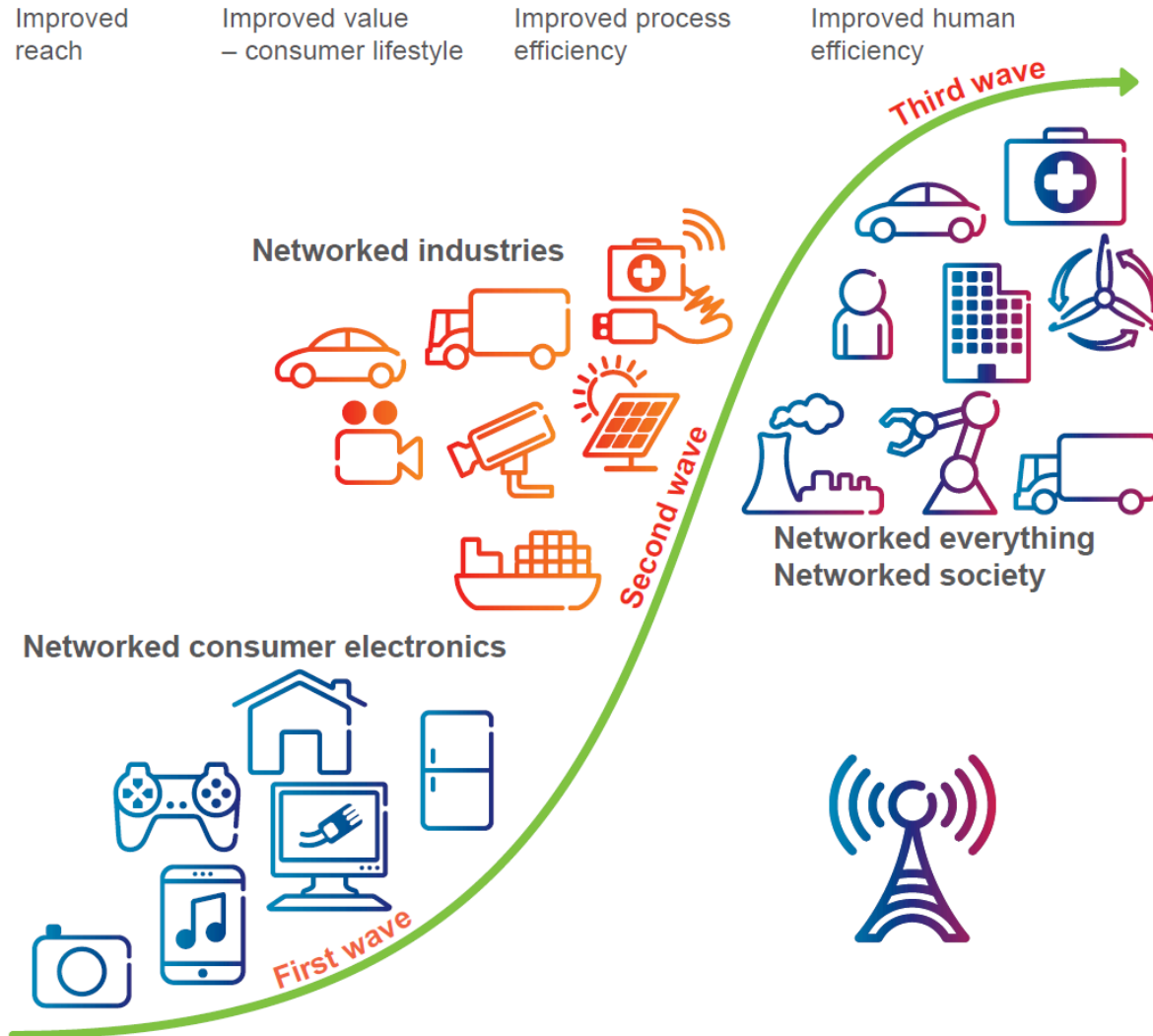
