Why governments should take action to drive well-being in the digital era, and how to do it

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Acknowledgements

We would like to thank the following individuals for offering their time as expert interviewees for this project: Professor Sun Sun Lim (Singapore University of Technology and Design), Mike Robb & Irene Ly (Common Sense Media), Mikael Jensen (D-Seal), Sho Hirayama (Jyukankyo Research Institute Inc.), Professor Thomas Hellmann (Saïd Business School, University of Oxford), Lauren Monks, Katherine Session & Daniel Child (Australia eSafety Commissioner's Office), Dave Wilkes (Innovate UK), and David Halpern (Behavioural Insights Team).

We would also like to thank those who contributed as expert interviewees but wished to remain anonymous.

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Executive summary

Digital technology "offers real and important opportunities for children, such as allowing them to express themselves, acquire information and knowledge, and to socialise with peers."[1] These opportunities, however, come with the risk of harm - for instance, risks related to children's safety and privacy.

Governments around the world are beginning to take a more active role in regulating digital technology service providers. The political objective of these interventions has focused overwhelmingly on reducing harm related to children's use of digital technology. Establishing a minimum level of legal obligations for the protection of children online represents an important first step. However, at the same time, there is an emerging current of thought that highlights the importance of technology in children's lives, the opportunities it holds to support children's broader well-being, and the risks that may result from impediments to access.

It is our hypothesis that while government interventions focused on the protection from harm ('harm-based') are essential, additional targeted interventions could move businesses from a position of "minimum legal requirement" towards a "race to the top", where companies compete on responsible models of innovation. Such an approach would complement a harm-based approach to regulation, and stimulate research and innovation in responsible and rights-based design. Ultimately, it would help create a more sustainable model of digital innovation that prioritises the well-being of children.

In this report, we explore how governments can shape markets to enable both the protection of children and secure their access to the benefits of digital technology for their well-being. We call this a 'market shaping' approach. We consider this approach supplementary to a harm-based approach. We look across industries and sectors to highlight approaches that can complement harm-based interventions. To compile this report we drew from academic and grey literature as well as interviews with 10 experts from diverse backgrounds across public policy, academia, and other interest groups such as consumer groups and NGOs. Our research includes case

[1] OECD. (2022). Companion Document to the OECD Recommendation on Children in the Digital Environment. OECD Publishing, Paris

studies and lessons learned from 6 countries: the UK, the US, Japan, Denmark, Singapore and Australia.

The findings of the research presented in this report will feed into the LEGO Group and UNICEF co-founded programme of work focussed on Responsible Innovation in Technology for Children (RITEC).[2] Any opinions, conclusions or recommendations expressed in this report are those of BIT and do not necessarily reflect the findings of the RITEC project, the views of the LEGO Group, UNICEF or any other RITEC partners.

What is market shaping?

Governments commonly intervene in markets to adopt **harm-based approaches**, for example through bans or setting basic standards. Increasingly we are seeing this in relation to digital products and services that are likely to be accessed by children. This approach offers crucial **protection against the worst outcomes** for consumers and society, and can help to correct for 'market failure', whereby, unregulated markets fail to deliver optimal results for society.[3] For example, where developers of online content fail to take into consideration the impact of their actions on vulnerable individuals and society at large, such as the potential harm from mis- and disinformation.[4]

There are precedents from across industry and countries that show that, under specific conditions, governments, including regulatory bodies, can and should go further than harm-based interventions. They can actively shape markets to empower consumers, enhance transparency, align desired outcomes and encourage market players to improve their products and services over time – a so-called "race to the top". We term this a **market shaping approach**. This approach complements a harm-based approach by introducing tools to encourage companies to aspire to better practice. It allows the government to **achieve wider policy aims** and

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[2] The Responsible Innovation in Technology for Children project is funded by the LEGO Foundation, initiated by UNICEF and the LEGO-Group and implemented in partnership with the Young and Resilient Research Centre at Western Sydney University; the CREATE Lab at New York University; the Graduate Center, City University of New York; the University of Sheffield; the Australian Research Council Centre of Excellence for the Digital Child; and the Joan Ganz Cooney Center.

[3] Bator, F. M. (1958). The anatomy of market failure. *The quarterly journal of economics*, 72(3), 351-379.

[4] Ofcom. (2019). Online market failures and harms: An economic perspective on the challenges and opportunities in regulating online services.

encourages **continuous innovation** within the market, targeted towards enhancing the well-being of children. Such an approach could have great benefits in harnessing the power of ongoing technological innovations to improve children's well-being across digital markets.

Case studies demonstrating a market shaping approach

We have explored precedents for a market shaping approach from different sectors and countries to understand: a) the opportunities that this approach affords, b) barriers and enablers to this approach, and c) the impact on consumers, businesses and wider society. The following case studies were selected for an in-depth review.

- **Product labelling:** providing measures of performance on products/services can encourage consumer switching, and in turn encourage providers to improve their products in line with performance measures.
- **Regulatory sandboxes:** an environment with relaxed regulatory requirements which allows for greater innovation towards specific outcomes, in partnership with policymakers.
- **Comparison tools:** either government created or government accredited comparison sites that allow consumers to compare business offerings based on established criteria. Similar to product labelling, comparison tools can encourage switching and in turn encourage providers to improve their products in line with consumer preferences.
- **State Investment Banks:** investment banks that are either fully or partially publicly funded to co-invest with industry in delivering outcomes that have wider benefits to society.
- **Recognised certification:** certification of businesses that go beyond minimum standards and achieve a certain level of quality or benefits. This could encourage businesses to meet the certification standards to improve or sustain their reputation and grow their market share.

While less established, there are also emerging models of regulation that require firms to put good outcomes for consumers at the heart of what they do, such as the FCA's new Consumer Duty which requires banks and financial institutions to act to deliver good outcomes for retail customers, avoid causing foreseeable harm, and support customers to pursue their financial objectives.[5] It is too early to say whether

[5] FCA. (2022). Consumer Duty.

such approaches will be successful, but these could merit further consideration to incentivise digital technology firms to focus on how they can improve children's well-being.

Applicability and feasibility of market shaping to digital technology markets and children's well-being

The key characteristics of the digital technology market that need to be taken into consideration when thinking about supplementary approaches to regulation are as follows.

- Digital technology markets are fast-paced, meaning interventions must be able to keep up with these changes.
- The market is made-up of a mix of strong, large market players as well as new entrants.
- Children are acknowledged to be vulnerable citizens and have specific rights that apply in the digital environment. Governments, along with parents/carers and businesses, have a duty to respect and protect these rights. This justifies enhanced market intervention and makes it more politically feasible in this market compared with others.
- There is fragmented understanding on what constitutes good design to protect children or maximise their well-being. There is currently no international consensus on models of safety-by-design, although there is emerging consensus around the Australian model.[6] The same is true to different degrees for privacy-by-design, rights-by-design and well-being-by-design. Each remains complex to measure.

Our review of case-studies and literature found that there are feasible approaches, the application of which could be explored to encourage excellence in responsible innovation for children in digital technology markets. However, important challenges regarding the **complexity of both the regulatory environment, and the absence of consensus on design outcome and measurement in relation to rights and well-being** needs to be overcome.

Key barriers and enablers to developing, implementing and adopting a market shaping approach include the following considerations.

[6] eSafety Commissioner. *(n.d.)* Safety by Design.

Regulatory environment

Complex government and regulatory structures may lead to lack of clarity around responsibilities, and who is the right body to take action. Often countries have different bodies responsible for digital regulation, children's protection and consumer policy in general.

Previous successes of taking similar approaches in a different sector (e.g. food labels) may increase the willingness and capability of both governments and businesses.

Political and cultural context

A lack of awareness of the issue in some countries may mean there is limited public appetite for intervention.

Children have specific rights that must be protected and respected so there may be increased public support for more and better regulation, as well as bi-partisan support from political parties. In some countries, parents have a high level of concern about their children's online use but only a small minority have access to good information to help choose the right product/service for their child.

Clarity of criteria and design

Children's well-being has many dimensions, ranging from safety and security to empowerment. It is challenging to convert these into practical, easy to understand metrics that can underpin policy and regulation.

A high level of cooperation may be needed between government and regulatory bodies, NGOs and the private sector to turn these into credible, robust and practical measures that are available, understandable and useful to different stakeholder groups, including businesses, as well as parents and caregivers.

However, case studies, such as certification through B-Corp, provide encouraging evidence that complex metrics can be distilled into a single label/certificate to facilitate consumer decision making.

Cost, time and other resources

Governments may be concerned about the amount of resources needed to develop and monitor a new intervention.

