alertme

creating smart homes

iHEAT
www.cir-strategy.com/events/heat
November 2012

Today

- 15 mins
- Situation today – and what's wrong with it
- Temperature ≠ comfort
- Roadmap
  - Information -> Control -> Automation

Our homes today

- 30% of all UK energy used in homes
- 80% of that used for heating and hot water

So ¼ of all UK energy goes on Home Heating + Hot water

Home energy cost

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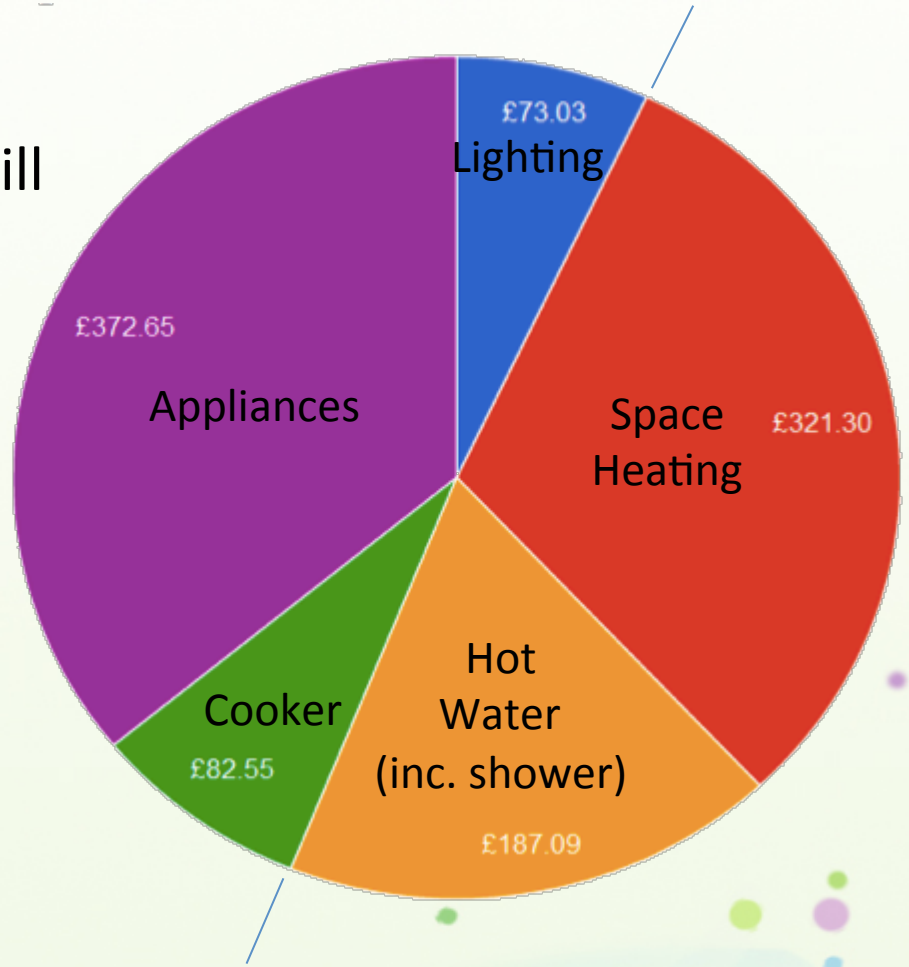
Elec bill
£528



