Participatory Digital Futures

How digital transformation can be made good for all.

by Mark Findlay and Sharanya Shanmugam

Digital transformation through the widespread use of Artificial Intelligence (AI)-assisted technology and big data usage is assumed to usher in socio-economic benefits.[1] Notions of 'digital readiness' speak to the inevitability of a universalised digital transformation. But the common approach of exporting digital capacities across societies and markets—*digital transformation is good for you all*—is top-down and paternalist. It also conjures the image of some common/average citizen or worker being able and willing to transform into a digitally competent economic unit. Moreover, such a top-down approach to digital transformation can ignore, and even underplay, important demographic differences across communities when it comes to related issues such as digital literacy, digital familiarity, digital readiness, access to technology, and consent for creating digital dependencies. These differences sometimes grow from structural vulnerabilities such as advanced age, subservient positions in organisations/markets, low levels of education, and socio-economic vulnerabilities like poverty, restricted access to technical opportunities, and the inability to access knowledge. Above all, certain segments of a community, already disadvantaged or less able to manage change, could be further measurably disadvantaged by a universal digital push.

In this article, through vignettes from the UK and Singapore's experience, we highlight how digital transformation can be made more participatory for users affected by digital initiatives. In the process, we introduce the idea of Living Digital Transformation (LDT) and how a more bottom-up and user-centric alternative, including those from vulnerable communities, could improve the benefits from digital transformation, as well as the design and implementation process.

TOP-DOWN RISKS AND VULNERABLE COMMUNITIES: THE UK EXPERIENCE

The implementation of the Universal Credit Scheme, a digital welfare service in the UK, illustrates the problems with a universalist top-down approach to transformation.[2] The welfare scheme was created to address the larger problem of a perceived lack of incentive among welfare claimants to find work and improve their financial well-being.

Although there was a digital portal for claimants to report their employment status to receive payments, and relieve job-centre advisors from these administrative regulatory tasks, the individual situation of claimants other than their earnings was not taken into consideration. It adopted a gender- and class-neutral perspective that purportedly neutralises, rather than identifies and compensates for differences between users and their vulnerabilities.

The consequences are anything but anti-discriminatory. Because the portal assessed claimants based on a monthly pay requirement, those who were paid weekly or experienced inconsistent pay periods had difficulties matching their meagre earnings with the availability of benefits to meet their pressing daily financial needs. As a case in point, women are more likely to engage in part-time work and thus inadvertently suffer a disadvantage under this scheme. The scheme's single payment model that consolidated six benefits into one for convenience also received backlash for devastating female claimants' financial autonomy, as it combines payments (such as for housing and childcare) that used to be separated, thereby giving authority to the primary account holder who often tends to be the male in the household. This grants power to the man in abusive domestic relationships to determine how welfare funds are spent.

The scheme also unwittingly established a general male-dominated understanding of labour, not recognising unpaid domestic work and care duties that society benefits from, which are mainly carried out by women. The failure to locate structural vulnerabilities within the design and implementation of the automated welfare scheme exacerbates the social costs of patriarchy and female dependency, and diminishes the potential of women contributing to the workforce and eventually getting out of the welfare trap.

> Co-designing approaches that include civil society members can provide the perspectives, values, and situated knowledge of the most vulnerable communities, challenging existing social hierarchies and avoiding exploitative practices against them.

A lesson from the above example shows that public sector definitions of user-centred design draw inspiration from the private sector with its original usage for commercial products, which does not have to consider the human factor beyond the desires of a consumer market.[3] In customer consciousness (where customers are assumed to be willing participants in a uniform market trade), the private sector does not have to deal with a diversity of perspectives, whereas in the public sector, policymakers should consider if they want digital transformation to take root in sustainable community experiences. In this example of digital welfare services attempting to provide a universal design and common implementation platform, decision-makers tend to visualise the 'user' in neutral terms to allow for inclusivity, and do not sufficiently consider the diversity of welfare recipients or the vulnerabilities of lower-class and female beneficiaries, who are often more financially disadvantaged than their male counterparts in commercial arrangements.[4]

WELFARE BONUS DIGITAL DISTRIBUTION AND INCLUSION OF LESS DIGITALLY-SAVVY: THE SINGAPORE EXAMPLE

Whereas the UK's Universal Credit Scheme example failed to recognise the impact of digital transformation on pre-existing vulnerable populations and thereby further discriminated against these groups, the Singapore government adopted a more considerate approach by identifying structural vulnerabilities and engaging vulnerable recipients, in this case the elderly, as active agents in the design and implementation of its digital welfare schemes.