Some approaches, such as product information, can be relatively low cost to implement, especially where they build on measures that are already being developed by non-government sectors (e.g. the RITEC project, Digital Futures Commission, Common Sense Media).

Wider market players

Businesses, consumer protection organisations and charities can make it more likely that governments will develop and successfully implement a market shaping approach. They contribute towards building the evidence-base, developing tools which can be adopted by governments, and providing support to consumers and businesses.

Conclusion and next steps

There is a clear case for policy and regulatory approaches to shape digital technology markets towards excellence in accommodating and promoting children's well-being. However, further research and testing is needed to develop the right mix of policies and tools - whether information, regulatory and financial incentives, or requirements.

To build a foundation for policymakers to take action to promote children's well-being, the following questions should be answered:

1. What is most impactful and effective, factoring in costs, benefits, and feasibility of implementing different policies and tools in digital technology markets? These are costs and benefits related to governments, regulators, businesses, and consumers.

2. How do we build a consensus around well-being measures that provide sufficient, actionable information to consumers, businesses, and policymakers without being overly complex?

3. Is there a case for sequencing the introduction of different policies and tools - for example, focusing efforts on publishing information that compares products on well-being measures could help inform consumer choice in the short-term, and potentially inform wider policy action in the medium-term.

Before any new policy measures can be fully developed and implemented, it is important to carefully explore how exactly they should be designed, and test any underlying assumptions, the mechanisms of work, and potential impact.

1. Introduction and methods

1.1. Background and purpose

Digital technology "offers real and important opportunities for children, such as allowing them to express themselves, acquire information and knowledge, and to socialise with peers."[7] These opportunities, however, come with the risk of harm - for instance risks related to children's safety and privacy. While children have an enshrined right to specific protection, they also have a right to "provision and participation" - rights that apply to physical as well as digital environments.[8]

Governments around the world are beginning to take a more active role in regulating digital technology service providers. The political objective of these interventions has focused overwhelmingly on reducing harm related to children's use of digital technology. Establishing a minimum level of legal obligations for the protection of children online represents an important first step. At the same time there is an emerging current of thought that highlights the importance of technology in children's lives, the opportunities it holds to support children's broader well-being, and the risks that may result from impediments to access.

[7] OECD. (2022). Companion Document to the OECD Recommendation on Children in the Digital Environment. OECD Publishing, Paris

[8] Livingstone, S., & Bulger, M. (2014). A global research agenda for children's rights in the digital age. *Journal of Children and Media*, *8*(4), 317-335.

Emerging views on children's well-being across global governmental organisations and NGOs

Whether it be through national legislation or by developing strategic partnerships, the well-being of children in the digital environment needs to become a major joint concern for all stakeholders in the 21st century.

Council of Europe 2020 Handbook for policy makers on the rights of the child in the digital environment

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Age-appropriate materials should improve children's experiences, well-being and participation in the digital environment.

European Commission: European Declaration on Digital Rights and Principles for the Digital Decade (2022)

Digital technologies offer multiple opportunities for children to improve their health and well-being….The digital environment promotes children's right to culture, leisure and play, which is essential for their well-being and development

UN General comment No. 25 (2021) on children's rights in relation to the digital environment

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Since children will increasingly spend a large part of their lives interacting with or being impacted by AI systems, developers of AI systems should tie their designs to well-being frameworks and metrics – ideally ones focused on and tested with children specifically – and adopt some measure of improved child well-being as a primary success criterion for system quality.

UNICEF 2021 Policy guidance on AI for children

It is our hypothesis that while government interventions focused on the protection from harm ('harm-based') are essential, additional targeted interventions could move businesses from a position of "minimum legal requirement" towards a "race to the top" – where companies compete on responsible models of innovation. Such an approach would complement a harm-based approach to regulation, stimulate research and innovation in responsible and rights-based design, and create a more sustainable model of digital innovation that prioritises the well-being of children.

In this report, we explore how governments can shape markets to enable both the protection of children and promote their access to the benefits of digital technology for their well-being. We call this a 'market shaping' approach. It is important to note that we consider these approaches to be complementary rather than dichotomous.

This inquiry is aligned with BIT's mission, which is to improve people's lives and communities, drawing on behavioural science. As set out in the behavioural economy report,[9] we believe that a deep understanding of people's incentives, motivations, and behaviours can improve the design of traditional policy levers, and open up new categories of policy tools. It has the potential to help governments and regulators design more effective policy, shape markets, and address issues of low productivity, exclusion and unfairness, benefiting businesses and citizens across society.

The findings of the research presented in this report will feed into the LEGO Group and UNICEF co-founded programme of work focussed on Responsible Innovation in Technology for Children (RITEC).[10] Any opinions, findings, and conclusions or recommendations expressed in this report are those of BIT and do not necessarily reflect the findings of the RITEC project, the views of the LEGO Group, UNICEF or any other RITEC partners.

The first phase of the RITEC project was published earlier this year and presented results from research and consultations with children on what well-being is to them. The first project report presents a well-being framework, providing 8 components of well-being: competence, emotional regulation, empowerment, social connection, creativity, safety and security, diversity, equality and inclusion, and self-actualisation.[11]

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[9] Broughton et al. (2020). The Behavioural Economy. Behavioural Insights Team

[10] The Responsible Innovation in Technology for Children project is funded by the LEGO Foundation, initiated by UNICEF and the LEGO-Group and implemented in partnership with the Young and Resilient Research Centre at Western Sydney University; the CREATE Lab at New York University; the Graduate Center, City University of New York; the University of Sheffield; the Australian Research Council Centre of Excellence for the Digital Child; and the Joan Ganz Cooney Center.

[11] Kardefelt Winther, D. (2022). Responsible Innovation in Technology for Children: Digital technology, play and child well-being. Innocenti Research Report

1.2. Methodology

Our research methodology for the work presented in this report consists of three key elements: 1) desk research, 2) expert interviews, and 3) a stakeholder workshop.

In the desk research, we drew on existing academic literature, found via online journal databases, as well as on grey literature such as reports by governments, think-tanks, and market organisations. We also adopted a snowballing technique through reviewing where relevant papers had been cited, and what sources they had referenced.

We also conducted interviews with academics, public policy experts, and representatives of business organisations to:

- inform our literature review and identify useful case studies;
- capture a deeper understanding of why governments choose to actively shape markets or not; and
- get their perspective on practical tools and levers that can be used to encourage market players towards excellence in digital technology markets.

Ten interviews were conducted during the period May 2022 to August 2022. As some interviewees wished to remain anonymous, throughout this text we reference findings from an interview as being from "an expert interviewee" rather than the name of the participant.

From the literature and interviewees, we identified case studies from different markets and countries where governments have intervened to shape markets towards excellence. We then selected 5 case studies to be examined in more depth in Section 3. We used the following criteria when selecting interviewees and case studies:

- **Industry**: we sought a range of interviewees and case studies in both digital technology and non-digital technology markets to balance the need for new ideas with applicability to our target group and market.
- **Country:** experts and case studies were identified from a range of countries such as the UK, Singapore, the US, Denmark, Australia, and Japan to ensure our findings are relevant across differing political contexts. These are countries where the project team either has an existing presence or good links. We

note that these are all advanced economies. Future research would benefit from examining how well the findings of this report apply to developing countries.

- **Interviewee profile:** interviewees were spread across academia, public policy, and consumer and business groups. This allowed us to gain insights on the theoretical arguments for a market shaping approach as well as the practical considerations.
- **Type of case study**: a mix of case studies were selected across different layers of government intervention, from more light-touch to more severe methods. These layers are presented in Section 2.

Finally, we ran a workshop with stakeholders from BIT and the LEGO Group, UNICEF, and the Joan Ganz Cooney Center at Sesame Workshop who are central partners in the RITEC project. In the workshop, we presented our interim findings and discussed how the learnings could be applied to children's well-being in digital technology markets.

2. The role of government intervention

2.1. When should governments intervene in markets?

There is a longstanding debate amongst economists on how much and when governments should intervene in markets. According to the proponents of free markets, there are limited circumstances in which governments should intervene as markets are good at allocating resources efficiently.[12] On the other side, some economists suggest that governments need to be more involved to achieve higher social welfare.[13]

A classic example is social welfare loss arising where factories fail to account for air pollution they produce when manufacturing goods.[14] This affects all individuals, not just those that produce or consume the goods. There is little incentive for the manufacturer to account for its pollution as it would add costs to the business. Where markets do not bring results that are in the best interest to society, governments typically intervene to correct for 'market failure'.[15] Thus, many countries have vehicle emissions standards that require new vehicles to achieve set targets for the emissions they produce, thereby prohibiting manufacturers from producing more polluting vehicles.[16]

A lack of competition can stymie markets, reducing choice to consumers, and resulting in little incentive for providers to innovate. Beyond this, economists such as Kahneman and Tversky showed that markets may not deliver the best outcomes to consumers because of behavioural factors that are not accounted for under

[12] For example, see Friedman, M. (2002). Capitalism and Freedom: Fortieth Anniversary Edition.
[13] For example, see Barr, N. (2020). Economics of the welfare state. Oxford University Press, USA.
[14] The CORE Team. (2019). Economy, society, and public policy. Economics Department, University College London.
[15] Marciano, A., & Medema, S. G. (2015). Market failure in context: introduction. History of Political Economy, 47(suppl_1), 1-19.
[16] An, F., Earley, R., & Green-Weiskel, L. (2011). Global overview on fuel efficiency and motor vehicle emission standards: policy options and perspectives for international cooperation. United Nations background paper, 3.