Gas bill
£508

Source: AlertMe ADELE tool, based on UK govt stats

UK home average temperature

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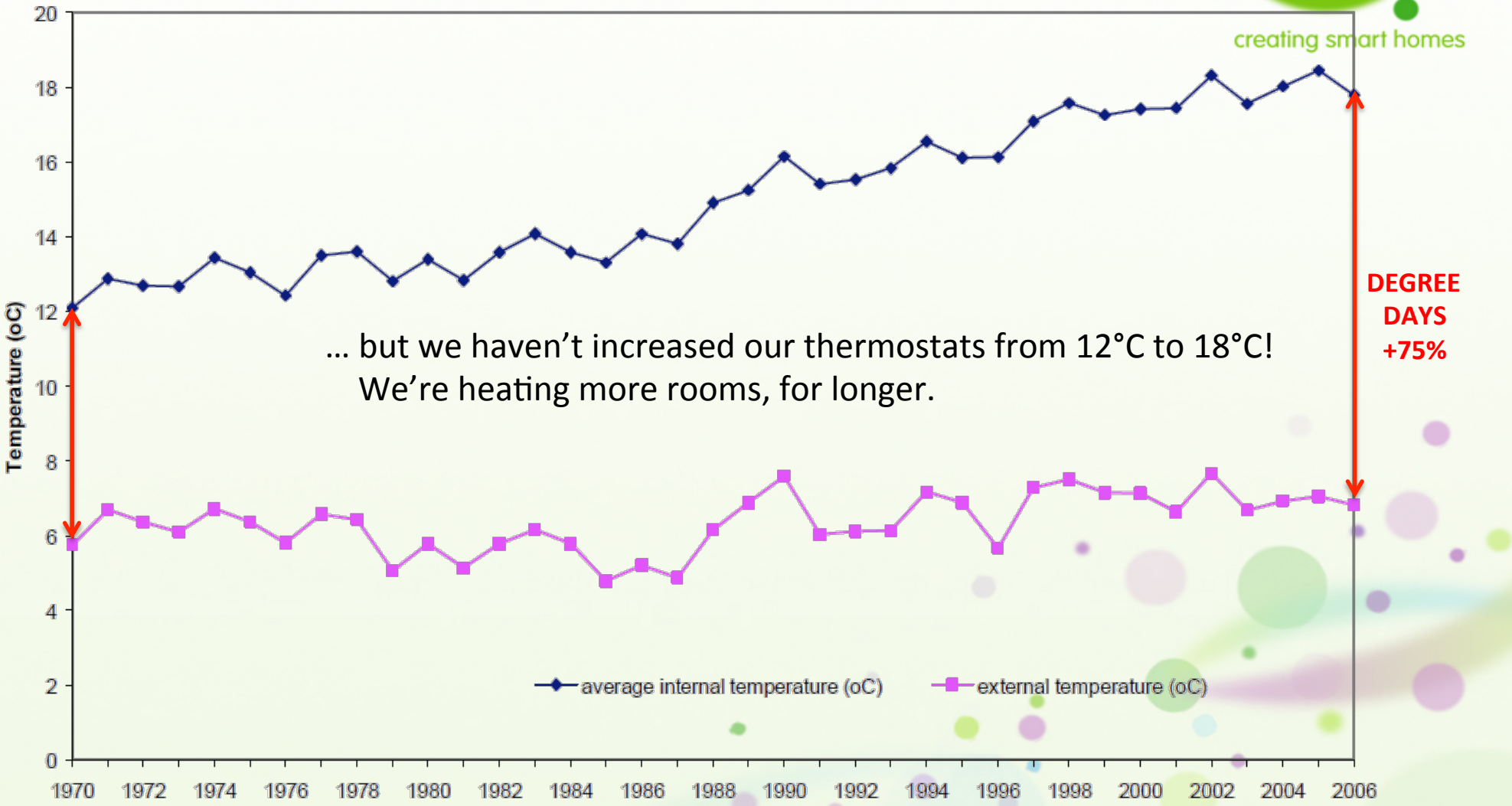

… but we haven't increased our thermostats from 12°C to 18°C!
We're heating more rooms, for longer.

Source: BRE domestic energy fact file 2008

Consumption still rising

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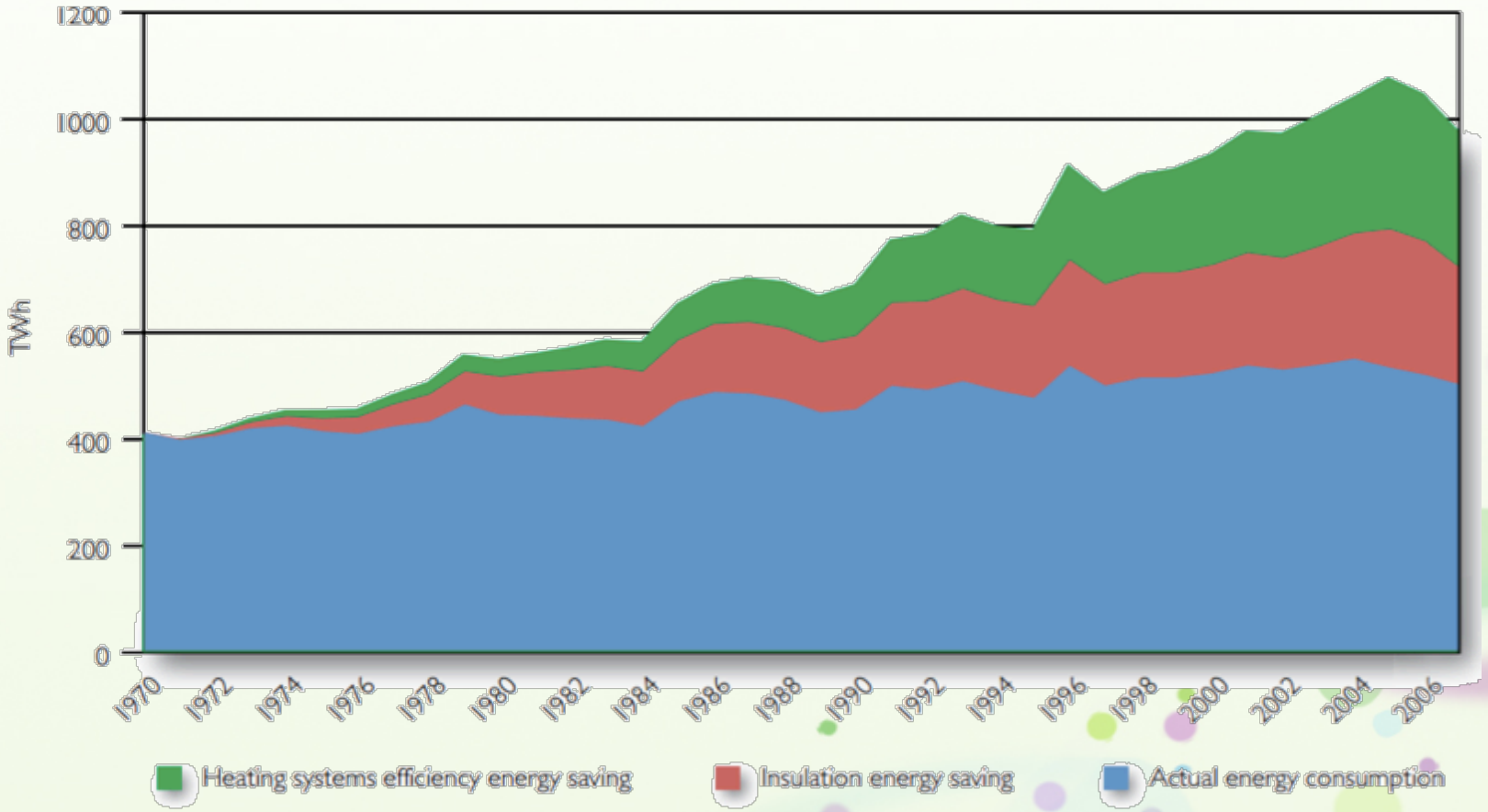
Chart 9: Energy savings from insulation measures and condensing boilers 1970–2007