The Community Development Council (CDC) vouchers scheme, first launched in June 2020, was intended to help 400,000 lower-income Singaporean households with their daily expenses.[5] Beneficiaries had to collect physical vouchers from designated community centres (CCs). The scheme had the dual goals of helping households cope with the rising cost of living as a result of inflation, while boosting the earnings of heartland merchants. However, the subsequent decision to shift to digital vouchers to increase user convenience and relieve merchants of the hassle of collating and tracking paper vouchers generated concerns that the elderly and other less digitally literate groups would be excluded from the welfare scheme.

Senior citizens have expressed their unpreparedness for the rapid shift towards the mass adoption of digital technologies, predominantly due to their lack of skills to effectively make use of technology.[6] Having to solely rely on others, be it family members or more tech-savvy peers, to navigate this unfamiliar environment driven by the proliferation of smart devices can also be disempowering for them. Some elderly have indicated they would rather spend time queueing at banks to conduct simple transactions than learn to use Internet banking, often due to a fear of getting scammed or making accidental purchases as a result of being unfamiliar with these apps.[7]

Before the switch to digital vouchers, the government engaged Government Technology Agency (GovTech)[8] to understand how it could build a system that both heartland merchants and the digitally less-ready could use confidently. GovTech studied previous government voucher campaigns, such as RedeemSG which is used to redeem National Day Parade tickets every year, to uncover problems cited by previous users.[9] It then prototyped different options for an inclusive voucher system, carried out multiple trials with merchants and residents across age groups and levels of digital savviness,[10] and spoke with grassroots advisors to seek their views on the final prototype. Only then did it decide to use the RedeemSG app for distributing the CDC digital vouchers, thereby demonstrating its efforts to take into account citizens, particularly the most vulnerable, in the design of government digital products.

Furthermore, to ensure that seniors without smartphones or family members to help them claim the vouchers could also benefit from the welfare scheme, the government offered them the option to request for CDC vouchers to be printed at their nearest CC, accommodating seniors' wishes for a non-technical alternative.[11] For seniors keen to adopt the digital option, Silver Generation Ambassadors were situated at the CCs, as well as in selected Residents' Committee centres in areas with a higher concentration of elderly citizens, to help seniors redeem their vouchers. These initiatives were publicised not only on social media, but also via newspaper print ads and digital display panels at lift landings of Housing and Development Board flats, which make up Singapore's public housing, to raise awareness of such support.

PROGRESSING FROM CO-DESIGN TO CO-CREATION

What the Singapore government did is an example of co-design, which involves some extent of collaboration between those who develop a product or process, and those who use or experience it. Simply incorporating morals or principles, such as 'fairness' or 'explainability', top-down into the design process from the outset does not guarantee that the values and perspectives of citizens will be incorporated into the system.[12] Co-designing approaches that include civil society members can provide the perspectives, values, and situated knowledge of the most vulnerable communities, challenging existing social hierarchies and avoiding exploitative practices against them.

Co-creation is the next stage of the participation process. This is where recipient communities have some say about the purpose of technology and data use, thus prioritising different purposes and monitoring the outcomes. It differs from co-design in two specific ways. Firstly, more than collaboration, co-creation starts at the earliest stage of the project's conceptualisation. For AI-assisted technologies, this is when someone posits that digital transformation from pre-existing technologies and processes is beneficial for stakeholders. Secondly, admirable as the integrative intentions of co-design are, it may not build in the requirement that the perspectives from the vulnerable are actioned and accounted for. Co-creation means that the initiation of an AI-assisted technology will not proceed without the validation of vulnerable stakeholders.

Co-creation initiatives are likely to thrive only when there is *citizen trust* in public governance, as trust is the foundation upon which legitimacy rests. Trust in public institutions has plunged to its lowest levels worldwide due to the pandemic and the poor, oftentimes discriminatory, management of the COVID-19 pandemic by various governments. The crisis of citizen trust affects the efficacy of pandemic control measures, and in the long term can diminish citizen participation, compliance with regulations, and support for public policies. Distrust in authorities is likely to be higher in disenfranchised communities, making it especially crucial to engage these groups in co-creation initiatives.