'classical' economics models.[17] Lack of time, and the large amount of information available to people make it hard, if not impossible, for people to fully analyse this information and act upon it. As a result, we're more likely to choose the status quo, to disproportionately focus on short term benefits and costs, and to be heavily influenced by even small differences in how the information is presented.[18]

For example, suppliers may use subtle techniques that exploit behavioural biases and heuristics. These include introducing small extra steps to reduce the likelihood of consumers taking an undesirable action, such as unsubscribing.[19] This is often referred to as "sludge", a term coined by Richard Thaler and Cass Sunstein, as the opposite of "nudge" which relates to small changes that should make it easier for people to take actions that are beneficial to them.[20] Sludge and other harmful "dark patterns"[21] techniques are prominent in the digital world where consumers are especially susceptible due to the speed and volume of interactions, as well as the scale and sophistication of data collection and targeting techniques.[22] This is even more relevant when considering vulnerable audiences such as children. Although it is often difficult to specify what constitutes a "dark pattern", governments may still try to intervene. For example, in Singapore, a court order has been issued to prevent 'subscription traps', wherein consumers are automatically subscribed to a service following a free trial.[23]

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[17] Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47, 263-291.

[18] For example, see Kahneman, D. (2011). Thinking, fast and slow. Macmillan.

[19] Brennan, T. J. (2007). Consumer preference not to choose: methodological and policy implications. Energy policy, 35(3), 1616-1627.

[20] Thaler, R. H., & Sunstein, C. R. (2009). Nudge: Improving decisions about health, wealth, and happiness. Penguin.
Thaler, R. H. (2018). Nudge, not sludge. Science, 361(6401), 431-431.

[21] There are various definitions of dark patterns, one of which is "user interfaces whose designers knowingly confuse users, make it difficult for users to express their actual preferences, or manipulate users into taking certain actions" from Luguri, J., & Strahilevitz, L. J. (2021). Shining a light on dark patterns. Journal of Legal Analysis, 13(1), 43-109.

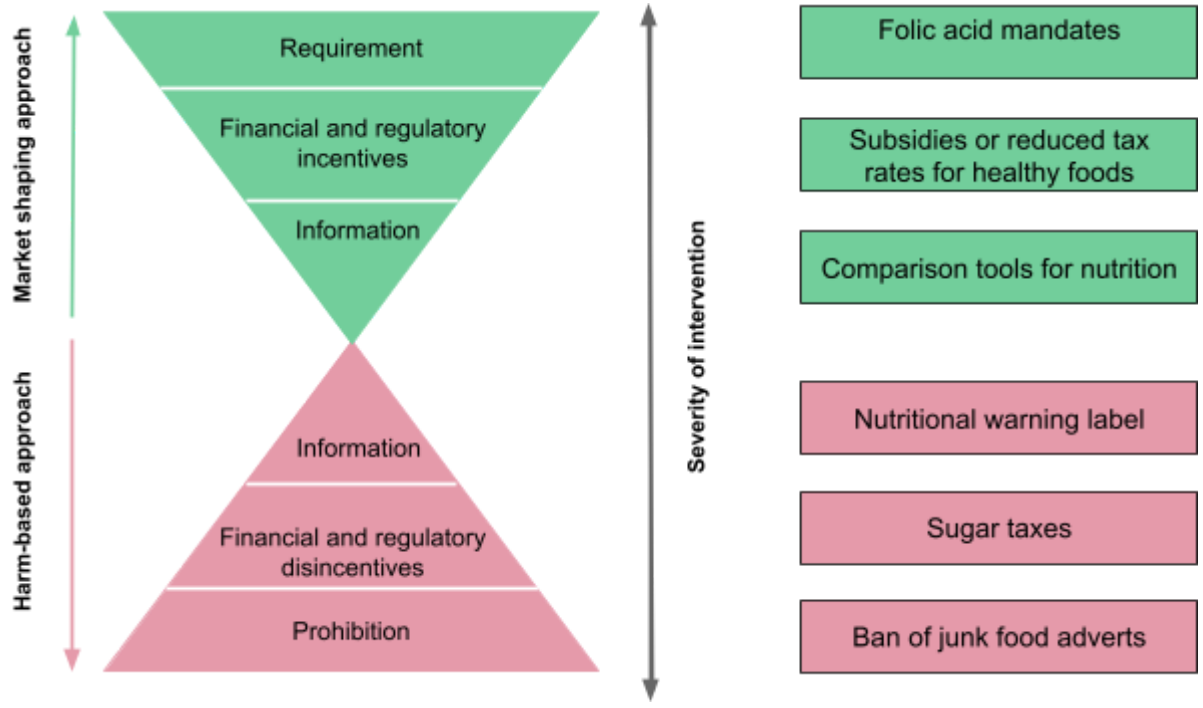
[22] Helberger, N., Sax, M., Strycharz, J., & Micklitz, H. W. (2022). Choice Architectures in the Digital Economy: Towards a New Understanding of Digital Vulnerability. Journal of Consumer Policy, 45(2), 175-200.

[23] Competition & Consumer Commission. (2020). E-Commerce Retailer Fashion Interactive Ordered to Cease Unfair Trade Practices and Stop Using "Subscription Traps".

2.2. Approaches to government intervention: types of intervention and hierarchies of intervention strength

Broadly, there are two approaches governments pursue when they intervene in markets. Governments commonly intervene in markets to protect consumers from harm, which we term a **'harm-based'** approach. Some modern economists, notably Mariana Mazzucatto, have advocated for a move from market fixing towards market shaping, or even market creation.[24] We term this a **'market shaping'** approach, where governments supplement protecting consumers from harm and encourage the market to improve their products and services over time, pushing out the frontier of what excellence looks like.

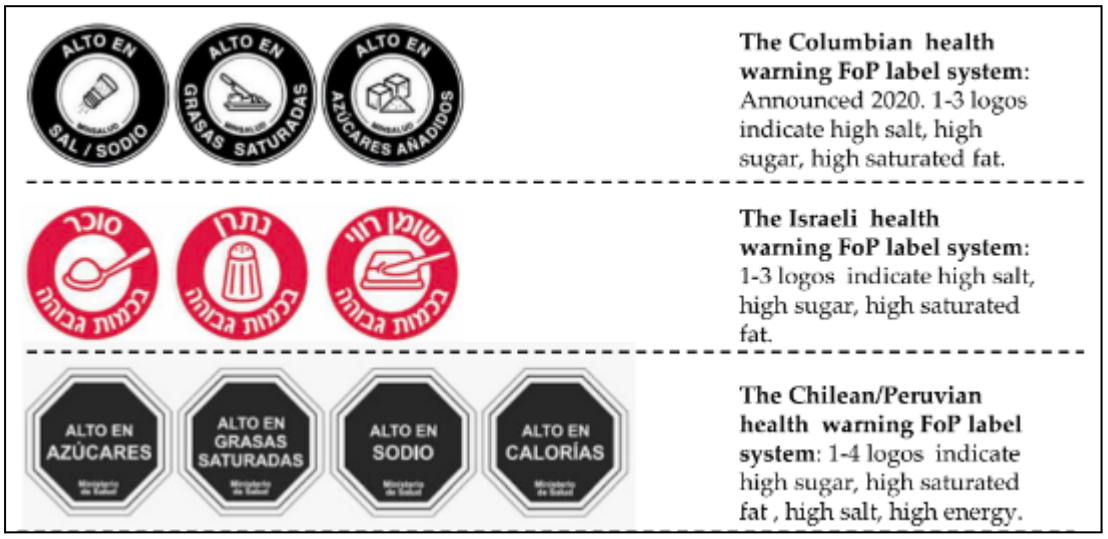
The enforcement pyramid, devised by Professors Ian Ayres and John Braithwaite, provides a hierarchy of government intervention types.[25] We developed a modified version of this pyramid to include layers for the market shaping approach (Figure 2). It is worth noting that interventions may not neatly fit into either approach and there may be some intersections.