Source: DECC

Today: UK Heating

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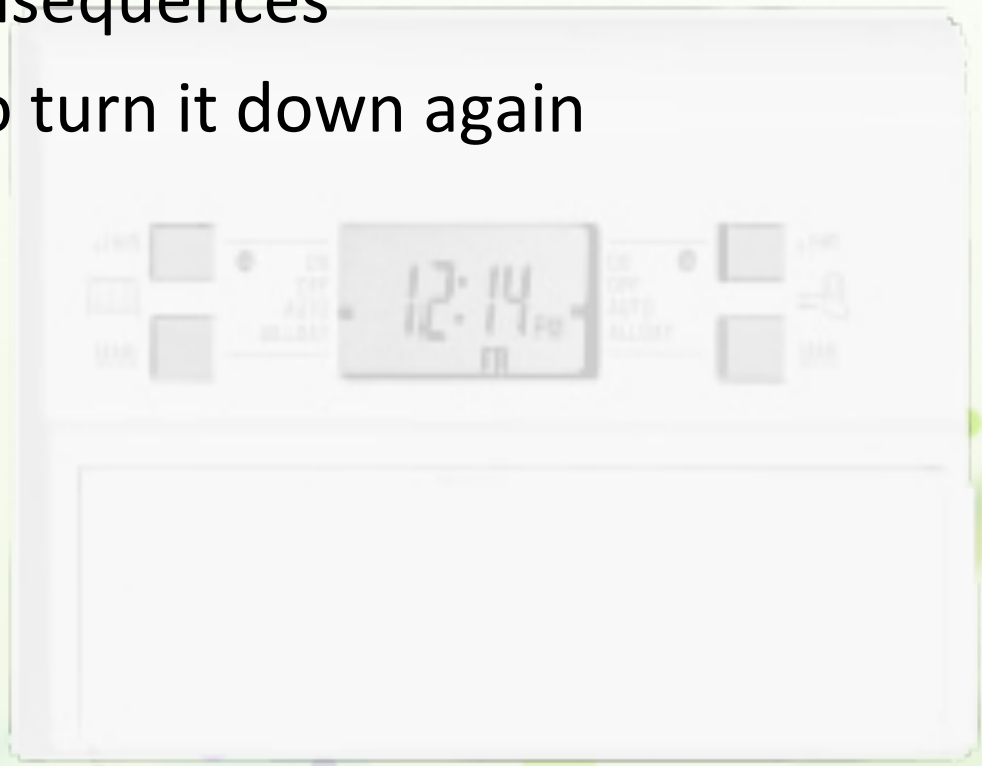
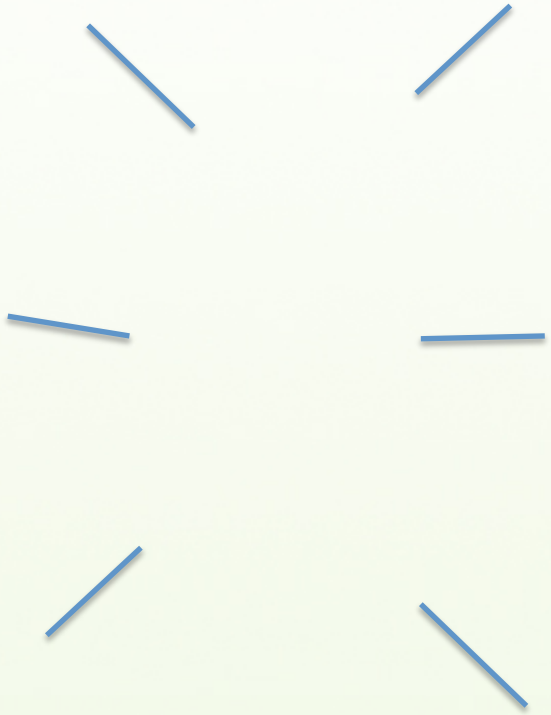
- Interaction:
  - If cold, increase thermostat/timings until not cold
  - No visibility into cost consequences
  - So nothing driving you to turn it down again