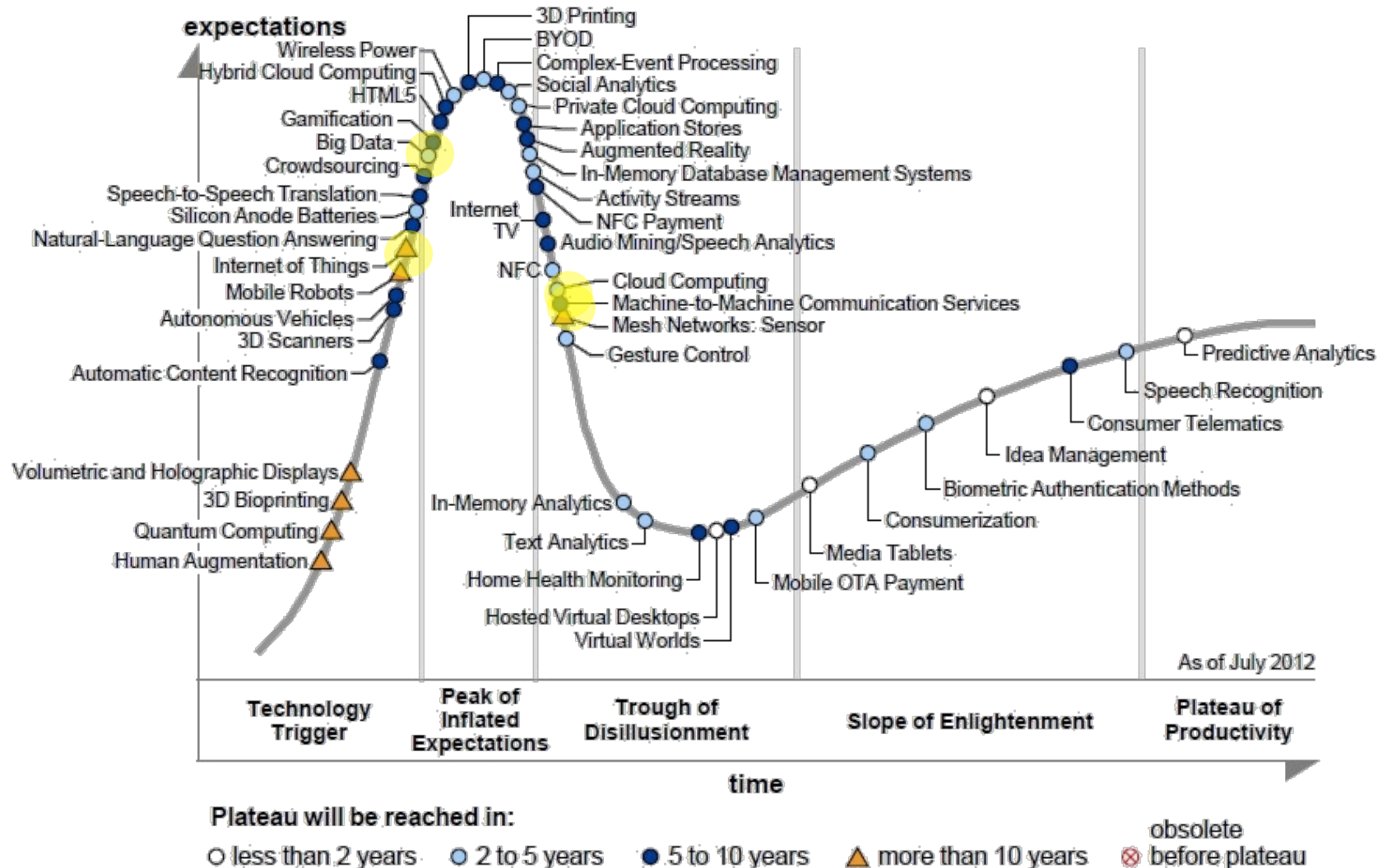