[24] Mazzucato, M., & Ryan-Collins, J. (2022). Putting value creation back into "public value": from market-fixing to market-shaping. Journal of Economic Policy Reform, 1-16.
[25] Ayres, I., & Braithwaite, J. (1992). *Responsive regulation: Transcending the deregulation debate*. Oxford University Press.

Figure 2: Classification of government intervention using nutrition as an example

Information provision is the lightest type of intervention. For example, nutritional warning labels, used in Columbia, Israel, and Chile (see Image 1), make it easy for consumers to know when a food product is high in nutrients of concern (sugar, salt, or saturated fat).[26] Governments can also turn to stronger financial and regulatory disincentives to reduce harm. Continuing with the nutrition example, governments have introduced sugar taxes to reduce consumption.[27] Governments can also prohibit activities. Such prohibition has been considered for advertisements for junk food in the UK and is due to be adopted in 2023 for advertisements shown between 5.30am and 9pm.[28]



[26] Hamlin, R., & Hamlin, B. (2020). An Experimental Comparison of the Impact of 'Warning' and 'Health Star Rating' FoP Labels on Adolescents' Choice of Breakfast Cereals in New Zealand. *Nutrients*, *12*(6), 1545.; Taillie, L. S., Bercholz, M., Popkin, B., Reyes, M., Colchero, M. A., & Corvalán, C. (2021). Changes in food purchases after the Chilean policies on food labelling, marketing, and sales in schools: a before and after study. *The Lancet Planetary Health*, *5*(8), e526-e533.

[27] Fernandez, M. A., & Raine, K. D. (2019). Insights on the Influence of Sugar Taxes on Obesity Prevention Efforts. *Current Nutrition Reports*, *8*(4), 333–339.

[28] Department of Health & Social Care. (2022). Health and Care Bill: advertising of less healthy food and drink.

Image 1: nutritional warning labels used in Columbia, Israel and Chile – an example of an information harm-based approach. Image adapted from Hamlin and Hamlin (2020).[29]

As with harm-based approaches, the lightest intervention type for market shaping is information provision. For example, comparison websites where consumers can compare the nutritional content of food products, enables consumers to make healthier choices. If the intervention works well, it should encourage producers to improve the nutritional value of their offerings across a range of dimensions, based on consumer demand, to compete with other producers for market share. Under a market shaping approach, information provision encourages the adoption of positive well-being (e.g. increased fibre or vitamins), whereas under a harm-based approach, information provision primarily encourages the avoidance of negative well-being (e.g. eating less sugar).

Governments may then seek to provide financial and regulatory incentives to markets to promote population health, for example, through offering subsidies or reducing tax rates for healthier food products.[30] Finally, governments can impose requirements on the market to encourage excellence. For example, in 2021 the UK government mandated folic acid fortification of flour, which helps with the creation of healthy red blood cells.[31] We note, however, that folic acid mandates fall short of a true market shaping approach as while they shape the market, after their imposition, there are no incentives for continuous improvement. A truly market shaping approach would be if the requirements were continuously changed in line with new evidence to push the frontier of nutrition.

Against this backdrop, we now identify some of the limitations of a market shaping approach, and discuss where a harm-based approach can serve a critical role. An important assumption is that we consider policies that are **generally considered well-designed** and so the strengths and limitations relate to particular policy types rather than individual cases of poorly designed/implemented policies. Furthermore,

[29] Hamlin, R., & Hamlin, B. (2020). An Experimental Comparison of the Impact of 'Warning' and 'Health Star Rating' FoP Labels on Adolescents' Choice of Breakfast Cereals in New Zealand. *Nutrients*, *12*(6), 1545.
[30] Gustavsen, G. W., & Rickertsen, K. (2013). Adjusting VAT rates to promote healthier diets in Norway: A censored quantile regression approach. Food Policy, 42, 88–95.
[31] Haggarty, P. (2021). UK introduces folic acid fortification of flour to prevent neural tube defects. The Lancet, 398(10307), 1199–1201.

we acknowledge that there may always be some exceptions to our identified overarching principles and there may exist cases of prohibitive policies that do not have these strengths or limitations.

2.3. The merits and limitations of the harm-based and market shaping approaches

Below, Table 1 depicts the merits and limitations of each of the two approaches to help identify where and how a market shaping approach could best supplement a harm-based approach. It is important to note that these two approaches are complementary rather than dichotomous. A market shaping approach alone would be insufficient to protect children from the worst harms.

There are important nuances within each approach, dependent upon the layer of the pyramid being considered. We aim to uncover some of these in this Table as well as when we discuss individual case studies in Section 3. In both sections, we refer to the relevant pyramid layer for each example discussed.

Harm-based approach	Market shaping approach
Overarching	
+ Protection from the **worst outcomes.** + **Defining harm** is usually more straightforward than defining 'good'. + Developing **clear measurable metrics** for the target outcome is also generally straightforward. + **Some innovation,** as businesses adapt to reduce harms. + A **wealth of past precedent** to draw from. - Limited ability to achieve **wider policy aims.** - Companies often do the **bare minimum** as the approach may	+ **Achievement of wider policy aims,** by incorporating a range of dimensions. + **Encourages continuous innovation towards a positive outcome,** pushing out the frontier. - A wide consensus is needed on **what constitutes 'good'** - Developing **clear measurable metrics** for multi-faceted outcomes is complex and may need collaboration across many stakeholders. - Alone, this approach **cannot prevent the worst outcomes** as it

stifle positive innovation.	lacks a significant punitive dimension.
By type of intervention, in line with the pyramid classification	
Information *Examples: nutrition warning labels* + Encourages competition to reduce specific harms - **Less flexibility** to adapt to changing environment (e.g. technological advancement) and consumer preference compared to 'market shaping'. - Doesn't encourage action across a **wider set of outcomes**. May skew products and services towards a single dimension of avoiding harm rather than improving overall outcomes.	**Information** *Examples: EU's energy labelling scheme, Nutri-Score food labels* + Can **adapt** to changing environment (e.g. technological advancement) and consumer preferences. + **Encourages ongoing, continuous innovation** on dimensions that consumers care about most. + **Can come at relatively low cost to government** compared to other intervention types. + Encourages competition. - Requires consumers to engage with and act on the information provided.
Financial and regulatory disincentives *Examples: sugar tax, alcohol tax duty* + Can be **revenue-generating** for government. + May encourage **innovation** (e.g. reformulation to reduce taxed ingredients). - **Less flexibility** to adapt to changing environment (e.g. technological advancement) and consumer preference	**Financial and regulatory incentives** *Examples: state investment banks, government challenge funds, green energy grants* + Can **adapt** to changing environment (e.g. technological advancement) and consumer preferences. + **Fosters innovation** by providing markets with incentives to develop better solutions. + May encourage **competition**, along specific dimensions that are being encouraged.

compared to 'market shaping'. - **Imposes costs** on businesses and consumers.	- May **require investments** from government.
Prohibition *Examples: ban on junk food adverts, California Consumer Privacy Act, energy price cap, minimum wage* + **Speed and certainty of outcomes is relatively quick** as compulsory rules must be followed. - **Low flexibility** to adapt to changing environment (e.g. technological advancement) and consumer preferences. - Likely to **impose costs** on governments and businesses, and reduce consumer choice.	**Requirements** *Examples: folic acid mandates, Open Banking, FCA Consumer Duty* + **Speed and certainty of outcomes is relatively quick** as compulsory rules must be followed. - Some requirements (folic acid mandates) have **low flexibility** to adapt to changing environment (e.g. technological advancement) and consumer preferences, but **flexible approaches** (FCA consumer duty) are possible to construct. - Likely to **impose costs** on governments and businesses, may reduce consumer choice (folic acid mandate), or increase it (Open Banking)

Table 1: The merits and limitations of harm-based approaches and market shaping approaches

2.3.1. Protection from harm & achievement of wider policy aims

Key strengths of the harm-based approach is that it offers a base level of protection against the worst harms and there is a plethora of past precedent in this area to draw from. However, this approach in isolation fails to achieve wider policy aims (see an example in the box below). It may also stifle some forms of positive innovation as companies are not motivated to adopt measures beyond protecting consumers from the worst outcomes alone. However, when supplemented with a market shaping approach, a harm-based approach can incorporate a range of dimensions and thus enable the promotion of well-being, innovation, and other wider policy

aims. For example, economists, such as Mariana Mazzucato, argue that the role of the public sector should not be limited to 'fixing markets' as solving society's complex challenges requires the public sector to lead change, create, and shape markets.[32]

Improving the quality of audit services in the UK

The auditing market is dominated by a few market players with a large market share (known as the 'Big Four') and has seen declining audit quality.[33] The government adopted a prohibition approach to address this, requiring that firms could not provide non-audit services to companies they were auditing.[34] The aim of this was to separate the two services and encourage businesses to prioritise their audit services as they could no longer be bolstered by their non-audit services.