The final important dimension of successful co-creation is the impact of citizen participation. How can citizens be involved in such a way that deliberations among stakeholders actually influence decision-making? Civilian leadership in co-creation initiatives can empower vulnerable communities to exercise authority over public decisions and keep authorities accountable to the partnership's goals. The Chicago Community Policing Program is an example of a successful co-creation initiative that prioritised the active involvement of disadvantaged communities in high-crime neighbourhoods, and promoted a shared responsibility between residents and local police officers for determining local policing priorities and being accountable to them.[13] It was found that deliberative meetings co-facilitated by both the officers and residents led to more innovative and effective problem-solving strategies that built upon the knowledge and experience of these groups, as compared to when residents only attended these meetings as participants. Co-creation initiatives seek to equilibrise the power imbalance between decision-makers and citizens by increasing citizen participation, but the dispersal of power can only be productive if the more powerful stakeholders at the 'centre' remain committed to reducing power asymmetries and being accountable to the less powerful, coordinating and supervising such participatory programmes, and taking responsibility for how these programmes are run.[14] The notion of power dispersal down organisational hierarchies is also crucial when embracing a more inclusive, bottom-up approach to digital transformation. It is with this recognition in mind that we move to explore LDT as a disruptive alternative to more paternalist transformation exercises.

LIVING DIGITAL TRANSFORMATION AS CO-CREATION

LDT emphasises that digital transformation must be human-centric to ensure its sustainability and progressive impact. As data increases exponentially in a digital world, more individuals will demand digital self-determination.[15] Citizen inclusion is imperative if citizens are to trust in the transition to a more digitised life experience. Therefore, when carrying out any digital transformation initiative, there should not be a fixation on digital technology, but rather a focus on the transformation that supports human well-being from the recipient's perspective. *Living* underscores that digital transformation must improve life experience, raise the quality and comfort of work-life, and ensure safe digital life-spaces. In this light, humans lead the transformation, and this transformation is strongly local and grounded in the community.[16]

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As for its downside, digital transformation has consequent ethical implications arising out of depersonalisation, distrust, and disenfranchisement. Where transformation is imposed on recipient communities that feel socially excluded from policy formulation and implementation, distrust accompanies a dissatisfaction with the absence of accountability and transparency.

LDT implementation in a university setting

In the context of a university community, LDT goes beyond mass technological substitution, and instead focuses on the following actions:[17]

- Extension where existing university community practice is enriched with new modes of digital learning, such that the learning experience can be enhanced through more flexible digital tooling driven by student preference, and/or
- Breakthrough, where such practices undergo a radical change.

Distinguishing styles of transformation in this way helps to clarify that such digital tools are not used to create (and completely replace) a physical community or all the organic interactions that arise from lived community spaces (digital or otherwise). Rather, digital spaces offer new terrain that is complementary to human interaction, as well as the space for the development of digital culture. Hence, when we discuss the need for 'digital culture' in higher education, we are not referring to shiny new toys, proctored exams, or a life lived on Zoom. Instead, it is about embedding a culture of collaboration, inclusivity, agility, and openness both in and among educational institutions, so that innovation can flourish in all its forms.[18]

In the university context, co-creation under LDT should include the following considerations:

- LDT should be driven by its digital natives. In other words, it should be driven from the ground up by the entire university ecosystem, fostering a culture and community of responsible innovators.
- LDT is the technological component for creating safe digital spaces to learn and grow. It provides room for learning and knowledge maturity, as well as engagement and openness, thus ensuring no one is excluded.
- LDT is about taming technology within the community. It puts humans at the forefront and in control, implementing responsible AI ethical norms and remedies.
- LDT enhances responsible data access through digital self-determination. It prioritises the protection of data subjects thereby ensuring their agency and autonomy.
- LDT can complement the university mission to prepare students for transiting work futures. It equips learners with digital know-how and skillsets, providing sensitive and suitable pathways for change.
- LDT promotes technology uptake and digitising for aligning university service provision and the communities served. It facilitates ethical digital transformation.

For any transformation process to be meaningful and sustainable, it must receive widespread endorsement from the community that is undertaking, and impacted by, such changes. There is great potential for the executive leadership to align the *living* digital transformation process with the aspirations of the wider university community.

CONCLUDING REFLECTIONS

Whether it is through the onslaught of digitised finance, the automation of customer service using chatbots, or the codification of knowledge through keyword search engines, daily life is increasingly moving to the digital realm, and residents in these digital communities require the skills and predispositions to survive, let alone flourish, in an online world. In this article, we have put forth a few vignettes which demonstrate that the risks posed by ignoring the uniqueness of vulnerable communities in digital transformation have produced discriminatory outcomes, rather than universal benefits.

In turn, we suggest that an emphasis on co-creation and attentiveness to opportunities for extension and breakthrough measures could provide viable alternatives that enliven LDT. We also highlight how such a more bottom-up approach can achieve the inclusive and all-encompassing benefits of digital transformation in diverse recipient communities. 🔲

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