Figure 2. The three waves of connected device development.

Technologies maturity



Figure 1. Hype Cycle for Emerging Technologies, 2012



Source: Gartner (August 2012)

Home appliances & devices



65 million

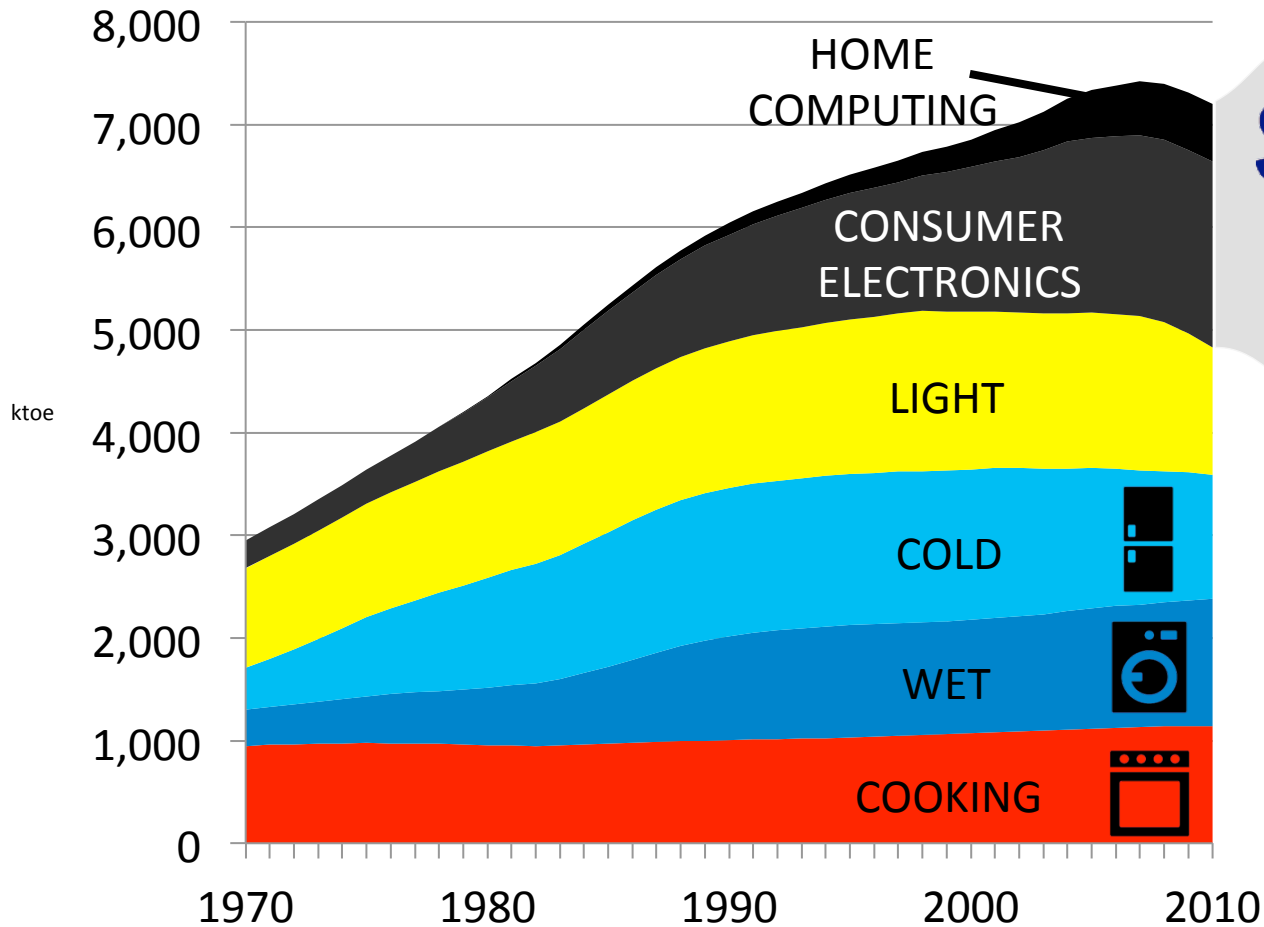
the number of devices in British homes – including desktop and laptop computers, and peripherals like scanners, printers, disk drives – rose from 30 million to 65 million.³⁴



In 2009 the average household owned 11 times more consumer electronics items than they had in 1970, and three and a half times more than in 1990

[Av home has 41 appliances today]

Home Electricity use



“Big Data”



- Smart Meters are not “Big Data”!
 - From at most 24 data-points/year/home today
 - to 17,000 with Smart Meters
- One AlertMe sensor generates
 - > 86k data-points/day, 31m data-points/year
- And e.g. “social” is Big Data because many:many

Definition of Big Data - IBM

Volume + Velocity + Variety + Veracity

Towards Simplicity

Connected Home – not new



Connected home technology has existed since at least as far back as 1975...

