

# Home and Community 2025: Story Sheet 1 - Paul and Malcolm



## Paul and his Love-life

Paul is worried. He is a graphic designer working mostly from home. He meets most of his friends online and has always used virtual dating websites to meet women. He met his last girlfriend at a virtual music concert which his favourite band played at.

They got to know each other well before taking the relationship 'offline' but although they were very well suited it didn't work out. Since being single again Paul has met many girls online but recently hasn't had much luck. Last week he met Valerie at the local gym and she asked him out to dinner. He agreed but now he's feeling very unsure about the situation because they haven't been compatibility matched online and he doesn't know anything about her. When he meets girls online he knows what they are looking for in a relationship. Does he trust her?



Malcolm

*"Go for it Paul! It's all very well getting to know about someone online but you don't know if there'll be any chemistry until you meet someone in the flesh."*



Henry

*"Paul should be very wary of this woman. Being online allows you to learn everything about the other person. What has she got to hide?"*



Emily

*"People are so stressy. I have both online and offline mates and we have a laugh all the time. You've got to give everyone a chance."*

## Malcolm and the Shopping

Malcolm is a busy guy. He is sharp and fairly successful. Image is important in his business but he has always struggled to keep the weight off. Now he has found the answer. He has downloaded the Spectrum Diet into his kitchen computer.

For the first time Malcolm can watch his weight without stressing over calories because the computer does all that for him. The computer co-ordinates the cupboards and the fridge to keep a check on what foods come into the kitchen. Now that the local supermarket is tagging all its food the kitchen can tell his shopping trolley what he needs to buy for this week's menus, and the trolley can point out special offers to the kitchen. Best of all, Malcolm never has to eat the same stuff all the time.



Paul

*"There are so many different diets around. How do you know if you've chosen the one that really is good for you?"*



Henry

*"I like the smart trolleys, it's a good compromise. The technology helps you buy everything you need, and you get to choose your own food."*



Emily

*"These diet programmes are just a ploy from the supermarkets to make you buy their products, and the tagging is just a way for them to know exactly what you are buying so they can try and sell to you even more stuff that you don't need."*

## Paul and his Love-life: Where we are now



The Internet is now commonplace at work, home and school, but it was almost unheard of twenty years ago. Now we check facts, buy everything from groceries to stocks and shares, play online, date and keep in touch via the Internet. This network grows 'organically' and is not controlled by companies or governments so its hard to predict how it will develop, but new technologies mean it could play an even bigger part in our lives in the future.

Technology of 'Worldwide Interoperability for Microwave Access' (WIMAX) standard boosts the amount of data we can transfer. Improved mobile phones mean we can connect to the Internet anywhere, and we can also link mobile computing devices to form networks. These Mobile Ad-hoc NETWORKS (MANET) are quick to set up and are useful in situations where conventional communications networks aren't available.

Digital data is growing every day and its becoming harder to manage the quantity, or check the quality. New software is being developed to help us sift through huge amounts of information to get the facts we need. This kind of sophisticated technology could be used to help us find people online who match our descriptions of potential partners.

Webcams and videophones mean that we will be able to see and hear our contacts more, and improving voice recognition software opens up the possibility of translation on the go, so it could be even easier to get to know people who we don't meet in person.

## Malcolm and the Shopping: Where we are now



Radio-frequency identification (RFID) tags are the electronic tagging devices, also known as 'smart labels', now taking over from barcodes. These tiny tags broadcast information about the source of the tagged item and its contents. A postage-stamp sized antenna picks up RFID data and feeds it to the network. Unlike barcodes, the tags don't need to be visible.

If scientists manage to boost the range and cut the price of RFID tags, they could be found throughout supply chains everywhere. On leaving the shop, the network could automatically contact your bank and deduct the correct sum.

Networked smart tag readers in your fridge and bin could monitor what you use and need, and generate a new shopping list. Products could be traceable from the till to the dustbin - or the recycle bin - so we could keep track of when and where we throw things away. RFID tags have already been placed in wheelie bins by some local authorities to match bins to houses and collect data about how much waste goes in the bin and when it gets emptied.

New agent-based software uses artificial intelligence tools to search databases more efficiently and rationally than a human user. This could make it easier for companies to monitor patterns in our consumer habits and predict what we might like to buy next, in order to tailor their marketing.