No thermostat



- 10m homes have neither modern controls nor thermostatic radiator valves[1]
- Many homes have no thermostat, nor TRV's
  - When arrive, switch on
  - When leave, switch off
- Not comfortable
- Probably quite efficient
  - Although sometimes over-heats

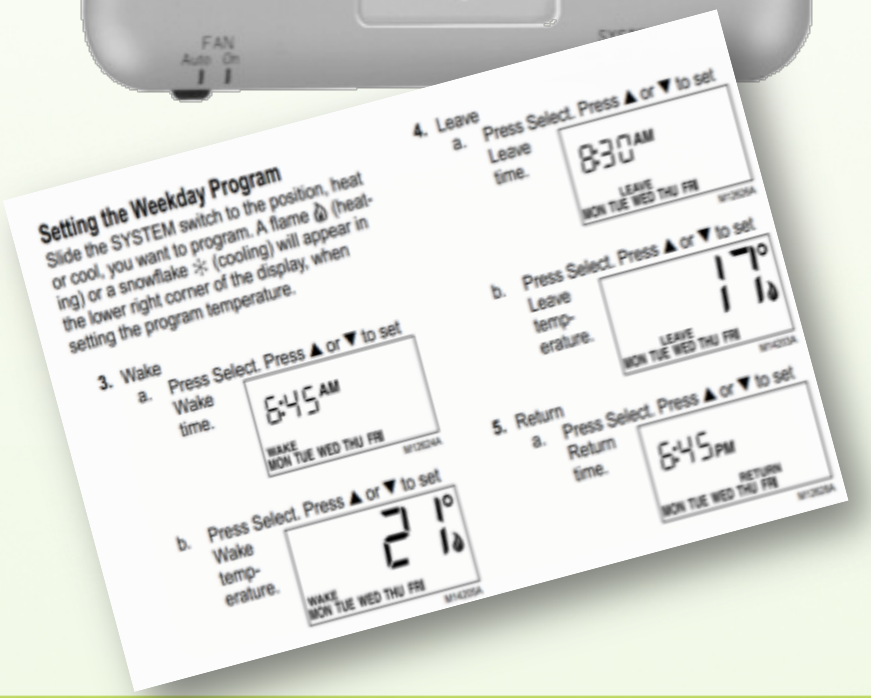
- Risk: As these homes get updated, or more affluent, they join the "centrally-overheated"

[1] Source: BERR Heat and Energy consultation 2008

“Old fashioned” thermostat

- Can be used as a switch
- Many people don’t understand thermostats
  - Leads to “thermostat battles”, and poor comfort
- If cold, turn up thermostat
  - No visibility into cost consequences
  - Nothing driving you to turn it down again

“Modern” thermostat



- “Come home to a warm home”
- Programming:
  - Programming? Like 1980’s VCR!
  - 47% can’t program their controls[1]

[1] Source: YouGov research of 2,085 people in GB conducted on behalf of PassivSystems, April 2010

Remote Heating Control

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- Much easier to set up
  - The Web is a big, colourful User Interface
- You're in control anytime, anywhere
  - From your sofa
  - From the your hotel room
  - In the airport returning home
- It's a Cloud Thermostat

