

Horizon Scanning Series

The Internet of Things

Internet of Things across social and community services, the GLAM sector, creative sector and philanthropy

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Suggested Citation

Reid Jones, J (2019). Energy Consumption and Novel Social Experiences of IoT. Input paper for the Horizon Scanning Project “The Internet of Things” on behalf of the Australian Council of Learned Academies, www.acola.org.

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There is scope for improved connectivity and data collection of vulnerable people, particularly those who live in isolation. I.e. Understanding how often washing machines are being used, food is being purchased/consumed, whether contacts are being made on the phone etc. Isolated, at-risk, low SES individuals, particularly the elderly, could benefit from an IoT environment and algorithm that ensures that they are regularly checked up on and provided with the resources that they need.

Australia could lead through the equitable, targeted distribution of such technologies, including ensuring ease-of-use and relevant integration into the lives of the most vulnerable. This can allow for more targeted, timely and relevant service needs being met to at-risk families and individuals. Mobilising services and monitoring impacts on communities of significant events (weather, traffic, noise, availability of services etc) if used correctly, could enable improved impact solutions and outcomes in those communities.

Distinctions need to be made between the public-owned IoT asset opportunities (roads, power infrastructure, medical/emergency service information and infrastructure) and privately owned, consumer facing IoT (IoT Fridges, Smart Speakers, Cars). In the roll out or integration of public/private IoT widgets, regulation about the integration of public/private connectivity needs to be thorough and clear. The stated aims of integration/data collection need to be explicit. Opt In/Opt out options for the various IoT widgets will need to be simple to understand and unambiguous as the low SES and at-risk individuals in the community who may benefit the most from the integration are also the most at-risk of having their data used maliciously or in an exploitative manner.

Initially, explicit warnings and explanations of what data is collected, how it's collected, and how it would be integrated into the broader IoT network would be required. For instance: Opting in to follow up calls from social agencies as a result of information received from a fridge would have to be explained to those who might be likely to both benefit from the opportunity and not fully understand the how/what/why of the technology.

In a market-based service economy the challenge for regional services is when data is used to show that certain essential, or peri-essential services and infrastructure developments are not viable, rather than using the data to improve the economy of delivering those services. As a community it is important that we decide on the outcomes that we want for both city and regional citizens and strive to use the IoT opportunities to deliver them. Things like connectivity, mobility, healthcare, food, access and human interactions need to be front of mind as we use IoT to enhance these outcomes rather than abdicate responsibility for human interaction and care to data driven machines. The prohibitive cost of cutting edge technology in itself might make it a challenging prospect to integrate IoT into the lives of the most vulnerable community members who are of limited means, a cost/benefit analysis of the data gained Vs Cost for subsidisation may be required for certain IoT widgets in limited resource households.

There are considerable opportunities in the streamlining of the delivery and distribution of goods and services across cities and regions through improved data analytics, algorithm development and data collection through the integration of IoT data. Efficiencies in the delivery of services, transport, logistics, communication and monitoring opportunities can all lead to reduced cost, and more efficient delivery of assistance and emergency services to communities and individuals in need. The challenge is evaluating the cost of getting the IoT widgets to the most vulnerable, resource poor areas and not creating greater inequality by improving services only to resource rich areas.

With improved connectivity between cities and regions, VR, IoT and computer/screen based learning opportunities, there is a significant chance to change the way the GLAM sector operates. These virtual opportunities and highly connected networks of GLAM organisations, along with improved mobile internet services and regional internet access means that online access is now possible from communities that are too remote to easily and economically head into these institutions in person. Furthermore, once we have a more integrated mixed-use model of GLAM institutions (online/offline use), then the location of the physical spaces becomes less critical and the regions may also see an opportunity for uptake of region/format specific institutions being built in their communities. This would allow for improved combinations of online/in-person interactions with GLAM institutions, lower the cost to build new GLAM institutions in regional areas and improve the employment opportunities in the sector in regional communities.

Improved impact measurement metrics need to be established in order for philanthropic work to be positively impacted by the IoT and improved data analytics/collection. There is considerable opportunity to better co-ordinate services and interventions, both on a community wide and an individual level, however the current philanthropic environment is dominated by a 'what's the best single intervention' focus, when it needs a significant shift to 'what is the best complete outcome for the person/community in need' focus. Improvements in IoT can then work to co-ordinate interventions in order to achieve these complete outcomes, ensuring people are housed, employed, educated, connected and of good mental health. As the capacity for data collection increases in the space of community development, the capacity to infer, or gather the wrong information also greatly increases, so the paradigm of philanthropy will need significant changes before it is able to embrace and utilise the opportunities presented by the IoT.

There are currently no universally agreed upon outcomes and pathways for support in the space of philanthropy. There is very little distinction made when discussing 'philanthropy' more generally, although in practice it could be going towards the arts, religious outcomes, health care or other social benefits. Vested interest groups will need to work on improved co-ordination and co-operation, or we could see early adopters or data owners create monopolies in various spaces off the back of an extreme technological advantage. We do not want to see one particular cause or intervention receive a disproportionate amount of resource allocation at the expense of other highly relevant, essential interventions and services. There is also a challenge in community development to allow for long-term work to occur in order to prevent confusion between 'lots of data' and 'long term data', the development of infants to 10-year-olds still continues to take 10 years, despite the fact that we may be picking up thousands more data points about the infant per week as a result of these integrations. We cannot get carried away with iterative short-term data cycles with human and community development programs, as they take a long time to work, and require long term support. A consideration for government and government agencies is how to streamline and maintain long data sets across administration changes and election periods.

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