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ASSOCIATE PLANET

Smart Technology and The Smart Environment

Smart Homes

Smart Buildings

Smart Cities

Integrated Everything

Sustainable Business Partnership CIC

Introduction

Smart Technology and the Smart Environment.
What is it and how can it help us.

Make Technology Work For Us

We want to make technology work for us, the way we want it to.

- It helps make our day to day lives more efficient
- reduces costs
- reduces our carbon foot print
- gives more control over our environment

Technology should benefit us, give us more flexibility

today we are happier with and understand technology better
it forms a major part of our everyday lives
using apps, smart devices and the cloud is common practice

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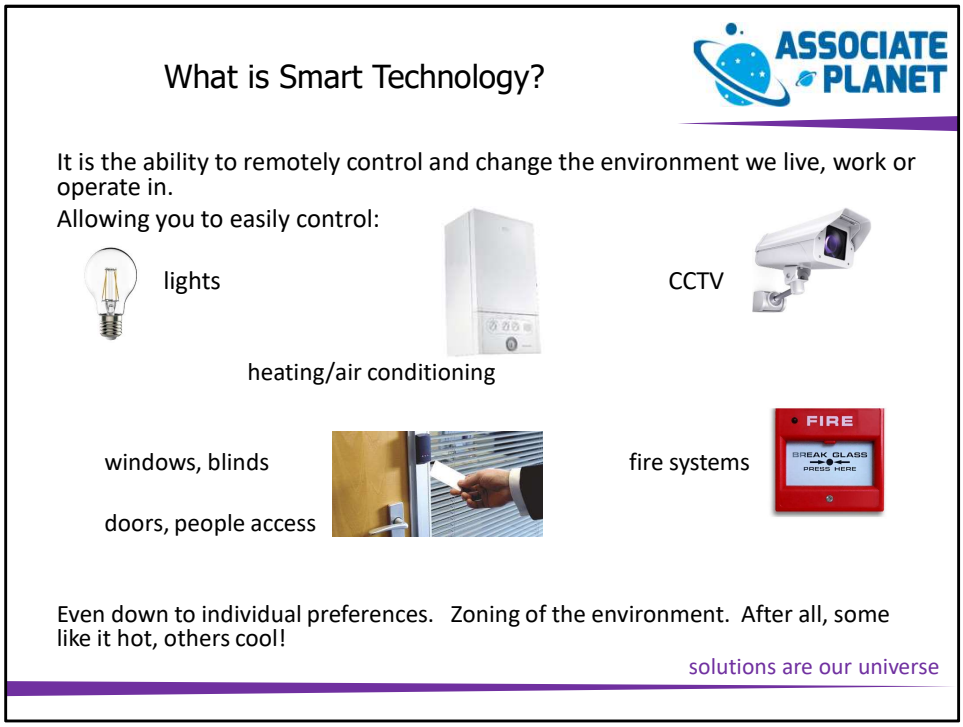
I believe that technology should work for us, the way we want to work or utilise it.
It must be a benefit. Be flexible and take away the mundane, repetitive items
Implemented properly it can make our day to day lives more efficient, reduce costs, carbon foot print.

For example LED lighting uses less power, produces less heat
We want more control over our environment, be it in the home, office and the outside environment.

Look at the discussions on Smart Cities.

We are happier with and understand technology better.
The younger generations have grown up with it
It forms a major part of our everyday lives
Using apps, smart devices and the cloud is common practice