Some (obvious) observations

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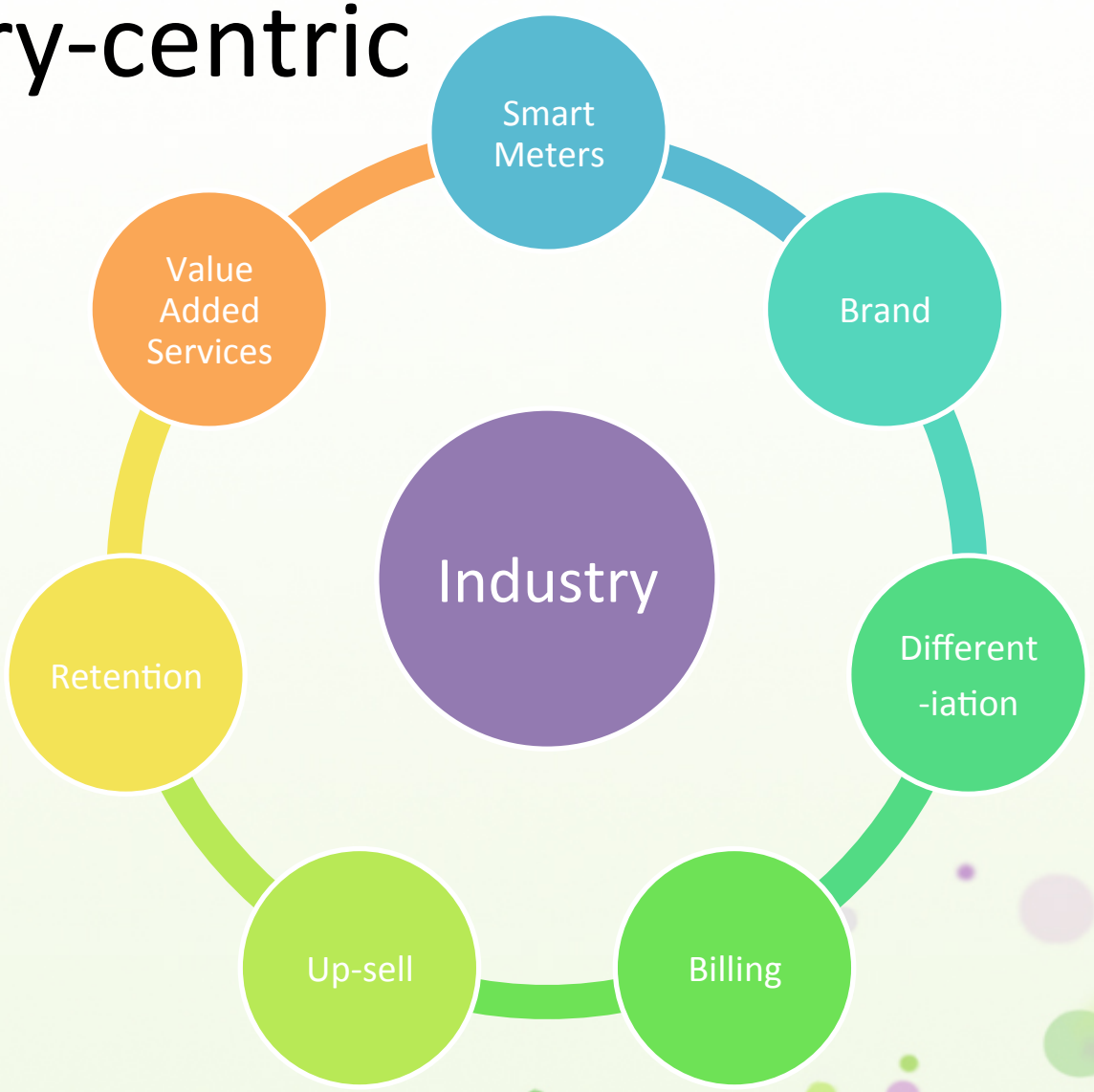
1. Occupancy matters
   - Your want your home comfortable when you're there
   - Doesn't need to be comfortable when you're not there
2. Temperature ≠ Comfort
   - Physiology
   - Psychology
   - A feeling of being in control

"A human's perception of whether they feel warm depends on what they are doing, and what they've been doing for the past hour or so" David MacKay, *Sustainable Energy - Without The Hot Air.*

3. Temperature ≠ £££
   - People want visibility into <u>cost consequences</u>

Industry-centric



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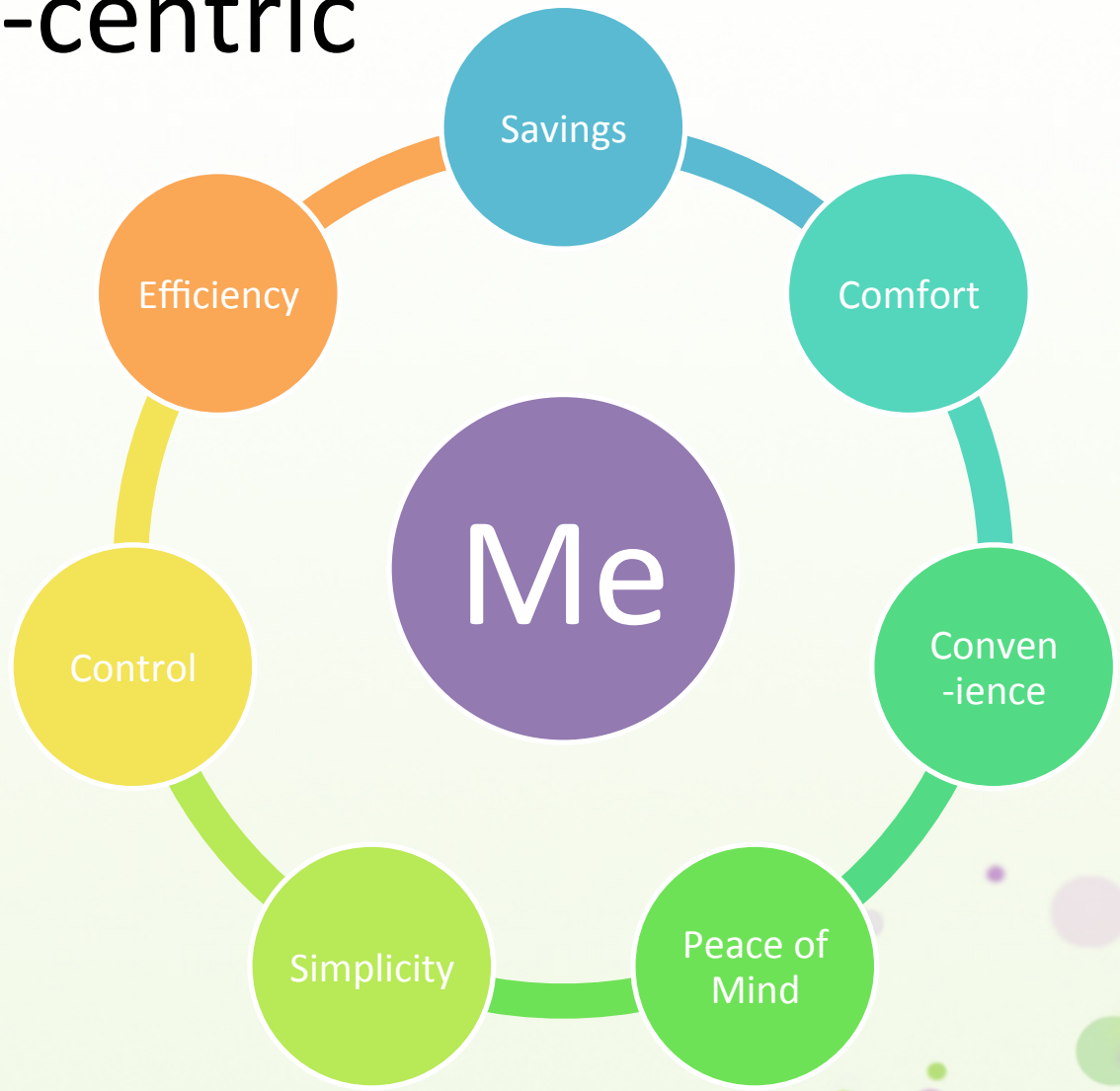
People-centric