This is X10 Powerhouse for the Commodore 64, from 1986.

THE X-10 POWERHOUSE DOES EVERYTHING BUT PUT OUT THE CAT.

Model CP290

THE X-10 POWERHOUSE INTERFACES WITH YOUR COMMODORE TO CONTROL YOUR HOME...FOR SECURITY, COMFORT AND ENERGY SAVINGS.

This remarkable Interface lets you run your home through your Commodore 64 or 128 and a keyboard or joystick.

When you're away, it makes your home look and sound lived in. When you're home, it can turn off the TV at night and wake you up to stereo and fresh brewed coffee in the morning. It can even turn on your air conditioner and control your heating.

SPECIAL COLOR GRAPHICS MAKE PROGRAMMING A SNAP. You simply pick a room from the display screen. Use your keyboard or joystick to position graphics of lights or appliances. Then follow on-screen instructions to program any light or appliance to go on or off whenever you choose. You can even control thermostats, light intensity and more.



IT WON'T TIE UP YOUR COMPUTER. Use your computer only for programming. When you're finished, disconnect the Interface from the "User" or RS-232 port and keep it plugged into any convenient power outlet in your home. It will operate as a stand-alone controller with battery back-up and will run your home automatically.

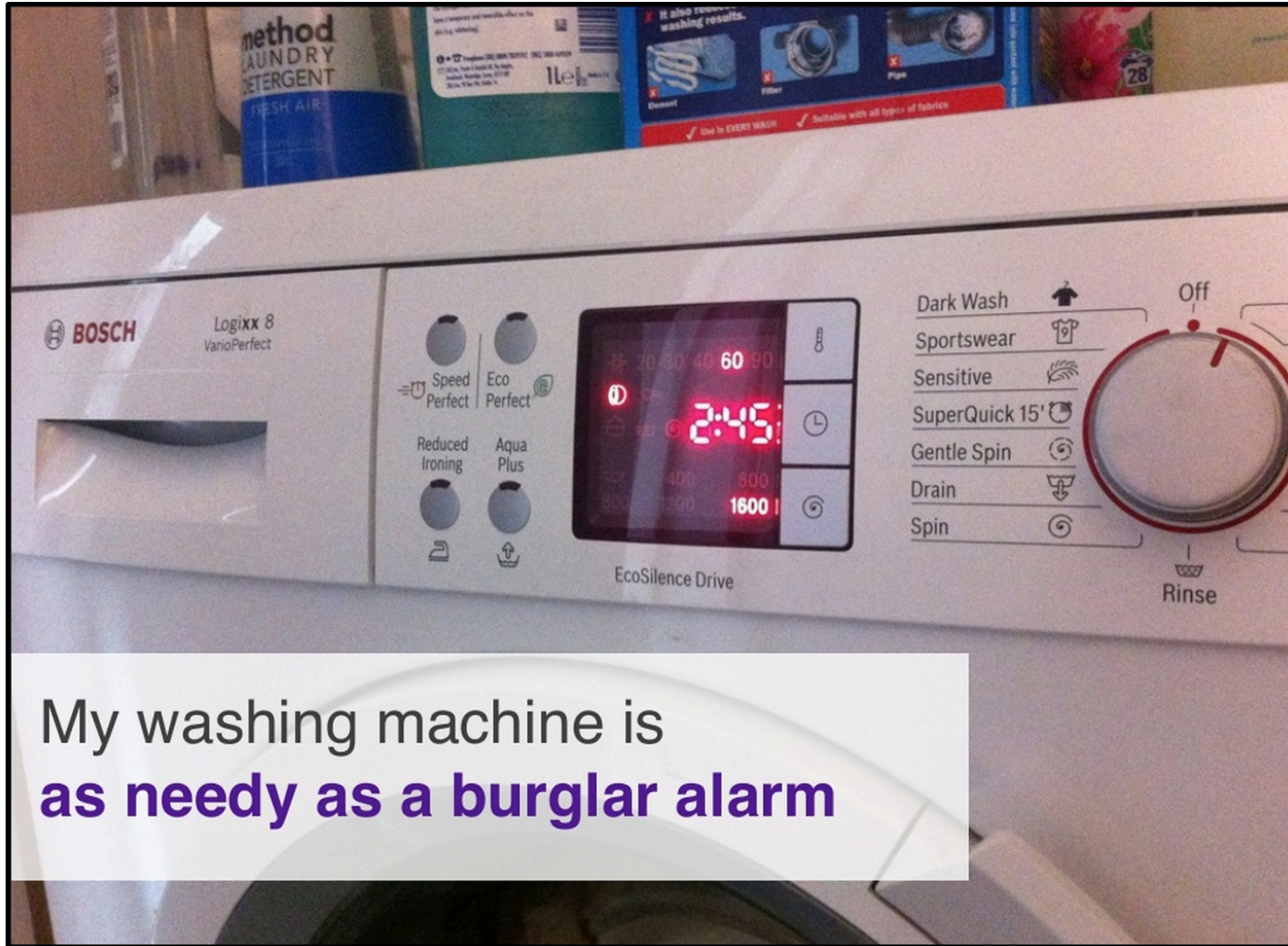
SURPRISINGLY INEXPENSIVE. A Powerhouse System including the Interface, software and connecting cables costs less than \$150. X-10 Modules are less than \$20 each.