However, these measures were ineffective at improving quality and the government has announced adopting a new approach.[35] In particular, FTSE350 companies will be required to conduct part of their audit with a challenger firm and the 'Big Four' may be required to keep their audit and non-audit businesses separate. This is expected to increase the quality of audits and trust in the industry.

Take State Investment Banks (SIBs) as an example. SIBs were traditionally used as a mechanism to address market failure, but have now taken on a new market-shaping role through the introduction of mission-oriented SIBs that are focussed on specific societal challenges.[36] It is argued that this shift in approach means "SIBs are not simply fixing failures from markets; they are shaping and creating new technologies, firms and sectors, and, ultimately, markets".[37]

[32] Mazzucato, M. (2016). From market fixing to market-creating: a new framework for innovation policy. Industry and Innovation, 23(2), 140-156.
[33] Financial Reporting Council. (2018). Big Four Audit Quality Review results decline.
[34] Financial Reporting Council. (2020). Operational separation of audit practices.
[35] GOV.UK. (2022). Audit regime overhaul to help restore trust in big business. Press release
[36] Mazzucato, M., & Penna, C. C. R. (2016). Beyond market failures: The market creating and shaping roles of state investment banks. *Journal of Economic Policy Reform*, *19*(4), 305–326.
[37] Ibid

Market shaping approaches can also have positive spillover effects as government intervention can act as a signal.[38] For example, energy efficiency labelling may not only ameliorate consumers' purchasing behaviour for appliances; it may also result in broader awareness of energy consumption and environmental impact.

However, it is worth noting that market-based approaches alone are insufficient to prevent the worst outcomes as they may lack a sufficient punitive dimension. Thus, we consider the two approaches as complementary, whereby a harm-based approach can prevent the worst outcomes alongside a market-shaping approach which can achieve wider policy aims.

2.3.2. Defining the aim, developing the measures and implementing

The ability of a market shaping approach to support very broad policy aims has a flipside. Given that the approach aims to encourage industry players to push the frontier, it can be quite challenging to define what 'good' actually means. For example, it is not easy to define what a desired target outcome is with respect to digital technology, without defining it as the opposite of a bad outcome. Without a clear definition, it is difficult to develop targeted policies, and identifying correct metrics can be a challenge, as mentioned by one of our interviewees. For example, it is difficult to choose a small number of key metrics for comparison tools that will shift consumer decision-making to maximise their well-being. At the same time, providing consumers with too many comparison metrics may overwhelm them.[39] In contrast, it can be much easier to determine what is a 'harm' and ban the related practice. For example, clear and simple measures of harm can be used to develop easy to understand nutrition warning labels for consumers.[40]

It is important that 'good' is defined by a collection of government and regulatory bodies, alongside the private sector, reflecting views from across society and the wider public. Appropriate processes should be in place to ensure this definition is regularly reviewed as the market evolves, and that it is measurable.

2.3.3. Speed and certainty of outcomes

At the prohibition and requirement levels, both approaches rely on more direct

[38] Office of Fair Trading. (2009). Government in markets.
[39] Competition & Markets Authority. (2017). Digital Comparison Tools: Consumer Research.
[40] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION.

mechanisms which in theory should lead to quicker and more certain direct outcomes (such as compliance rates). For example, in the energy sector, price capping allows governments to quickly cap the amount consumers spend on electricity, thereby allowing a faster response to rising energy prices.[41] Similarly, businesses have been given 12 months to comply with the new rules introduced by the FCA Consumer Duty (see box below).

Other intervention levels for both approaches tend to rely on more complex mechanisms of change often involving more stakeholders who need to take action. This may translate into slower speeds of measurable outcomes and lower certainty. For example, if comparison tools reduce barriers for new entrants, it can still take several years for new companies to develop and bring benefits to consumers.

FCA Consumer Duty

The UK's Financial Conduct Authority (FCA) has recently introduced new rules that require businesses to make it as easy for consumers to switch or cancel products as it was to take them out.[42] Businesses have been given 12 months to comply with the new rules for all existing and new products.

The FCA mandates that businesses must offer products and services that are right for the consumer. Thus, this reflects the requirement layer of the market shaping pyramid as it mandates that businesses have to change their behaviour but it goes further than harm-based approaches, requiring the businesses to promote the well-being of consumers.

2.3.4. Costs to different stakeholders

We discuss the impact on different stakeholders in detail in Section 3.2.1 and here we briefly mention the key aspects where it is possible to compare the two approaches.

Overall, costs to different stakeholders depend heavily on the layer of the pyramid. For interventions related to prohibition and requirements, governments may incur

[41] Hardy, A., Glew, D., & Gorse, C. (2019). Assessing the equity and effectiveness of the GB energy price caps using smart meter data. *Energy Policy*, *127*, 179–185.
[42] FCA. (2022). The FCA's Consumer Duty will lead to a major shift in financial services.

significant costs from administering and monitoring regulations, while businesses will incur costs from having to change their products or services as well as from having to prove their compliance, particularly where there is a strict deadline.[43] Consumers may also see a reduction in choice and an increase in costs if businesses pass some of their cost increase onto them.[44] However, if interventions such as the FCA consumer duty make it easier to switch or cancel services, consumers may save money in the longer term. Similarly, , interventions such as Open Banking can lead to an increase in consumer choice.

For interventions related to financial and regulatory disincentives, a harm-based approach may generate some revenues for the government (e.g. from tax) and potential future savings for either governments or consumers (e.g. from potentially lower healthcare costs) but is likely to impose short-term costs on businesses and consumers (e.g. both may bear some cost related to a new tax).[45] The picture is more nuanced for a market shaping approach.

A market shaping approach may require significant investments from the government. For example, the UK government has committed £116 million to encourage innovation in green energy.[46] Similarly, £110 million was pledged by the UK government in 2021 towards a new online safety regime.[47] This may be cost effective in the long-run as it may reduce the costs of protection from further harm, but this represents a significant upfront cost.

With respect to businesses, interventions related to financial and regulatory incentives may promote competition, putting pressure on incumbents but benefiting new entrants, as well as consumers.[48] While incentives may be in the form of

[43] National Audit Office. (2017). A short guide to regulation
[44] Chambers, D., Collins, C. A., & Krause, A. (2019). How do federal regulations affect consumer prices? An analysis of the regressive effects of regulation. *Public Choice*, *180*(1–2), 57–90.
[45] Ally, A. K., Meng, Y., Chakraborty, R., Dobson, P. W., Seaton, J. S., Holmes, J., Angus, C., Guo, Y., Hill-McManus, D., Brennan, A., & Meier, P. S. (2014). Alcohol tax pass-through across the product and price range: Do retailers treat cheap alcohol differently? *Addiction*, *109*(12), 1994–2002.
[46] GOV. UK. (2021). Government invests over £116 million to drive forward green innovation in the UK
[47] Tech UK. (2021). The Autumn 2021 Budget and Spending Review, does it deliver for UK tech?
[48] Competition & Markets Authority. (2022). The State of UK Competition

monetary benefits for businesses, these may need to be invested into developing specific products or services.

With respect to the information level of the pyramid, businesses may bear the cost related to collecting and evaluating the required data (or pay for inclusion in comparison schemes) but new businesses may have lower market entry costs. Overall, greater competition should benefit consumers, although they may see some price increases where there are other barriers to entry and businesses pass on some of their costs. At the same time, a market shaping approach can come at a relatively low price to the government as it can rely on third-parties developing and implementing tools such as price comparison websites. This substantially reduces intervention costs for the government, which can accredit existing schemes and methodologies, and promote them without large investments.

2.3.5. Adaptability to changing environment and consumer preferences

Adaptability depends on the layer of the pyramid, with requirements and prohibition typically being the most rigid. This is particularly challenging for digital markets which are fast moving and subject to continuous technological advancement, meaning legislation may become outdated by the time it is introduced.[49] However, legislation focused on outcomes rather than mechanisms to harm, may overcome this. For example, some requirements such as the Open Banking and the FCA Consumer Duty in the UK, should have a high level of adaptability to the changing environment and different consumer preferences.

At other layers of the pyramid, a market shaping approach is likely to be more flexible than the harm-based approach with respect to adapting to consumer preferences and changes in the environment (e.g. technological advancement). For example, comparison tools enable consumers to make decisions based on attributes that are important to them (e.g. price, quality, functionality, delivery time). We have not come across examples that would provide the same level of tailoring and flexibility in our review of harm-based case studies.

