

Smart homes and energy

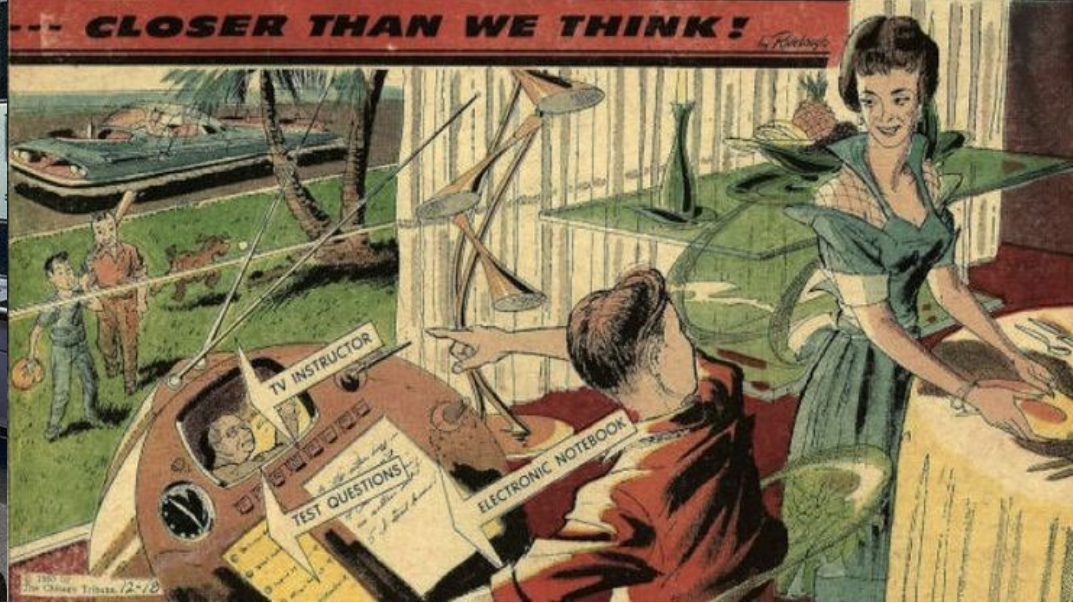
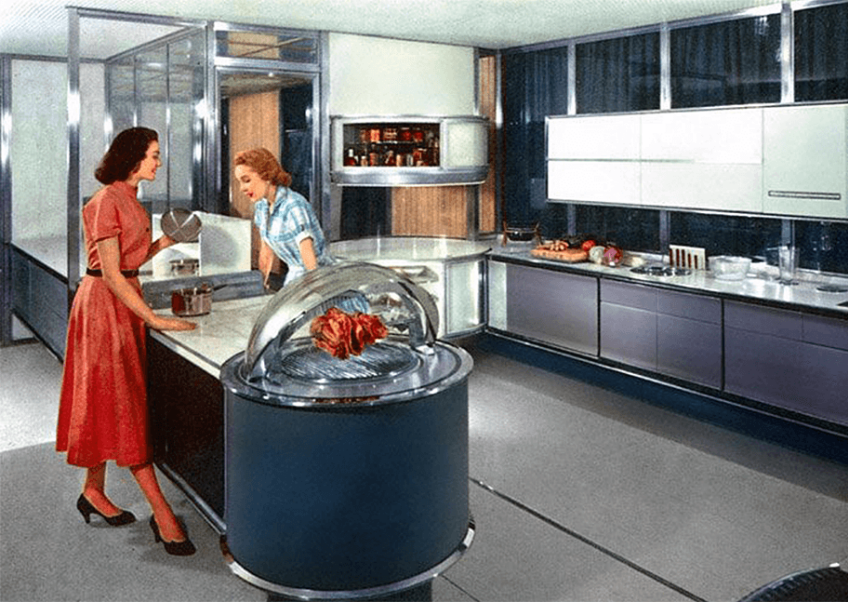
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Smart homes: Closer than we think (since 1950...)



A smart home is...