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Intelligent Heating

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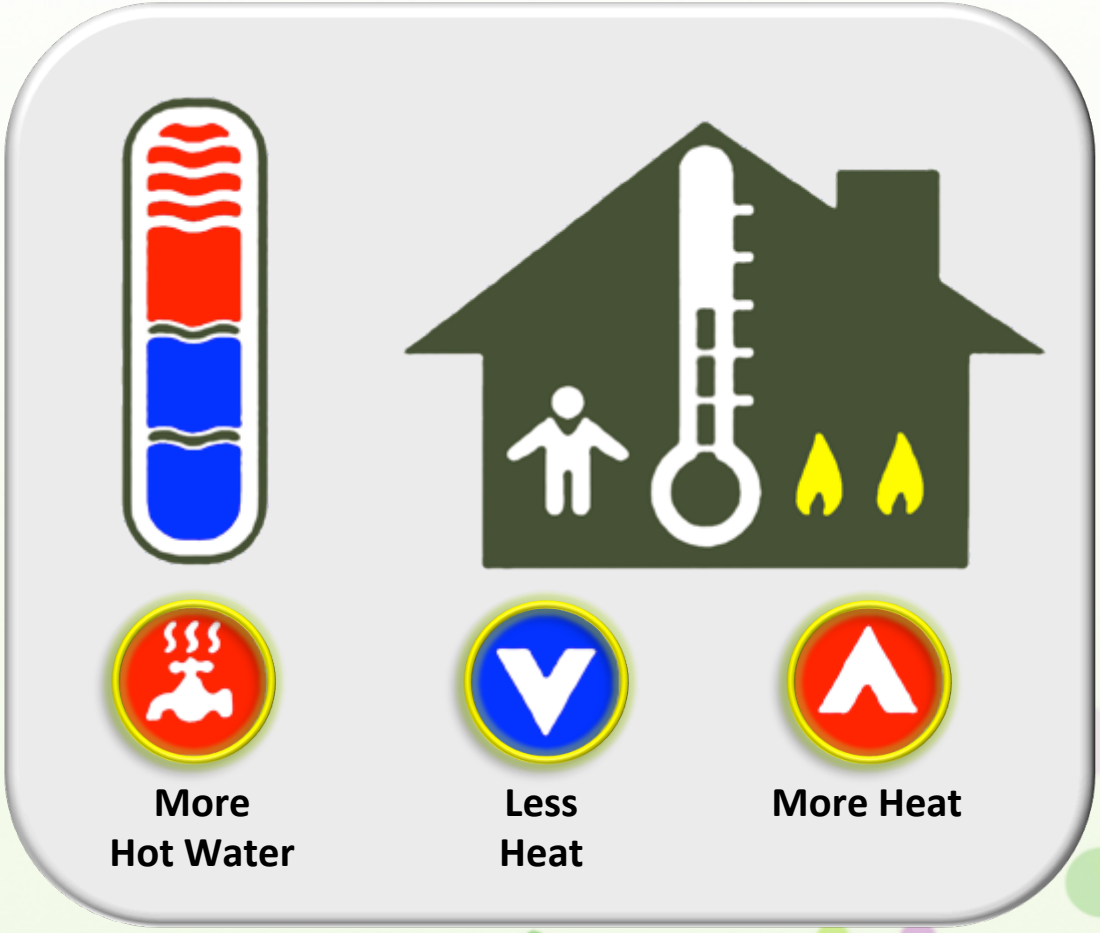