Moreover, if an intervention and the well-being measures are designed well, any newly discovered effects of digital technology on well-being should be automatically incorporated into metrics visible to market players. This will lead them

[49] House of Lords. (2021). *Digital regulation: Joined-up and accountable*.

to change their behaviour and put pressure on the suppliers to incorporate the new factors into their products or services.

2.3.6. Fostering innovation

By its nature, a market shaping approach should give incentives to the market to develop new and better solutions, and thus drive innovation, such as the introduction of 'Open Banking' in 2017 in the UK.

Open Banking

The UK Competition & Markets Authority initiated 'Open Banking' in 2017 to increase competition in the provision of retail banking services.[50] It enables customers to share their bank and credit card transaction data securely with trusted third parties who can then develop services that benefit consumers.[51] For example, Open Banking enables mobile applications such as Cake, which aggregates an individual's bank accounts and transactions from multiple banks to analyse their financial habits. Thus, a consumer can easily see an overview of their total financial position across all banks in one place rather than needing to log into multiple accounts.

Open Banking has been lauded as revolutionary in shaping financial markets, encouraging existing retail banks to transform from traditional banking models towards 'platform' models, and reducing the barriers to entry for new entrants to the market.[52]

Positive impacts have also been felt by consumers, who have reported that Open Banking has enabled them to "keep to budgets, reduce unnecessary expenditure, shop around and minimise fees and charges".[53]

[50] Competition & Markets Authority. (2021). Update on Open Banking.
[51] Financial Conduct Authority & Competition & Markets Authority. (2018). *Helping people get a better deal: Learning lessons about consumer facing remedies*.
[52] Nicholls, C. C. (2019). Open Banking and the Rise of FinTech: Innovative Finance and Functional Regulation. *Banking & Finance Law Review*, *35*(1), 121–151.
[53] Open Banking. (2021). The Open Banking Impact Report (Oct 2021).

2.4. Conclusion: which approach to choose

Overall, our research of case studies (outlined in the subsequent section) suggests that 'stronger' measures are more common for a harm-based approach, such as financial and regulatory disincentives and prohibition. A market shaping approach appears to rely more on 'lighter-touch' measures, such as the provision of information, and financial and regulatory incentives.[54]

Each of the approaches has its strengths and limitations. A harm-based approach may be best suited to cases where there is a very specific known harm that consumers need to be protected from. For example, if a particular substance added to foods is harmful for health, it makes sense to ban adding it to food products. However, many acute policy problems, including well-being in the digital world, are much more complex and this is where a market shaping approach can bring benefits as a supplement to a harm-based approach.

[54] Although financial and regulatory incentives and disincentives are at the matching levels of the pyramid, we expect that disincentives such as taxes would be "stronger" in terms of enforcement level compared to incentives (e.g. innovation funding).

3. Case studies demonstrating a market shaping approach

3.1. Case study selection

In the previous section, we discussed three layers of market shaping, illustrated using an adapted and inverted version of the Ayres and Braithwaite's enforcement pyramid. The three layers were: information, financial and regulatory incentives, and requirement.

In this section, we present case studies identified through desk research and expert interviews, and classify each case study into the aforementioned pyramid (Figure 3). We draw together overarching themes from the case studies to provide an overview of the impact on consumers, businesses, and wider society. We also discuss the factors to consider when implementing any intervention to encourage excellence.

We selected case studies where we felt there could be applicability to digital technology markets and children's well-being, due to their key characteristics, presented below:

Key Characteristics	
Digital technology markets	**Children's well-being**
The market is fast-paced.	There are many dimensions to children's well-being.
There are a mix of strong, large market players as well as new entrants.	The measurement of each dimension is complex.

Table 2: Key characteristics of digital technology markets and children's well-being.

The case studies selected are depicted below, mapped against the market shaping pyramid. Those case studies not being considered further are highlighted in grey:

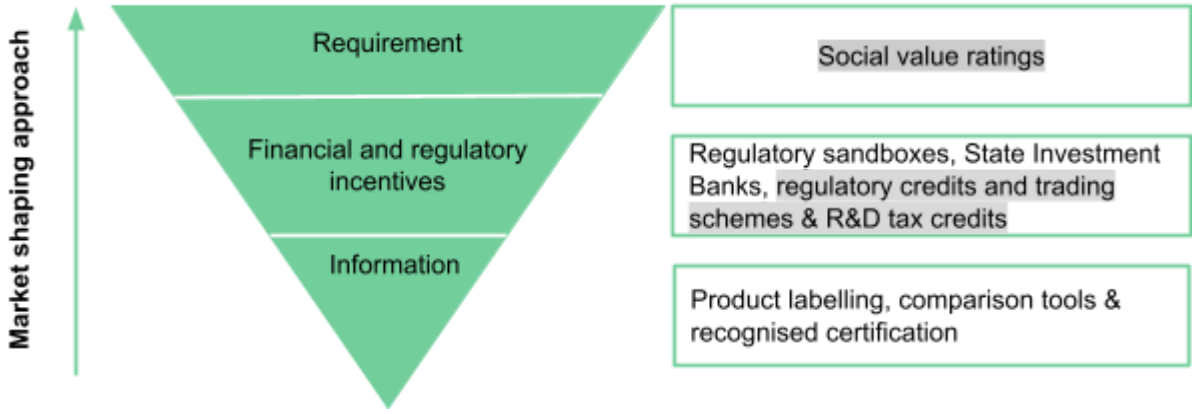


Figure 3: Classification of case studies for market shaping in digital technology and children's well-being

1. **Product labelling:** providing measures of performance on products/services can encourage consumer switching and in turn, encourage providers to improve their products in line with performance measures.
2. **Regulatory sandboxes:** an environment with relaxed regulatory requirements which allows for greater innovation towards specific outcomes, in partnership with policymakers.
3. **Comparison tools:** either government created or government accredited comparison sites that allow consumers to compare business offerings based on established criteria. Similar to product labelling, comparison tools can encourage switching and, in turn, encourage providers to improve their products in line with consumer preferences.
4. **State Investment Banks:** investment banks that are either fully or partially publicly funded to co-invest with industry in delivering outcomes that have wider benefits to society.
5. **Recognised certification**: certification of businesses that go beyond minimum standards and achieve a certain level of quality or benefits. This could encourage businesses to meet the certification standards to improve or sustain their reputation and grow their market share.

No case study was selected from the requirement layer of the pyramid, as we found that softer forms of intervention are more common for a market shaping approach.

Additionally, there were some case studies that met the above criteria but were not

selected for inclusion. **R&D tax credits** are tax incentives that promote innovation, and in theory, specific tax credits could be designed to encourage investment in products that promote well-being. In practice, it would likely be too onerous to administer a tax credit, given the numerous dimensions to children's well-being and the difficulty in measurement. However, this could become more feasible in the future once more research and knowledge has been generated to potentially establish broad consensus on the key dimensions of well-being and how to measure them.

Social value ratings in procurement was another case study we identified. This is where criteria are included within public sector procurement. For example, South Africa introduced Broad-Based Black Economic Empowerment, with specific criteria for procuring from companies with black ownership, post-apartheid.[55] We deprioritised this case study as its applicability is typically limited to the public sector. Therefore, it would not directly change the purchasing behaviour of parents/guardians.

Lastly, we considered **regulatory credits and trading schemes,** such as the EU emissions trading scheme. However, this case study was not selected as there is not a readily identifiable 'credit' within digital technology markets that could be traded, thus limiting its applicability.

3.2. Key themes from the case studies

3.2.1. Barriers and enablers to governments deploying this model

In this subsection, we present overarching themes identified from the case studies. We firstly consider the barriers and enablers governments face when implementing a market shaping approach. The barriers and enablers cut across various factors: legal and institutional, market-based, resource-driven, and political and cultural. It is worth noting that many of these factors apply to most, if not all, layers of the market shaping pyramid. We then look into the role of wider market players.

These findings from the case studies are then used in Section 4.2 for our initial

[55] The Department for Trade, Industry and Competition. (*n.d.*). B-BBEE Procurement and Transformation.

feasibility assessment for a market shaping approach with respect to digital technology and children's well-being.

3.2.2.1. Barriers

The composition of the government and regulatory bodies: A complex regulatory environment may prevent implementation of interventions for two reasons. Firstly, there may be a lack of clarity on which body has the remit and powers to act to shape markets towards excellence. Secondly, successful implementation often requires close coordination across regulatory and government bodies.

An appointed regulator with a clear mandate can ease regulatory uncertainty. This is particularly important in markets where there are many regulators.