‘living with automation technologies or appliances’ (Strengers and Nicholls 2018, p. 72);

smart technology is ‘AI, internet-connected, or robotic things’ (Strengers and Kennedy 2020)



References: Strengers, Y., & Kennedy, J. (2020). *The smart wife*. MIT Press.
Strengers, Y., & Nicholls, L. (2018). Aesthetic pleasures and gendered tech-work in the 21st-century smart home. *Media International Australia*, 166(1), 70–80. <https://doi.org/10.1177/1329878X17737661>

https://www.ergon.com.au/__data/assets/image/0006/832479/HEMS1-600x600.png

Normative smart home



- Heterosexual nuclear family
- Owner occupiers
- Normative coupledness

- Prioritization of normative models effects the way we design, use and occupy space (Wilkinson 2014, 2452).

Other tenure and household formation

- Could renters and those living in share houses have smart homes?
- smaller mobile and self-installable smart systems
- Smart platforms and apps to organise and manage household



Source: <https://www.domain.com.au/news/likeminded-housemates-share-more-than-just-a-roof-over-their-heads-20160606-gpc9t9/>

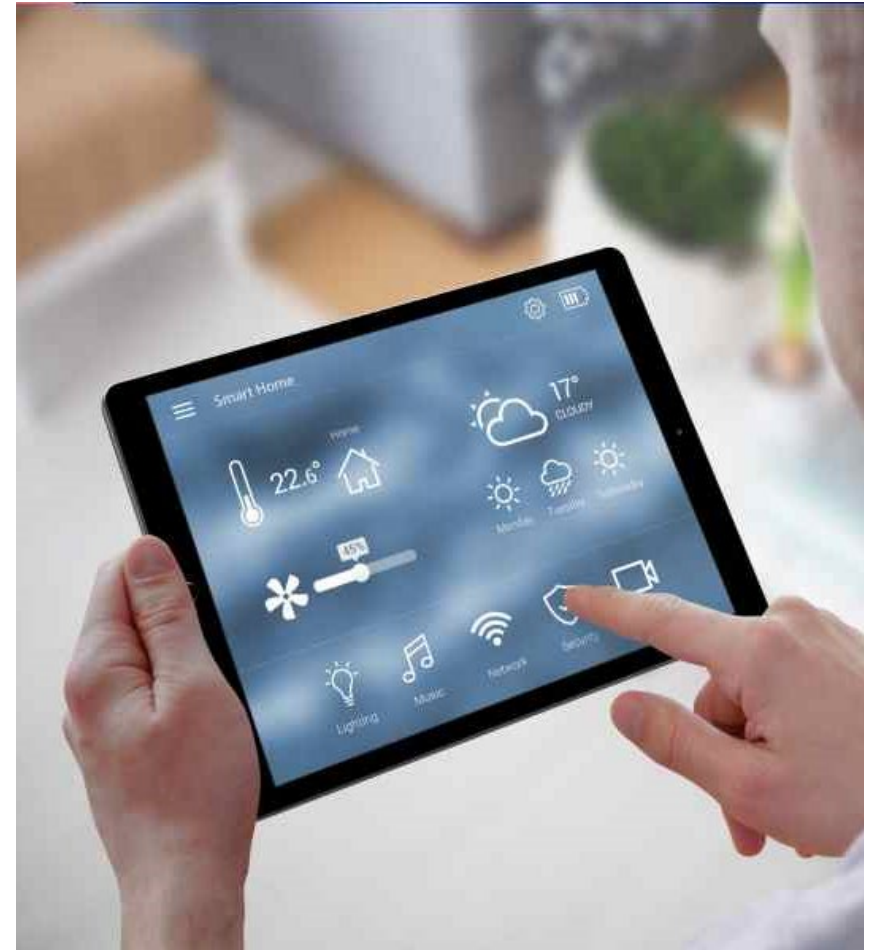
References: Strengers, Y., Kennedy, J. N., Arcari, L., & P. (2018). *The 3Ps: protection, productivity and pleasure for Australian smart home early adopters*. Centre for Urban Research and Digital Ethnography Research Centre, RMIT University. ;
Maalsen (2022) 'We're the cheap smart home': the actually existing smart home as rented and shared, *Social & Cultural Geography*, DOI: [10.1080/14649365.2022.2065693](https://doi.org/10.1080/14649365.2022.2065693)



Image Source: Janie Barrett, <https://www.smh.com.au/money/a-manifesto-for-generation-rent-20170220-gugyts.html>

Challenges to adopting the smart home

- Fit with lifestyle – otherwise it is perceived to add hassle to daily life
- Administration: the expertise and know how required to operate and maintain the systems
- Loss of control and apathy
- Interoperability – that devices can easily integrate and speak to each other
- Reliability
- Privacy and security
- Smart technology as divisive, exclusive, or irrelevant
- Cost



Ref: Balta-Oskan, N., Davidson, R., Bicket, M. & Whitmarsh, L. (2013) Social barriers to the adoption of smart homes, *Energy Policy*, 63, pp. 363–374.

