CHILD RIGHTS BY DESIGN: UNBOXING CHILDREN FROM THE CHILD-ONLY DIGITAL CORNER

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Is our Digital World Built for Children?

Digital technologies now mediate most, if not all, aspects of children's lives from learning to lunching, playing, staying connected and building relationships with friends and family. However, the same cannot be said about children's best interests in the design and operation of today's digital environment. On the contrary, research shows that today's digital environment is designed to exploit children's attention (5Rights Foundation, 2021; Dinsmore & Pugh, 2021; Zendle et al., 2020), entice their interests for sales conversion (Radesky et al., 2020a; Radesky et al., 2020b), and commercialise detailed information about their lives, behaviours and social networks (Barassi, 2020; Williamson, 2019; Zuboff, 2019).

How many digital products and services that children use recognise children's rights? To answer this question, we examined 52 products and services children use, including consoles, mobile games, wearables, smart toys, EdTech and digital health services, for their features and stated compliance with existing standards and regulations. We then interviewed 11 experts, ranging from designers, technologists, product managers, information communication technology lawyers and human rights experts, and ran four workshops with additional 16 designers and developers from large to start-up companies to work out how the digital environment can be made respectful of child rights by design.

Marginalised Children in the Digital Environment

Our review of the sampled products and services children use revealed a diverse mix of products and services and patchy compliance with even more fragmented standards and regulations. We found claims of compliance with 25 different standards and regulations. However, the 52 products examined each stated compliance with an

average of just 5.5 standards and regulations. That said, these products and services may be compliant even though the company has not claimed compliance publicly. More importantly, our product compliance review and interviews show that compliance remained restricted to standards and regulations that providers see as having "teeth" – either with expensive penalties or market entry restrictions.

Of these 25 standards and regulations, compliance was mostly claimed with modern slavery legislation (35 out of 52 products stated that compliance), followed by privacy and data protection. 27 out of 52 products and services claimed compliance with data protection (e.g. UK GDPR), 23 referred to privacy frameworks (e.g. COPPA), and 29 stated compliance with cross-border data transfer agreements. Only seven products, offered mainly by global conglomerates, claimed compliance with security standards, such as ISO 27001, ISO 27017 and PCI DSS, despite data processing being central to many of these 52 products and services.

Compliance with non-discrimination requirements is mainly claimed by providers of video-on-demand services and refers primarily to the provision of accessibility features, such as audio description, subtitling or captioning. However, non-discrimination through a child-rights lens extends beyond accessibilities to address the diversity of children's personal and familial circumstances affecting children's digital engagement. Similarly, just seven out of 52 products and services explicitly claimed compliance with product safety standards and consumer protection. In addition, none stated compliance with the United Nations Convention on the Rights of the Child 1989, as explained in the Committee on the Rights of the Child's General Comment 25 on the digital environment (2021).

Reimagining a Child-Right Respecting Digital World
The fragmented and patchy compliance landscape highlights difficulties that digital providers face in designing digital products and services used by children. For many of these products and services, for example, a Smart Speaker, a Smartphone or even games like Fortnite, children are not their intended users. Concurring with our product compliance review, interviews with digital providers indicate that digital providers, particularly start-ups, struggle to navigate the complex and fragmented standards and regulation landscapes and prioritise their resources. In our workshops and interviews, product managers, designers and developers also told us that they struggled to balance business or product objectives, not necessarily and exclusively for commercial gains, with children's best interests. Indeed, the line between harming children's agency or wellbeing and making the digital experience engaging is very fine. The same design techniques, such as interactions and competitions or behavioural nudges, can either enhance or undermine children's agency, creativity and development (Authors, 2021).

Recognising these challenges, we devised a framework for digital providers to design children's rights into their products and services. This framework maps a typical Child Rights Impact Assessment (CRIA) - UN-mandated tool for realising child rights, initially used by states parties (ENOC, 2020) - with a typical product development process abstracted from our interviews and designer workshops, supported by a universally accepted innovation process (Ball, 2022). Taking a child-rights approach, this framework will help digital providers address the hygiene factors (Alshmemri et al.,

2017), such as safety, security and privacy, as well as offering children opportunities for development and growth. Furthermore, by incorporating CRIA into a typical innovation process, designers and developers can better assess and manage the impact of their product and services from their inception and thus navigate tricky design challenges more easily.

Suppose children's rights can be anticipated and embedded into digital products and services likely used by children. In that case, children would not need to be boxed into a child-only digital corner for their own safety. Instead, if a digital world is made child-rights-respecting by design, then children can explore and reap full benefits of what digital technologies have to offer alongside their older counterparts.

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