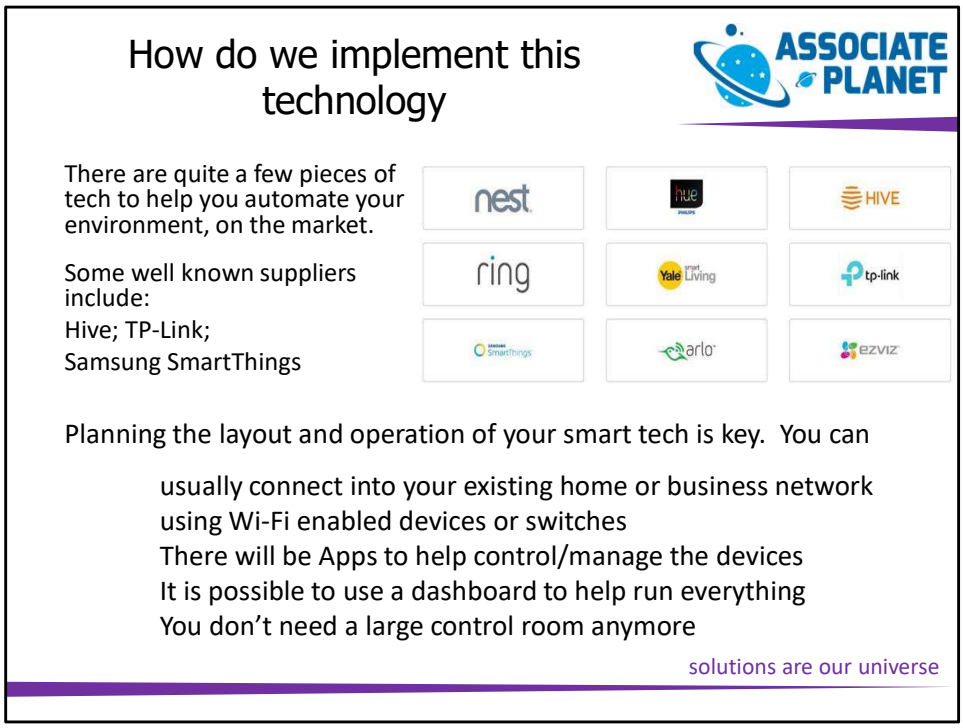
What is smart technology in relation to our home or business?
For me, it is the ability to remotely control and/or change the environment we live, work or operate in.
These days this is called Operational Technology as apposed to IT or Information Technology which simply put deals with data, most of which comes from OT environments.

Smart tech allows us to easily control:
Lighting
CCTV
Heating/Air conditioning
Windows, Blinds, Curtains
Door locks
People access or access control
Fire systems
The security of our environment

Even down to individual preferences using localised or zoned environments.
Some like it hot, others cool

For example, With advances in lighting - LED – we can change how the light looks - daylight, warm, fuzzy.
As well as using less energy, reduced maintenance costs, reduced emissions, last longer.

Detection systems that sense movement, light and dark can replace conventional switches to turn lights off automatically in unoccupied spaces, adjust the heating requirement, restrict access, even turn computers on or off depending on who has the correct access. Some systems can do this just by facial recognition – used in airports.



How do we implement this technology.

On the market there are quite a few pieces of tech to help you automate your environment.

From companies such as Hive, TP-Link, Samsung SmartThings for the home environment
ABB, CISCO, Siemens for business applications
But you can use tech for the home environment in the smaller local office environment

Planning the layout and operation of your smart tech is key:
Connections are usually via your existing home or business network.
Using Wi-Fi enabled devices or switches.
At the local level it is worth separating your home/office network from the network your smart tech is using.
Fairly easily done with additional routers and local area networks setup and dedicated for the purpose.

Another big advantage is that you don't need a large control room anymore to house the computers and control equipment