Image source: <https://www.smart-energy.com/regional-news/europe-uk/sense-debuts-innovative-home-energy-monitoring-system-at-enlit-europe/>

Smart home and energy

- convergence of energy efficient appliances and real-time access to energy usage data, facilitated by a network of sensors and computers
- Increased visibility of energy and cost information through interactive displays enable consumers to proactively monitor and manage energy use in ways that are convenient, cost-effective, and environmentally beneficial.



Ref: Balta-Oskan, N., Davidson, R., Bicket, M. & Whitmarsh, L. (2013) Social barriers to the adoption of smart homes, *Energy Policy*, 63, pp. 363–374.

Image source: https://www.amazon.com.au/Eve-Energy-Built-Schedules-Bluetooth/dp/B0B3MS48X3/ref=asc_df_B0B3MS48X3/?tag=googleshopdsk-22&linkCode=df0&hvadid=463552917352&hvpos=&hvnetw=g&hvrnd=1572946029073230630&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmidl=&hvlvcint=&hvlvcphy=9112649&hvtargid=pla-1681016988461&pssc=1

Smart home and energy

- Technologies get backgrounded and are not used optimally
- The efficiency gains are only achieved if the systems are used optimally and as designed.
- Technological and social issue



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Smart home and energy

- Smart home systems cost money and for vulnerable households the pay off is probably not there in terms of justifying the expense
- Smart homes do have the capacity to be more energy efficient and consume less resources – but this is dependent on them being used optimally and maintained.

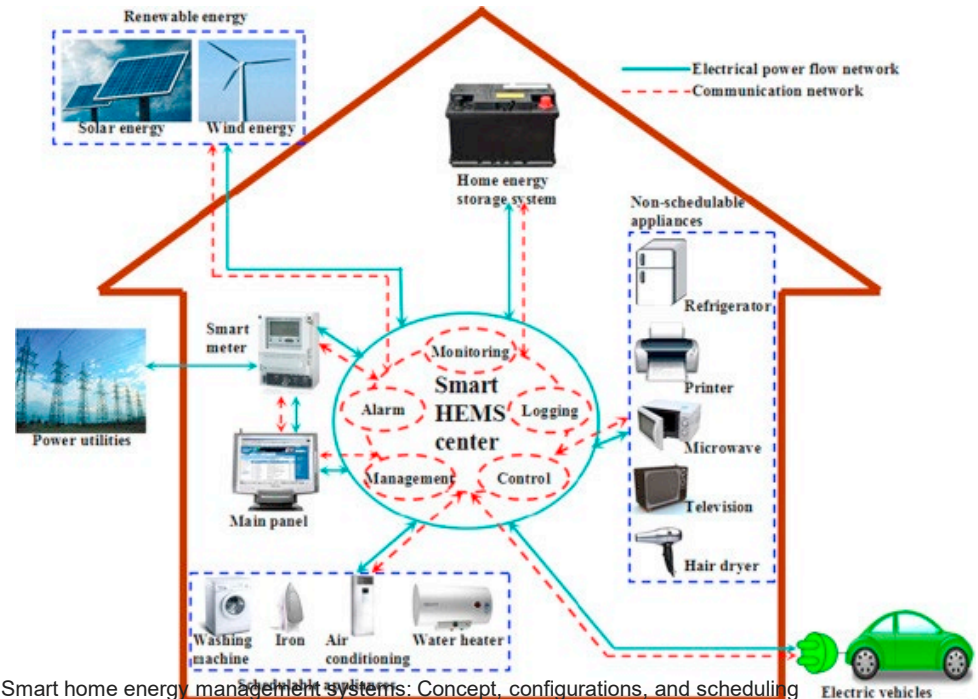


Image sources: Zhou, B.; Li, W.; Chan, K.W.; Cao, Y.; Kuang, Y.; Liu, X.; Wang, X. Smart home energy management systems: Concept, configurations, and scheduling strategies. *Renew. Sustain. Energy Rev.* **2016**, *61*, 30–40. <https://www.allion.com/aiot/smart-energy-management-system/>

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