User instructions

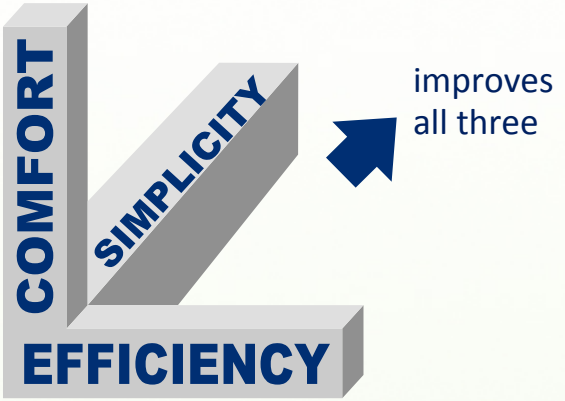
Step 1: Ignore it

Step 2: Press one of 3 buttons (exceptionally)

Image: WattBox

Intelligent Heating

- Occupancy
- Physiology
- Psychology



improves all three

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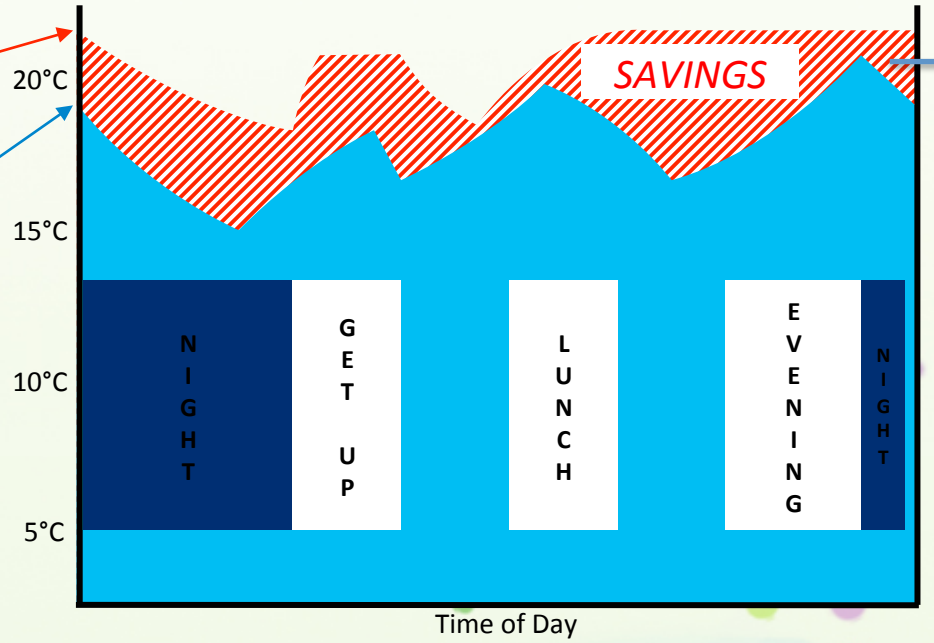
Modern programmable thermostat (fixed time & temp pattern)

Intelligent Heating learns and reacts to occupancy and occupants' physiological and psychological needs



And it should be able to tell you how much it is saving (£££)

Achieving statistical confidence for policy-making

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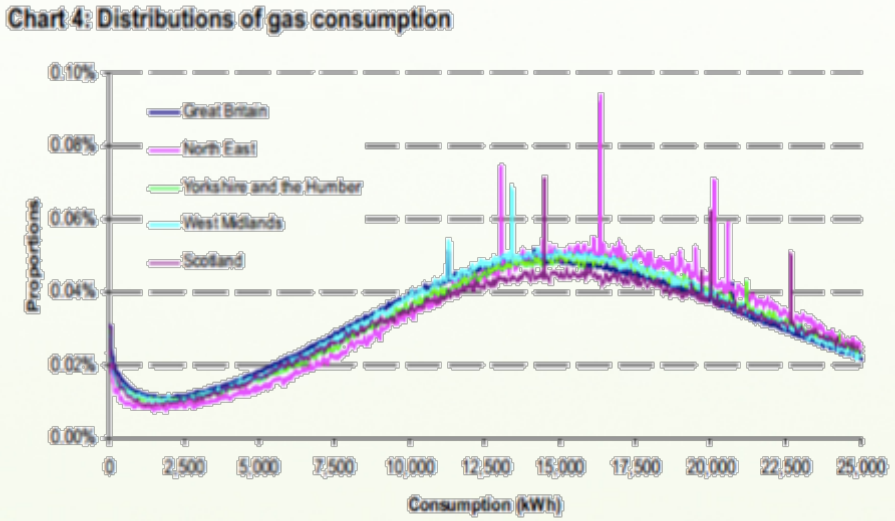

Source: BERR "Distribution analysis of domestic electricity and gas consumption in Great Britain "

"Stats 101"

- (Mean, StdDev) = (16000, 7000)
- Confidence Interval 95%
- Perfect sampling

Effect size we claim to be measuring	Minimum sample size required (to calculate mean with a 95% confidence interval)
±50%	3
±10%	74
±5%	294
±3%	817
±1%	7353

