

Horizon Scanning Series

The Internet of Things

An Indigenous Viewpoint on the Internet of Things

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Suggested Citation

Yunkaporta, T (2019). An Indigenous Viewpoint on the Internet of Things. 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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Submission in response to the Expert Working Group evaluating the IoT in Australia, commissioned by Australia's Chief Scientist at the request of the National Science and Technology Council.

OECD definition of the Internet of Things (IoT): an ecosystem in which applications and services are driven by data collected from devices that sense and interface with the physical world. In the Internet of Things, devices and objects have communication connectivity, either a direct connection to the internet or mediated through local or wide area networks.

From an Indigenous perspective, the inevitable rollout of the Internet of Things (IoT) presents a number of concerns. These involve several presuppositions at the heart of this massive project, including the irrelevance of consent and sovereignty, the faith in support programs to offset economic marginalisation, the belief in infinite growth from finite resources, the assumption that a few sustainability mechanisms will offset environmental damage, the conceptual alignment of digital systems with ecosystems, the invisibility of the destruction of actual ecosystems under this development model, and the confidence that analysis and goal-setting for a decade or two ahead represents long-term thinking and planning.

The impacts of IoT on the Indigenous community will be massive and complex, in many cases exacerbating pre-existing issues. Data sovereignty – the ability to retain control over our data and also the digitised collection and storage of our traditional knowledge, cultures and languages – is an issue without the potential of resolution under a globalised, corporatized IoT. While many Indigenous communities are finding ways under the current system to protect their data sovereignty, the IoT will eradicate these actions through the proliferation of devices that cannot be chosen, used or controlled by community members.

The recent global shockwaves around big data surveillance, data mining and public manipulation cannot be reduced to a statement like, “there is currently a lack of clarity around data ownership, leading to confusion about collection and distribution,” followed by vague statements that regulation “may” be needed, when it has become clear that the major players in the data industry cannot be made accountable to government regulations anyway. From an Indigenous perspective on these issues, the global context provides us with a bleak view of the installation of IoT in our communities, particularly with regards to Indigenous sovereignty and self-determination. Like the rest of the public, we have not consented to the roll-out of this system and are not being given enough notice to prepare for it or resist it.

“User acceptance” is the main problem being considered in evaluations of this situation, as a barrier to achieving the “cost-cutting benefits” that will accrue to better “support governments and industry”, rather than consideration being given to the human populations who are noticeably not described as end users. This is because they are not the users, but the used, as their data and resources are extracted for government and corporate benefit in the control of citizen, worker and consumer behaviour. So of course no meaningful provisions are made for communities who may choose to opt out or who will be denied access by distance, for whom any way of living or working outside of the system will become increasingly impossible, eventually resulting in mass migrations to ghettos both urban and digital. The weaponised surveillance and control mechanisms currently deployed to eradicate unceded Indigenous sovereignty will be multiplied exponentially with the advent of IoT.

The problem of the digital marginalisation and dispossession of “diverse” groups should not be reduced to an issue of “digital literacy” with the vague solution proposed that, “targeted support for culturally and linguistically diverse groups as well as publicly funded education may help support public adoption and trust in the system.” There is no discrepancy or deficiency in our human communities that needs to be corrected – the problem is structural and lies with the proposed system that requires our compliance with our own marginalisation or assimilation in order for it to function. Welfare in the form of support programs to modify our behaviour and up-skill us for greater economic participation is not working, has never worked and will not work in the future. It has also categorically failed to manufacture consent for the extractive industries and economies that continue to destroy Indigenous lands and communities, and which now threaten to become hyper-inflated with the advent of IoT.

The threat to Indigenous land is exacerbated when the rhetoric of those proposing (no, announcing) the roll-out of IoT reveals a complete lack of understanding of the land-based systems we all inhabit. The IoT itself is described as a digital “ecosystem” although it bears very little resemblance to an ecosystem as Indigenous people and even biologists understand it. Excitement is expressed about “the first real-time collection and analysis of information of all aspects of the physical world” while a complete misunderstanding of the physical world, and even physics itself, is evident. The maths just does not work in support of assertions that aggregate efficiencies of resource use in the IoT will offset the massive growth in data and the unimaginable infrastructure to support that, along with the exponential increase in resource extraction and toxic refining processes that will be needed to make all this possible. Not to mention the exorbitant amounts of fossil fuel based energy that will be required to power and cool these systems.

Environmental impacts of IoT are only considered in terms of disposal of obsolescent devices as they are inevitably replaced by next gen and next gen and next gen devices into infinity. Even this tiny part of the environmental impact is inadequately addressed by the response that, “The potential environmental impacts from the physical components of the IoT may require regulatory considerations or requirements for appropriate management of IoT waste.” In light of numbers approximating 50 billion devices in use in 2020, with production expected to skyrocket by over 4000 percent every year following IoT rollout, all the “regulatory considerations” in the world won’t solve the problem of where to store these toxic devices when they are discarded, or the energy and computing infrastructure that will also need to be constantly replaced or updated.

These devices require the use of rare earth metals, which are called “rare” for a reason. Once again, the maths doesn’t work to support these projections of exponential growth in IoT – there are simply not enough reserves available to support this kind of development indefinitely. Additionally, the mining and refining of rare earth metals is the most toxic process in existence, producing tons of radioactive waste that needs to be stored for millennia. So far, containment protocols for this kind of long-term radio-active waste storage have not been developed. While we may be able to plan for a few decades of smart city expansionism, unless our plans also contain long-term systems for waste storage over millennia then we are facing the death of the land that sustains our existence.

Sand is also needed in this project, for the manufacture of both devices and infrastructure. Terrestrial sources of this sand are almost exhausted and are now being dredged from the sea bed, and not in small quantities. Sand is mined more than any other resource on the planet and when holes are left in the seabed coastlines erode and crumble into them. Combine this with the effects of global warming and rising sea levels resulting from the fossil fuel energy required to power the IoT, and we have an insurmountable problem. Most Australian cities and populations are placed on the

coastline. We can make these cities as smart as we like, but it won't help if they all end up at the bottom of the ocean. The idea that, "there is the potential to embed sustainable thinking in our decision making, without sacrificing profits for industry" is just not feasible if we are thinking beyond a few decades into the future. Statements like this, as well as statements on how to "leverage this data, while balancing the privacy rights of citizens" are inherently contradictory and disingenuous.

I am acutely aware that these considerations are considered to be "externalities" by the corporate and government entities conducting these belated consultations while rolling out their plans. I am also aware that an Indigenous submission is intended for the Social Impact section only, limited to questions of different cultural needs, challenges and opportunities for our community, and what culturally appropriate support is needed for Indigenous uptake of IoT. However, an Indigenous perspective is necessarily complex, contextual and land-based, and therefore cannot remain within those boundaries. There are urgent crises resulting from this rapid and compulsory development that threaten our existence and the existence of all living things. An Indigenous perspective on these matters cannot just be about how to precipitate these crises with cultural sensitivity – our perspective as always must be driven by our custodial role, which includes making sure everyone and everything can continue to exist.