The size and international nature of both companies and markets: The size of businesses within the market is important. For example, Direct Line in the UK refused to be listed on comparison sites and was able to do so due to their existing market share and brand recognition.[56]

The geography of markets and companies is also pivotal to the effectiveness of interventions. Without international cooperation, regulations may not be effective as companies can circumvent the rules by operating in another country, unless they are specifically designed with this in mind. This is particularly important to the requirements layer of the market shaping pyramid. One expert interviewee discussed the market in Australia and how the effectiveness of interventions was hampered because for larger multinational corporations, Australia forms a small part of their overall holdings. Thus, they are less impacted by Australian specific interventions.

Differing political and cultural contexts: Wider political and cultural factors relating to perceptions of businesses and their role in society can affect the success of interventions. For example, an expert interviewee commented on the generally collaborative approach in Japan which facilitated the adoption of a voluntary labelling scheme by companies. Other countries such as the US may have a more "adversarial and legalistic" regulation than Japan.[57] However, sometimes businesses

[56] Hargreaves Landsdown. (2019). Direct Line Group - Market remains competitive.
[57] Kagan, R. (2000). Introduction: Comparing National Styles of Regulation in Japan and the United States. *Law & Policy*, 22(3–4), 225–244.

that are used to operating under more complex regulatory systems are better placed to engage with voluntary schemes.[58] Other important factors include the available government budget, perceived importance of the issue, as well as political and social factors.[59]

Clarity of criteria: The complexity of determining what 'good looks like' can make interventions hard to design well and implement successfully. Regulatory criteria limit accessibility for businesses, particularly for new startups who may not have the expertise to navigate the regulatory environment. These are typically on the requirement layer of the market shaping pyramid whereas lower layers of the pyramid do not require strong regulation and, as discussed earlier, can actually lower barriers to entry for new entrants.

Safety by design

The Australian independent regulator for online safety, eSafety, has developed the Safety by Design initiative. As noted by an expert interviewee from the eSafety team, this initiative aims to provide clarity to industry on designing products and services that focus on mitigating harms by building in safety features.

The initiative includes a set of principles to follow alongside interactive tools and resources for businesses to help them with adopting the principles.

An expert interviewee outlined that this initiative has now been accessed in over 45 countries and has a high volume of activity from businesses, suggesting it may be successful in encouraging businesses to consider their practices.

Complex outcome measures also make it difficult for consumers to understand the information being presented, thus limiting their ability to process and act on this information. This is particularly important for information-focussed interventions.

[58] Marx, A., Depoorter, C., & Vanhaecht, R. (2022). Voluntary Sustainability Standards: State of the Art and Future Research. Standards, 2(1), 14-31.
[59] Marx, A., Depoorter, C., & Vanhaecht, R. (2022). Voluntary Sustainability Standards: State of the Art and Future Research. Standards, 2(1), 14-31.
Perkins, R., & Neumayer, E. (2010). Geographic variations in the early diffusion of corporate voluntary standards: comparing ISO 14001 and the Global Compact. *Environment and planning A*, *42*(2), 347-365.

Simplicity in the design of interventions and metrics can support their effectiveness. For example, for informational interventions, key information should be presented in such a way that consumers can quickly ascertain the performance of a product and evaluate it against other products. The Pan-European Game Information (PEGI) presents a good example of this, wherein many factors are collated and distilled to produce one single number rating for a video game that the consumer sees. It is easier to design simple metrics where there is a clear consensus across industry and government on what the most important information is and what the metrics are.

Costs and time requirements: Government interventions can be costly. In particular, government interventions on the financial and regulatory incentives layer of the pyramid often require a commitment by governments to spend money, particularly when compared to a financial and regulatory disincentives approach under a harm-based approach where taxes may actually be a revenue generator for governments. It may be difficult to garner support for such interventions, particularly in the current economic climate.

Some interventions, such as State Investment Banks can offer a return on investment for the government which can provide an incentive for intervention.

3.2.2.2. Enablers

Enablers are factors that make it more likely that governments will develop and successfully implement a market shaping approach.

Good understanding of the market: Information on how well the market is performing and a robust understanding of underlying incentives can facilitate the success of market shaping approaches. In particular, this applies to financial and regulatory incentive-based interventions where, for example, tax credits need to be set at an appropriate level to incentivise businesses to act. By attaining a good understanding of the market, governments are better able to design effective interventions, and monitor the impact of these interventions over time.

Existing interest: Where there is existing demand for policy action on well-being from consumers, and buy-in from businesses, governments may be more likely to adopt interventions. It may be seen as politically favourable for the government and they are likely to attract greater support from wider market players if there is existing interest.

Collaborative approach: Collaboration across regulators can facilitate successful development and implementation of a market shaping approach, in particular where the regulatory landscape is complex and a number of regulatory bodies are involved. For example, the UK's Competition and Markets Authority (CMA) and the Office of Communications (OFCOM) are collaborating to fuse their work on competition with their work on online harms in order to deliver interventions that protect consumers but also promote competition.[60]

The role of wider market players: Wider market players can also facilitate the adoption of a market shaping approach by governments. These groups can be pivotal actors to build the evidence-base and can be effective at influencing policy making.[61] For example, there are 'knowledge-brokering' organisations, such as think tanks, universities, NGOs and professional bodies, which inform policy decisions through their research.[62] Within the fields of digital technology and children, an expert interviewee noted the plethora of academic and civil society organisations that are raising well-being as an issue.

Wider market players can assist with developing the tools and levers that governments can use to adopt a market shaping approach. For example, as mentioned above, D-seal provides recognised certification for businesses and is an independent organisation. Another example is Common Sense Media (CSM), which provides specific ratings for children's movies and TV shows, which, in theory, could be used by governments wanting to implement formal labelling programmes. Where tools are developed by third-party organisations, governments can accredit them, instead of developing new ones. For example, Ofgem, the UK's energy regulator, accredits price comparison websites for energy suppliers.[63]

Consumer groups can also play a role. For example, the UK's consumer champion, 'Which?', publishes comparisons between brands for products, and evidences bad consumer practice. This can stimulate government intervention where a product is found to consistently score poorly in tests.

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[60] Competition and Markets Authority & OFCOM. (2022). Online safety and competition in digital markets: a joint statement between the CMA and Ofcom.
[61] Grossmann, M. (2012). Interest group influence on US policy change: An assessment based on policy history. *Interest Groups & Advocacy*, *1*(2), 171–192.
[62] Hernando, M. G., Pautz, H., & Stone, D. (2018). Think tanks in 'hard times' – the Global Financial Crisis and economic advice. *Policy and Society*, *37*(2), 125–139.
[63] See Ofgem's list of accredited suppliers, for example.

Business groups can give advice to businesses to help them adapt once interventions are introduced. For example, the Federation of Small Businesses (FSB) provides small businesses with support and advice.

3.3. Case study deep-dive

3.3.1. Case study 1: Product labelling

Type of policy intervention
Information.

Key takeaways

1. Governments use labelling schemes to empower consumers by increasing the transparency of product features that are relevant to policy aims.
2. There is evidence that a majority of businesses still use labels even when schemes are voluntary.
3. Schemes are more likely to be successful when the design is simple and additional measures, such as user testing and providing supporting information, are implemented to ensure the content is understood by consumers.
4. Labelling schemes work best when implemented alongside a package of complementary policies. For example, prizes can be offered to those already performing well to encourage them to continue to innovate.

What are they?

Product labels are a type of information-based policy intervention. They provide a measurement of a product's features or performance, particularly those hidden to a customer at point of purchase, in a standardised, easy to understand format. Labelling schemes are popular within certain product categories. Examples include energy efficiency of home appliances, such as the EU's energy labelling scheme[64] (see Image 2) and Japan's Top Runner Programme,[65] nutritional quality of a food product, such as Nutri-Score (see Image 3) used in multiple regions such France and Singapore,[66] and hygiene ratings of food premises, such as the FSA's food hygiene ratings in the UK.[67]

In the literature, labels and certifications (see Case study 5) are often used

[64] European Commission. (*n.d.*). About the energy label and ecodesign.
[65] FuturePolicy.Org. (*n.d.*). Japan's Top Runner Programme.
[66] Santé publique France. (2022). Nutri-Score.
[67] Food Standards Agency. (2022). Food Hygiene Rating Scheme.

interchangeably as getting certified can result in a company receiving a 'label' to put on their website or product. For the purposes of this report, we will distinguish between the two and refer to 1) 'labels' when a product or service is evaluated and categorised on a linear scale (e.g. A to G); 2) 'recognised certification' when an organisation is evaluated and the outcome is binary (e.g. certified or not).