For the Dealer Nearest You Call: **1-800 526-0027**
or, write to: X-10 (USA) [In N.J. (201) 784-9700]

185A Legrand Avenue
Northvale, NJ 07647
www.commodore.ca

X-10 POWERHOUSE

But when everything is talking...



My washing machine is
as needy as a burglar alarm

What if you had a whole home full of attention-seeking devices?

Too much information



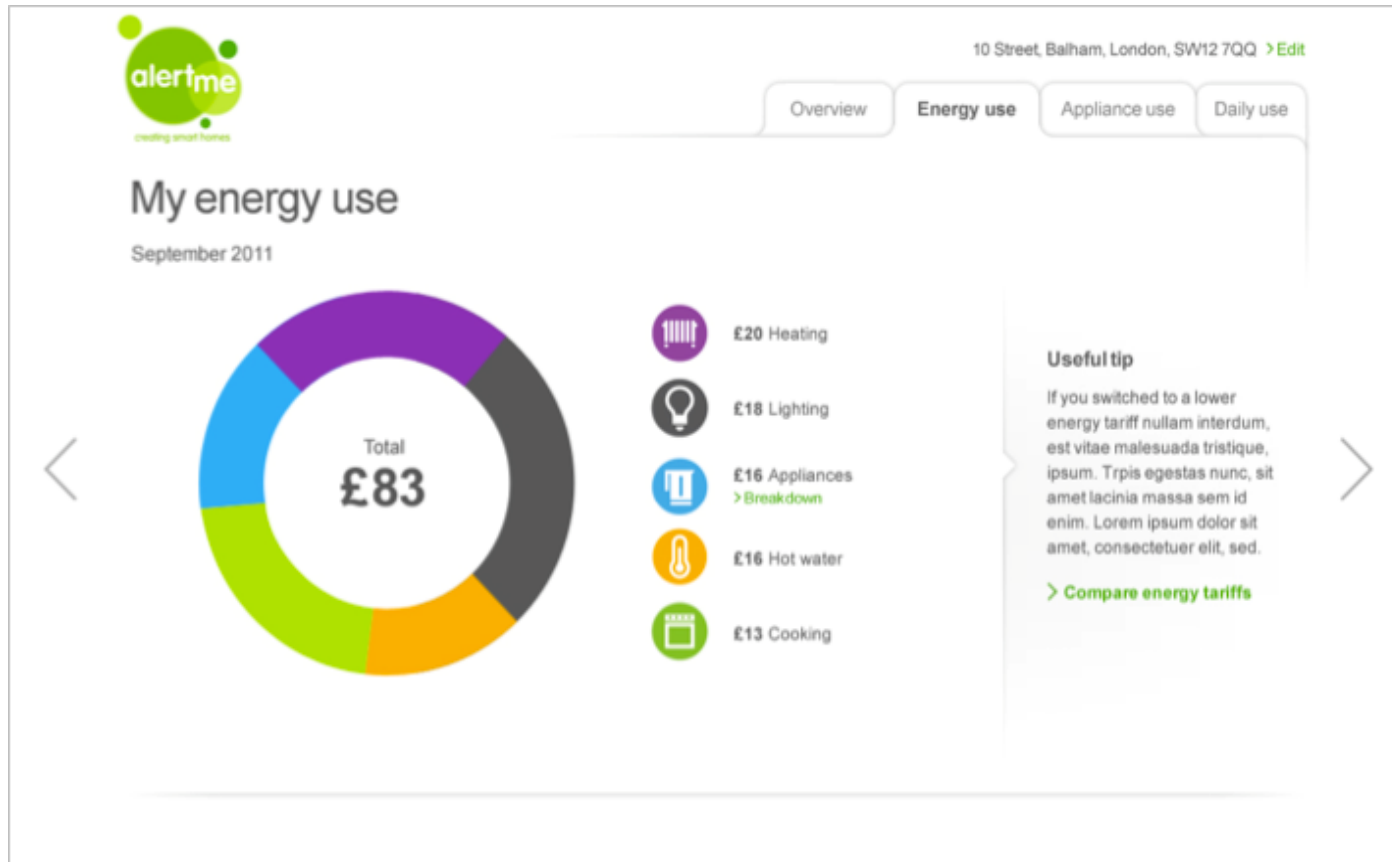
.... as bad as no information

User instructions:

1) Ignore it



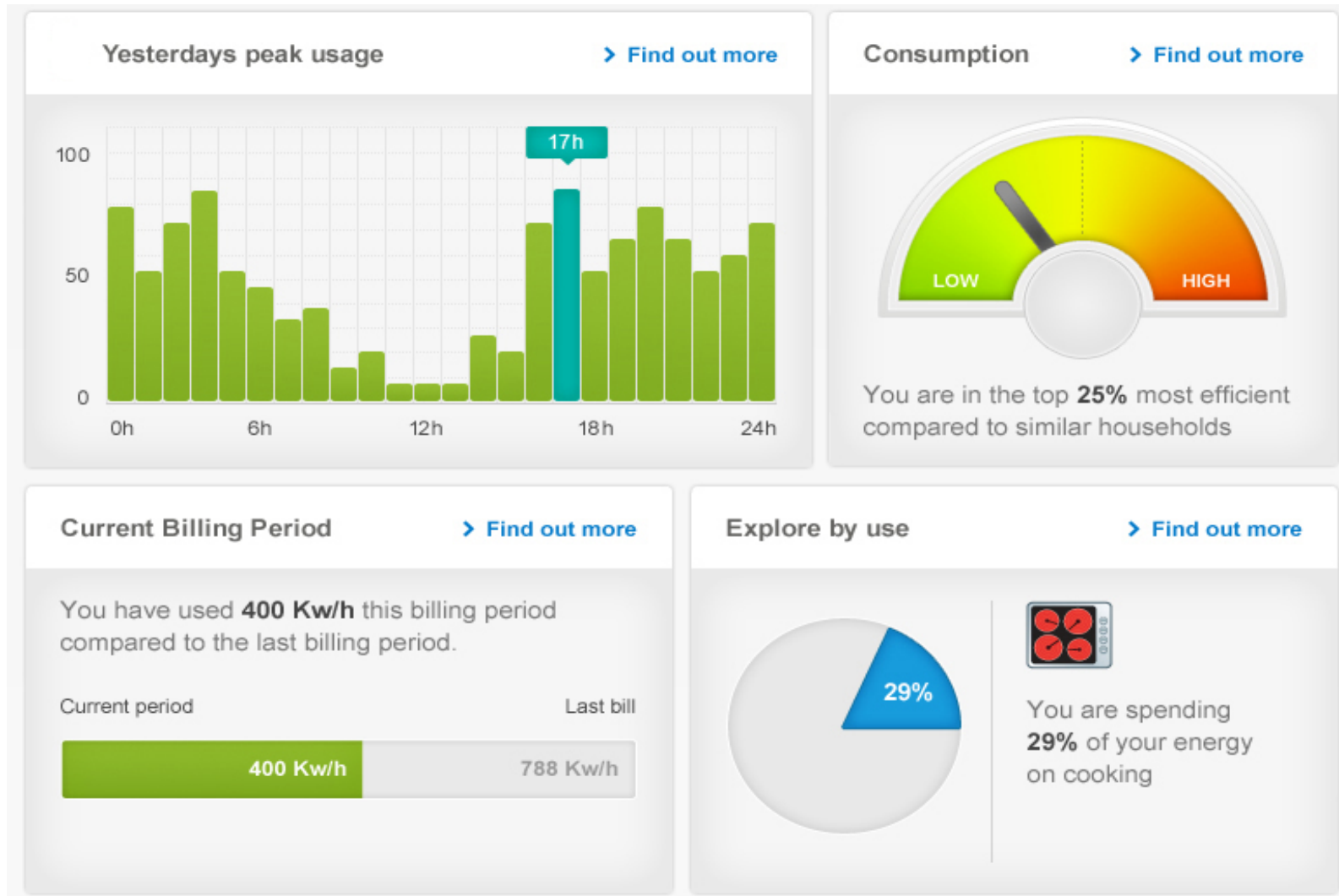
Making data useful



We love graphs
so consumers must - right?

WRONG - don't make them jump through hoops

Consumers - not business analysts



“What’s a dashboard?”

Simple information – often best



“Your boiler has a pilot light, this wastes about £120 per year”

“You spend three times as much on lighting than other homes like yours”

**“Have a look at your thermostat – it’s quite high.
Turning it down 1°C would save you £22 a quarter”**

Conclusions



- From a Grid perspective:
 - Grid may be a driver of IoT
- From a Consumer perspective:
 - By time grid is involved in the home, consumer IoT will be quite mature
- Smart Meters are just another place to get data
 - To grid, SM's are the key
 - To consumer: Just another minor Peripheral
- CADs

Don't focus on the Things, focus on the Data

Don't focus on the Data, focus on the Information

Don't focus on the Information, focus on the Message

The Real Challenge: Getting engagement with the consumer

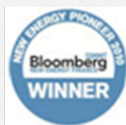
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Connected Home Applications



- Verticals starting to get penetration at scale:
 - Security
 - Energy (esp. Heating & Cooling, PV)
 - £30bn/year in UK alone
 - Smart Meters
 - Telecare