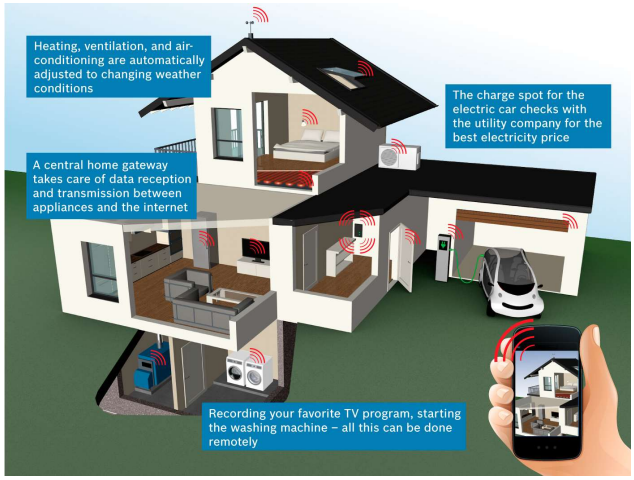
Implementing Smart Tech

The intelligently connected household.

From environmental control to remote control of appliances.

The classic automatic re-ordering fridge!

But security of the environment is key and requires planning when interconnecting your smart devices on your home or office network



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Implementing Smart Tech.

The individual devices connect to an app, which can mean you end up with a variety of apps to control different equipment
So a Dashboard that can integrate everything is needed.
Controlled from your iPad, Smartphone or similar - from anywhere

For large operations these control and monitoring systems are known as Building Management Systems (BMS) – co-ordinates the operation of various systems, control over your building or office space, monitor energy efficiency, reduce energy consumption, assist in complying with legislation etc

Easy wins for the home and the smaller business
There are a variety of Wi-Fi enabled devices and sensors to control lighting, security, occupancy of a particular area which can be controlled from your smart device or set up to be automatic, activate at certain times, only certain people can access, control etc that can easily be added to an existing set up. For example I have added in Wi-Fi switches to lights around our home so they can be controlled remotely, as well as using detection sensors.

challenges

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- The smart environment within the home, office or city is still a very new and a sometimes confusing area of technology
- There is no single standard for integrating all of your smart gadgets so that you can control them from one simple interface or dashboard
- Smart tech is still very disjointed and not easily integrated as a whole
- An integrated dashboard can help co-ordinate the operation of various systems, control over your building or office space, monitor energy efficiency, reduce energy consumption, comply with legislation
- The internet helps us find apps that already exist to enable integrated dashboards, building management systems (BMS) and so forth.

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However, Integrated BMS and Smart tech is still very disjointed. It is not easily integrated with each other, different vendors, suppliers, existing systems.

Smarthome or smartoffice is still a very new and sometimes confusing area of technology, and there's no single standard for integrating all of your smart gadgets so that you can control them from one simple interface or dashboard (app). It is still a very bespoke build.
In a perfect world, you could control everything in your house from one app or interface. There's currently no standard to manage that, but there are multiple ways to attack the problem.

A lot of the time it is a lack of understanding of what the tech can do, a lack of planning about how it will operate in a given environment.
Take street lighting. Do you have it on all the time, add sensors for people detection, how many street lamps do we want on, at what times and so on and so on…….
In the 'old days' we would write specific software to integrate the different sensors, devices, gadgets. Although this hasn't quite gone away, the internet helps us find apps that already exist to enable integrated dashboards. Quite often some one has done it before and we do not want to keep reinventing.

The Benefits

- ✓ Managing the usage of utilities and hence managing their cost
- ✓ Reduce carbon footprint
- ✓ Improvement in sustainability
- ✓ Drives efficiency in technology
- ✓ More control over your environment

For example:
LED lighting is longer lasting, lower energy, reduced maintenance costs, reduced heat emissions, occupancy and daylight saving sensors, improved luminance, all giving a quick return on investment

Detecting systems that sense movement and natural light can replace conventional switches to turn lights off automatically in unoccupied spaces

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The Benefits

So what are the benefits for all this smart technology, which I must add doesn't always have to cost a lot of money to buy and install:

Cost reduction on utilities and potential to monitor what you use and where - eg. Smart Meters

Carbon foot print reduction
Improvement in sustainability
Improve your green credentials
Drives efficiency
More control over your environment
Which Improves the living and working environment
Better security

Questions?

Contact us to discuss how we can support you

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