Contemporary approaches to computer communications

Voice input - Allows a greater use of spoken natural language in their control, making it more intuitive.

Touch screen- Allow for the use of gestures for controlling the device, which is much more intuitive for the average user.

Force feedback - Also known as Haptic feedback, gives the user a physical sense that something has changed within the device via vibrations.

Virtual reality - Taking over as many senses as technologically possible to give the user the sense that they have been transported elsewhere. Simulates 3D through 360 degree headtracking.

Augmented reality - Takes the real world as seen through the devices sensors (accelerometers, cameras etc.) and lays digital information over it for a combination of the two.

Voice input

Advantages	Disadvantages
A much more intuitive experience	Background noise may prevent recognisation
Allows people with physical disabilities to to use some devices	Accents may not be recognised
No training required if implemented into a work setting	Talking for extended periods of time could cause problems

Force feedback

Advantages	Disadvantages
Provides an alternative to loud noises when used as a notification method	Could easily be ignored since it's not hugely invasive

Touch screen

Advantages	Disadvantages
Use of gestures makes it very intuitive	Not very robust-breaks fairly easily
No extra peripherals needed	Loss of accuracy due to selecting things with fingers
Easy to clean unlike traditional keyboard-very hygienic	Large touch screens are a lot more expensive than just a keyboard and mouse

System design validation

Requirements - Does it meet the specification. Specific requirements must be made in order for this to be measurable

Performance - Does it respond fast enough for its use. Normally this will have a requirement of it's own

Robustness - Does it crash frequently or at all. The level required depends on the type of software

Cost - Has the system come in or on budget. Systems that are more expensive than predicted are rarely seen as successful

Usability - Is it usable by the end user. This depends on the skill levels of the users and the nature of the solution

System design validation is the process of testing carried out during a systems life cycle. It occurs before implementation and ensures the system works as intended. If an issue is found the design will be updated and a new or adapted prototype will be built.