Connecting the home for a smarter life

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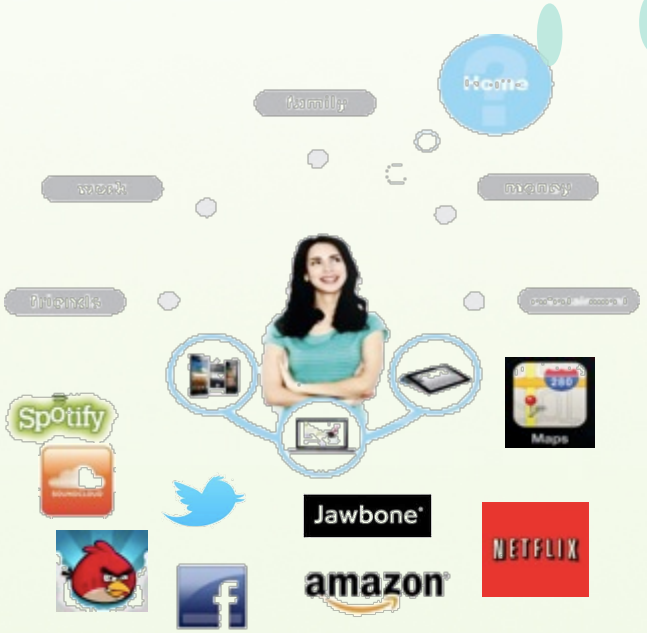
Consumers already have a cloud link to everything that matters to them…
except their home



Energy | Home Services | Technology

Cloud link to your home

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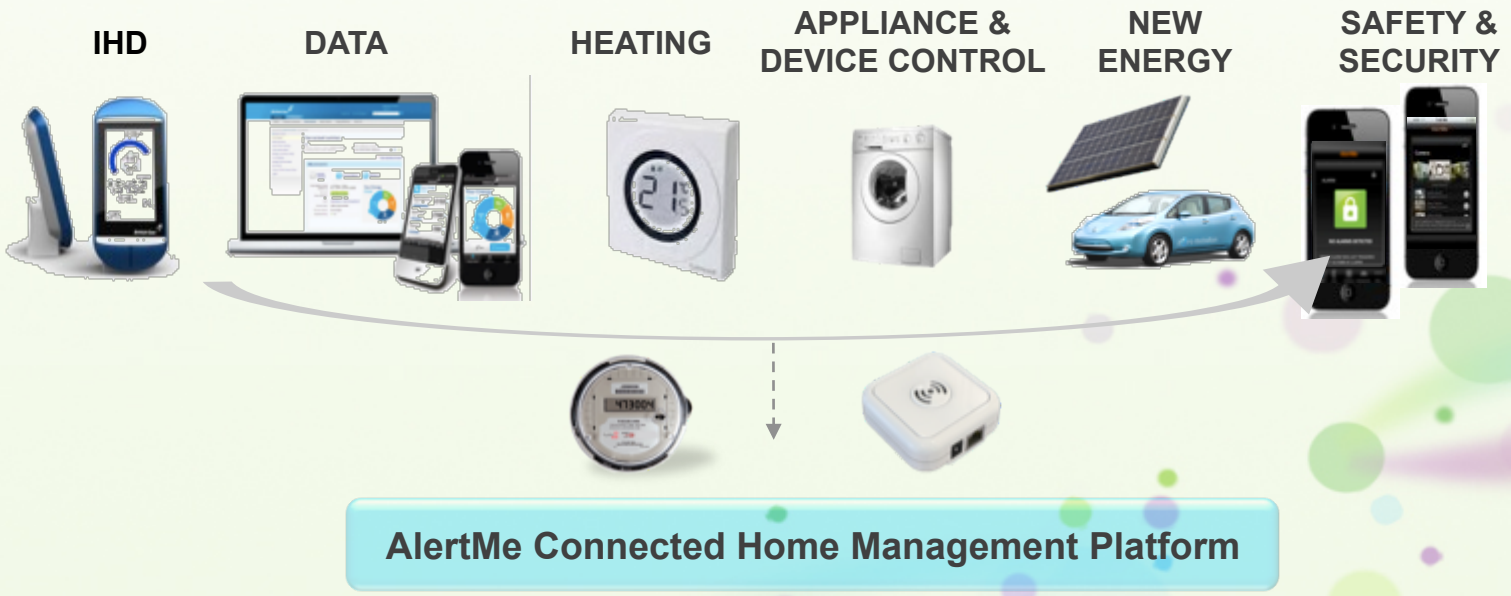
- A seamless journey through visibility, insight, control and intelligent automation, on a single user interface, for comfort, convenience and efficiency
- Affordable, easy to use and self-install
- Personalised insights that are relevant and intelligent automation that ‘learns’



Many propositions
One, extendable platform

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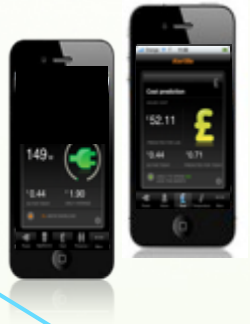

Smart Energy – ‘save’ message

Awareness & insight into home energy use

Home Monitoring & controls – ‘peace of mind’

AlertMe

Smart thermostat – ‘comfort & convenience’

Remote monitoring & control for convenience & peace of mind

Automated & intelligent heating, cooling and hot water solution

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