# Home and Community 2025: Story Sheet 2 - Emily and Henry



## Emily and the Robot

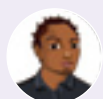
Emily is 16 and is at college. Like many people she is very concerned about issues of fairness and justice. This extends to the new domestic robot Henry has bought for the family.

The robot is marketed under the name Auton, but Emily always calls it Barney. It is a fairly simple robot capable of hoovering, window cleaning, ironing and a number of other household chores. It's a brand new model and will be able to be upgraded to do new tasks as the technology improves. Owners can choose from a range of human features. Emily thinks that one day it will become intelligent enough to have feelings. Maybe it already has? Auton is set up to return to the garage during downtimes, but Emily says Barney should sleep in the house at night.



Paul

*"Emily is so off her head with this robot thing. It's a machine for crying out loud. Next she'll be wanting to park the cars in the kitchen in case they get cold at night!"*



Malcolm

*"These Autons are smart, but they're not clever. Maybe one day we'll have robots like Emily says, but I don't think so - I hope not."*



Henry

*"Emily is just young and naïve. Maybe if I'd got the dog shaped model she would be happier."*

## Henry and the Cameras

Henry is Emily's Dad. He and his wife Ruth are busy and successful people. They have a very nice home, smart cars, good clothes - everything you could want.

Henry really likes gadgets and gizmos; he always has to have the latest model. Lately, Henry has been installing some new security equipment around the house. With so much hi-tech stuff already, it makes sense. This new system can recognise individuals, scan clothing for concealed objects, and even assess the emotional state of a stranger ringing the door bell. Naturally, the whole system is integrated into the national crime protection network: a place where householders can share resources and information and be in constant communication with the police public surveillance network. All of this is good for Henry's peace of mind.



Paul

*"Since mum married Henry she has felt really secure. Personally, I don't like to see cameras all over the place watching everyone; but it's Henry's house and he can do what he likes."*



Malcolm

*"It's great that Henry is protecting his family in this way - it just shows that he cares about them. Every man would do the same if he could. Pretty soon I will be able to afford something like that."*



Emily

*"Yeah great, now my dad is bugging me in my own home. It's bad enough that I can't walk down the street without being filmed everywhere I go. No wonder I never bring anyone back here to meet my family."*

## Emily and the Robot: Where we are now



Researchers are already developing robots as 'human companions' to help around the house, although these may take 20 years to perfect. Robots are already in some homes, mowing lawns or vacuuming carpets.

Artificial Intelligence programs already allow computers to do problem solving or reasoning tasks, like playing a game of chess with a human opponent. Some robots can 'learn' through experience, and some can learn and perform individual tasks well, such as chopping vegetables or picking up a coin. But humans are hugely complex, and making a single robot perform a wide range of tasks well is a big challenge for robot engineers.

Robots that can learn by asking questions, ask for actions to be repeated, and communicate frustration, exhaustion or boredom are being developed. Researchers are working on robots that can react to human eye movements, speech patterns and body language to help them to learn to interact with humans. Some have been programmed with basic emotions, so they frown if struck or sleep when nothing is happening.

Rather than a single human-like robot, it is possible that smaller intelligent devices could be spread around the home. Robots could one day assist the elderly and people with disabilities who want to keep their independence. Researchers say these robots will be simple to use and will merge into the background in the 'smart' home of the future.

## Henry and the Cameras: Where we are now



Scientists are developing imaging and software techniques to analyse human posture, expression and movement, which could be used to identify threatening or suspicious behaviour.

At the moment our identity can be revealed by a fingerprint or verified with a signature, and DNA fingerprinting is already used extensively in solving crimes. Other identification methods could become commonplace in future. These include face and voice recognition, as well as eye-scanning techniques to detect unique features of the iris or retina. These new methods need new sensors, and recognition software would need to be developed with a low error rate to avoid false alarms.

Tracer materials are currently being developed that can leave an invisible mark on individuals so that they can be identified at a later stage. For example, an odourless, colourless dye solution called 'SmartWater' shows up under ultraviolet light. The dye's fluorescent signal can be tailored to specific locations, providing a coded fingerprint of the place where it was sprayed.

Motes are tiny battery-powered computers with radio links. They talk to each other and organise themselves into ad-hoc wireless networks. Some products are already fitted with a version called RFID tags. In future mote sensors may find their way into our homes and workplaces and into the furniture or objects we use. These devices are known as 'smart dust'.

Computers could be all around us, in appliances and materials. These together with better security devices and models can improve personal security, but they also rely on more complex information and communication systems.