# COMMUNICATION THEORY (AI)

# FALL 2021

# MODULE ONE: CONCLUDING DEBATE

# THE SMARTNESS MANDATE

# Does smart technology make us smarter? Is it more efficient? How smart are smart phones, homes and cities? What are the benefits/shortcomings of adopting smart technologies for domestic and civic use?

There is little consensus about the ‘smartness’ of smart technology, at least as far as the benefits/risks balance is concerned. Where its supporters promote the use of this technology for efficiency and safety (used in cities to regulate traffic flow and to monitor and manage populations and services), environmental protections (monitoring and controlling energy use), and to drive economic growth (enabling more efficient production), critics argue that its costs and the requirement of network connectivity reproduces social and urban inequities, and that its use in domestic and wearable technologies puts its user’s privacy at risk, exponentially multiplying opportunities for data collection and other forms of surveillance. Some critics go so far as to say that smart technologies only offer short-term solutions for long-term problems - that their intelligence is a ruse.

Science historian, Orit Halpern understands ‘smart technology’ as an outgrowth of what she calls the “smartness mandate”: a “concept and set of practices that emerged from the coupling of logics and techniques from multiple fields (ecology, computer science, policy, etc.)” at the turn of the millennium, alongside the growth in interconnectivity between humans and machines, and argues that it’s smartness is not reasoned reflection but ‘crowdsourced logic’ - the outcome of the algorithmic manipulation of billions of traces left by thousands, millions, or even billions of individual” smart device users, it is the end product of “real time adaptive exchanges among users, environments, and machines” (Halpern et. al. 112).

Our debate will consider the problems and possibilities of smart phones, smart homes and smart cities. Please read the following definitions and related articles and come to class prepared to explain, illustrate and argue both for and against smart technologies.

**Smart phones** - <https://en.wikipedia.org/wiki/Smartphone>

A **smartphone** is a [portable device](https://en.wikipedia.org/wiki/Mobile_device) that combines [mobile telephone](https://en.wikipedia.org/wiki/Mobile_phone) and [computing](https://en.wikipedia.org/wiki/Mobile_computing) functions into one unit. They are distinguished from [feature phones](https://en.wikipedia.org/wiki/Feature_phone) by their stronger hardware capabilities and extensive [mobile operating systems](https://en.wikipedia.org/wiki/Mobile_operating_system), which facilitate wider [software](https://en.wikipedia.org/wiki/Application_software), [internet](https://en.wikipedia.org/wiki/Internet) (including [web browsing](https://en.wikipedia.org/wiki/Web_browsing) over [mobile broadband](https://en.wikipedia.org/wiki/Mobile_broadband)), and [multimedia](https://en.wikipedia.org/wiki/Multimedia) functionality (including music, video, [cameras](https://en.wikipedia.org/wiki/Camera_phone), and [gaming](https://en.wikipedia.org/wiki/Mobile_gaming)), alongside core phone functions such as [voice calls](https://en.wikipedia.org/wiki/Telephone_call) and [text messaging](https://en.wikipedia.org/wiki/Text_messaging). Smartphones typically contain a number of [metal–oxide–semiconductor](https://en.wikipedia.org/wiki/Metal%E2%80%93oxide%E2%80%93semiconductor) (MOS) [integrated circuit](https://en.wikipedia.org/wiki/Integrated_circuit) (IC) chips, include various [sensors](https://en.wikipedia.org/wiki/Sensor) that can be leveraged by pre-included and third-party software (such as a [magnetometer](https://en.wikipedia.org/wiki/Magnetometer), [proximity sensors](https://en.wikipedia.org/wiki/Proximity_sensor), [barometer](https://en.wikipedia.org/wiki/Barometer), [gyroscope](https://en.wikipedia.org/wiki/Gyroscope), [accelerometer](https://en.wikipedia.org/wiki/Accelerometer) and [more](https://en.wikipedia.org/wiki/Smartphone#Sensors)), and support [wireless](https://en.wikipedia.org/wiki/Wireless) communications protocols (such as [Bluetooth](https://en.wikipedia.org/wiki/Bluetooth), [Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi), or [satellite navigation](https://en.wikipedia.org/wiki/Satellite_navigation)).