 - Fitness (FitBit, Nike Fuel Band...)
- Getting more consumer-driven (B2C)
 - Will Kickstarter accelerate this?

CH Channels to market



- Telcos, Retail, Utilities, CE
 - Many don't get it yet
 - Some just looking to monetise existing investment
 - Not putting customer first
 - Walled garden (e.g. O2 Joggler)
 - Some understand its disruptive potential
 - Threats
 - Disintermediation by product vendors
 - Increased end-user complexity
 - Opportunities:
 - Owning relationship
 - Reducing complexity
 - But don't quite see how the ecosystem will work
-

Connected Home Gateways



- Dedicated
 - STB
 - E-Meter/Comms Hub
 - Broadband router
 - Smartphone
 - Femtocell
-

Why now?



- Trend: from Products->Service
 - Enduring service relationship (vs. one-time sell)
 - Easier UX – Smartphone App
 - Remote access & control (for humans & machines)
 - Barriers falling
 - Increasing availability of Internet dial-tone
 - Falling costs of connecting
 - ARM: huge growth in embedded licenses
-

Summary



Conclusions:

- Revolution is being consumer-led
 - Seem to be 3 or 4 killer Apps for Connected Home
 - Many places a CH hub functionality can live
 - IoT moving from vertical to horizontal

 - By the time Smart Grid becomes relevant in the home, consumer plays will already be entrenched
-