

Embedded Systems

The Internet of Things

19 January 2017

Last time...

- Embedded Systems can be found in many applications
- The Internet of Things is embedded systems connected to the internet
- Some of the Internet of Things might be useless (or even a security risk)
- Some of it could be very useful

This time...

- What can we learn from existing products in the Internet of Things?

Task 1 – Function and utility

- Groups of three or four
 - Doesn't commit you to coursework groups!
- Collect a product
- Research and discuss
 - Do you like the product?
 - What problem does it solve or opportunity does it create?
 - Would you buy this product for yourself or your business?
Why?
 - Does it make a positive contribution to society/productivity?
How?
 - Does it make a positive contribution to the environment?
How?

Task 1 feedback

- Who had the most pointless product?
- Who would consider buying the product for themselves?
- Who had a product that would benefit humanity?

Task 2 – user interaction

- Swap products
- Research and discuss
 - Would the product make your life easier?
 - Would there be any annoying aspects to its usage?
 - How is the product marketed?
 - Could it be misused by the end user?
 - Could it be misused by the service provider or government?
 - Could it be misused by a third party (hacker)?

Task 2 feedback

- Would it make your life easier or more annoying?
- Did your product have effective marketing?
- Could it be misused?

Task 3 - technical

- Swap products again!
- Research and discuss
 - What sensors and/or outputs are used?
 - What connectivity is used and how is the data processed?
 - How is it powered? Is the power source practical?
 - Do you like the design (style, obtrusiveness)?
 - What fallbacks are in place if connectivity is lost?
 - What fallbacks are in place if the hardware breaks?

Task 3 feedback

- Interesting or clever inputs/outputs?
- Good use of connectivity and processing?
- Ingenious or dubious power solution?
- Good design?
- Does it work if the network goes down?
- Are there serious problems if it malfunctions?

Lab/Coursework Groups

- 112 students registered, 35 sets of equipment
 - 28 Groups of 3 and 7 groups of 4
- Option 1: Form your own group
 - Take a form, fill it in, hand it back
 - Groups of three may have one extra added
 - Groups of two will have one or two extra added
 - If there aren't enough floating individuals, groups may be split up
- Option 2: Do nothing
 - I will put you into a group

GO!

You can leave once you've finished