**Smart Home -** <https://www.netlingo.com/word/smart-home.php>

a.k.a. digital lifestyle, smart home devices

In general a "smart home" refers to a house, apartment, or neighborhood that is equipped with some combination of a [broadband](https://www.netlingo.com/word/broadband.php) connection, [fiber-optic cables](https://www.netlingo.com/word/fiber-optic-cable.php), and a [wireless](https://www.netlingo.com/word/wireless.php) [network](https://www.netlingo.com/word/network.php). The network can ferry [data](https://www.netlingo.com/word/data.php) and [video](https://www.netlingo.com/word/video.php) signals around a home through phone and power lines and over radio frequencies, allowing the owner to check on it via the Internet (even from work or while out of town). Everything from the oven to the air conditioner to the security alarm can be controlled with a universal remote control device and a TV screen or touchscreen, or a voice-enabled smart device (like Alexa). Using a menu on the display, the owner can set the room temperature or use a remote camera to see who is at the front door.

Other examples of smart home monitoring devices include the following: a wireless on/off power [sensor](https://www.netlingo.com/word/sensor.php) to monitor the flow of electricity to critical machines and appliances; a temperature sensor installed to monitor anything from a child's room to a food storage container; an acoustic sensor that alerts you to sounds of breaking glass or alarms elsewhere in the house; a water sensor installed to avoid water damage from leaky pipes or broken hoses; and no smart home would be complete without a door and window sensor that notifies you of break-ins. Companies that provide smart-home installation say it is quick, affordable, [scaleable](https://www.netlingo.com/word/scaleable-or-scalability.php" \t "_parent), and not dependent on additional wiring (because it is either wireless ([WAP](https://www.netlingo.com/word/wap.php)) or can be implemented on existing wires, such as [CAT5](https://www.netlingo.com/word/CAT5.php) or [coaxial cable](https://www.netlingo.com/word/coaxial-cable.php)).

The notion of a "digital lifestyle" refers to the everyday habit of using digital music, video, and photos and moving it between computers, TVs, and handheld devices.

See also : [everyware](https://www.netlingo.com/word/everyware.php" \t "_parent)  [wired community](https://www.netlingo.com/word/wired-community.php)  [digital entertainment](https://www.netlingo.com/word/digital-entertainment.php)  [infotainment](https://www.netlingo.com/word/infotainment.php)  [Internet of Things](https://www.netlingo.com/word/internet-of-things.php)

**Smart Cities** - <https://en.wikipedia.org/wiki/Smart_city>

A **smart city** is an [urban area](https://en.wikipedia.org/wiki/Urban_area) that uses different types of electronic methods and sensors to [collect data](https://en.wikipedia.org/wiki/Data_collection). Insights gained from that [data](https://en.wikipedia.org/wiki/Data) are used to manage assets, resources and services efficiently; in return, that data is used to improve the operations across the city. This includes data collected from citizens, devices, buildings and assets that is then processed and analyzed to monitor and manage traffic and transportation systems, [power plants](https://en.wikipedia.org/wiki/Power_station), utilities, water supply networks, [waste](https://en.wikipedia.org/wiki/Waste_management), [crime detection](https://en.wikipedia.org/wiki/Criminal_investigation),[[1]](https://en.wikipedia.org/wiki/Smart_city#cite_note-1) [information systems](https://en.wikipedia.org/wiki/Information_system), schools, libraries, hospitals, and other community services.[[2]](https://en.wikipedia.org/wiki/Smart_city#cite_note-2)[[3]](https://en.wikipedia.org/wiki/Smart_city#cite_note-academia.edu-3)

The smart city concept integrates [information and communication technology](https://en.wikipedia.org/wiki/Information_and_communication_technology) (ICT), and various physical devices connected to the IoT ([Internet of things](https://en.wikipedia.org/wiki/Internet_of_things)) network to optimize the efficiency of city operations and services and connect to citizens.[[4]](https://en.wikipedia.org/wiki/Smart_city#cite_note-4)[[5]](https://en.wikipedia.org/wiki/Smart_city#cite_note-5) Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in the city and how the city is evolving. ICT is used to enhance quality, performance and interactivity of urban services, to [reduce costs](https://en.wikipedia.org/wiki/Cost_reduction) and [resource consumption](https://en.wikipedia.org/wiki/Resource_consumption) and to increase contact between citizens and government.[[6]](https://en.wikipedia.org/wiki/Smart_city#cite_note-6) Smart city applications are developed to manage urban flows and allow for real-time responses.[[7]](https://en.wikipedia.org/wiki/Smart_city#cite_note-Komninos_ch-7) A smart city may therefore be more prepared to respond to challenges than one with a simple "transactional" relationship with its citizens.[[8]](https://en.wikipedia.org/wiki/Smart_city#cite_note-8)[[9]](https://en.wikipedia.org/wiki/Smart_city#cite_note-9) Yet, the term itself remains unclear to its specifics and therefore, open to many interpretations.[[10]](https://en.wikipedia.org/wiki/Smart_city#cite_note-10)