

## **Networked Appliances, Dr. Toby Announced, 1<sup>st</sup> January 2020**

### **Seminar Report by Some Student and Another Student**

The subject of the seminar was networked appliances and was presented by Dr. Toby Announced. Dr. Announced defined a networked appliance as a dedicated-function consumer device containing a processor, which is connected via the Internet over IP to allow communication with other devices. Networked appliances are often described as Internet or IP appliances.

#### **Key Points of the Seminar**

- Networked appliances are optimised to perform a particular task, i.e. they are tuned to their function unlike a PC where functionality is overlaid on capability.
- Currently there are a multitude of device and technologies, e.g. Videos, Alarm Clocks, Coffee Machines
- Problems currently:
  - IP 4 does not provide enough addresses; a multiplexer would be required in the home
  - A Residential Gateway (RGW) would also be required (contains Firewall and Network address Translator)
  - Device would be difficult to access from outside, particularly by IP number; also even if the device could be addressed, what protocols would be used to communicate?
- Device portability, location independence, problem of delivering service to any device in any location
- Problem of security: if protocol messages could be seen coming out of the home, potential thieves could compile an inventory of devices in the home

#### **Implications of the work**

##### *Industrial relevance*

- Currently manufacturers build a level of obsolescence into their products:
  - Make profit from consumers buying new, updated products, therefore products are designed to fail in a reasonable timescale
- With networked appliances such as washing machines, Dr. Announced predicts that product sales will become irrelevant and that service will become the main profit-making factor
- Products will be built to last, and a charge will only be made for service (e.g. a charge per wash)

##### *Applications of the work*

- Limited only by imagination
- Example given of Internet Alarm clock

##### *Potential future developments*

- Problems of addressing, security and service location are currently being investigated
- A proposed solution is to support with use of SIP (Session Initiation Protocol):
  - hop-by-hop address solution
  - mobility (through registrations with a service provider)

- provides call set-up
- security/authentication
- SIP solves problem of trying to address through firewall
- SIP is a session protocol

Dr. Announced predicts within 4 years that the technologies discussed would become reality, e.g. smart fridges and bins will allow compilation of grocery lists based on product use. The devices may even order from the Supermarket automatically!