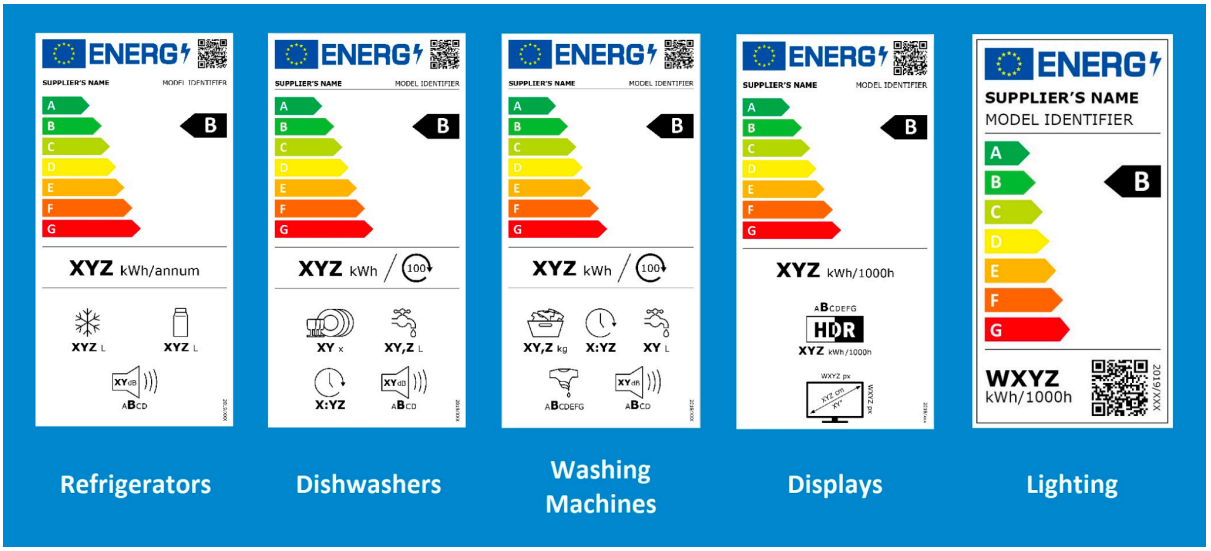

Image 2: EU Energy label (latest rescaled versions as of 2021)[68]

Image 3: Nutri-Score label for a category 'A' product in France[69]

How could they apply to digital technology and children's well-being?
Labels could be used to denote that a digital product has demonstrated that it has considered models of well-being and responded to that model. The sophistication of these labels is something that could develop over time; starting off simple, with

[68] European Commission. (2021). European energy labels: rescaling and transition periods.; Image from: PowerIntegrations. (*n.d.*). European Commission Energy Efficiency Label Reform.
[69] Image from: Wikipedia. (2022). Nutri-Score.

baseline thresholds for primary elements which could later evolve into a tiered scale. The labels would require a moderate level of supporting information so consumers can use the contents appropriately to make informed purchase decisions. User-testing and piloting would be crucial during the development stage as consumers would need to act on the information provided for the label to be effective. The design of the label and accompanying information should also take into consideration whether parents or children are the main target audience for the label – this is likely to vary depending on the product/service type and age group.

Evidence of impact

Consumers

Evidence for the impact of product labelling on purchase decisions is mixed. On one hand, evidence from eight regions estimates that the EU energy labels have driven an increase in demand and availability of high efficient appliances.[70] For example, since the scheme has been implemented in Denmark, sales of high energy efficient cold appliances have increased by 42%, while low efficiency cold appliance sales have decreased by 45%.[71] This is in part due to the labels achieving high levels of trust and recognition among consumers (93% of consumers recognised the label in 2019 and 93% of French consumers support the use of Nutri-Score).[72] They also enable consumers to easily compare and identify the most efficient appliances within a product category. In France, 57% of consumers have reported to have healthier purchasing habits as a result of Nutri-Score,[73] and analysis of three randomised controlled trials has found Nutri-Score labels reduce purchasing of processed or packaged foods.[74]

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[70] Schleich, J., Durand, A., & Brugger, H. (2021). How effective are EU minimum energy performance standards and energy labels for cold appliances?. *Energy Policy*, *149*, 112069.
[71] Bjerregaard, C., & Møller, N. F. (2019). The impact of EU's energy labelling policy: An econometric analysis of increased transparency in the market for cold appliances in Denmark. *Energy Policy*, *128*, 891-899.
[72] European Union. (2019). Eurobarometer: Europeans Attitudes on EU Energy Policy.; Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION.; de Ayala, A., & Solà, M. D. M. (2022). Assessing the EU Energy Efficiency Label for Appliances: Issues, Potential Improvements and Challenges. *Energies*, *15*(12), 4272.
[73] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION
[74] Egnell, M., Galan, P., Fialon, M., Touvier, M., Péneau, S., Kesse-Guyot, E., ... & Julia, C. (2021). The impact of the Nutri-Score front-of-pack nutrition label on purchasing intentions of unprocessed and processed foods: post-hoc analyses from three randomised controlled trials. *International Journal of Behavioural Nutrition and Physical Activity*, *18*(1), 1-12.

On the other hand, even when labels are well recognised by consumers, they do not always increase purchase of the top-rated products. Other evidence has also shown that even when labels have positively influenced purchase choices,[75] they may not always shift subsequent consumption behaviours, such as reducing energy use, and therefore fail to achieve their policy aims.[76]

Reasons that may explain the mixed evidence of impact include variance in labelling design, product category, the ease of switching provider, and region. In addition, preferences and choice factors vary among consumers; one public policy expert we interviewed suggested an appliance's efficiency is likely considered second to the up-front cost, functionality, and design, thus reducing its impact on purchase decisions and subsequent behaviour.

In 2021, the EU energy labels were rescaled from A+++ – D, to A – G to make it easier for consumers to distinguish between top-rated goods. A choice experiment in Germany with 1,000 homeowners has found the rescaled version increased willingness-to-pay for top-rated cold appliances,[77] although the degree varies by region and in line with different consumer profiles, years of study, and appliance types.[78]

The EU energy labels are estimated to reduce annual energy bills by €285 per year per household,[79] but post-hoc evaluations that show the actual impact on energy bills were not found during this study. In contrast, several studies have shown those eating foods with better Nutri-Scores had significantly lower risk of chronic conditions, such as obesity and breast cancer.[80]

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[75] Hirai, Y. et al. (2019). Effect of energy saving information display on air conditioner product selection – analysis based on online randomised controlled trials.; Skourtos, M., Damigos, D., Tourkolias, C., & Kontogianni, A. (2021). Efficient energy labelling: the impact of information content and style on product choice. *Energy Efficiency*, *14*(6), 1-19. Chicago

[76] d'Adda, G., Gao, Y., & Tavoni, M. (2021). Are energy labels good enough for consumers? Experimental evidence on online appliance purchases. Preprint.; Waechter, S., Sütterlin, B., & Siegrist, M. (2015). Desired and undesired effects of energy labels—An eye-tracking study. *PloS one*, *10*(7), e0134132.

[77] Faure, C., Guetlein, M. C., & Schleich, J. (2021). Effects of rescaling the EU energy label on household preferences for top-rated appliances. *Energy Policy*, *156*, 112439.

[78] Schleich, J., Durand, A., & Brugger, H. (2021). How effective are EU minimum energy performance standards and energy labels for cold appliances?. *Energy Policy*, *149*, 112069.

[79] European Commission. (*n.d.*). About the energy label and ecodesign.

[80] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION

Businesses & wider society

Labelling schemes have driven innovation, competition, and improved market efficiency, as indicated by public policy experts we interviewed, as well as an audit that found lower efficiency categories had become redundant across many product groups due to the increases in efficiency.[81] One reason why we have seen these market impacts is because labels improve transparency of particular product features, so manufacturers are encouraged to develop cost-effective methods to improve the product efficiency or nutritional quality. In turn, their products can then receive higher ratings in line with changing consumer preferences.[82]

In relation to wider impact on society, Nutri-Score has been found to reduce health inequalities by having a larger positive impact on consumers with low nutritional knowledge.[83]

Implementation factors

Barriers

Developing measures for labels can be a complex and lengthy process, including multiple stages of consultation (see Image 4 below, for example). One audit found that significant delays to the regulatory process for EU energy efficiency labels (from 3.5 to 6-8 years) has reduced the policy's effectiveness, as opportunities were missed to deliver energy savings sooner. This can be problematic for fast-paced markets where labelling requirements may become outdated, curtailing the policy's impact.[84]

[81] European Court of Auditors. (2020). Special report: EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance.
[82] European Commission. (2021). In focus: The improved EU energy label – paving way for more innovative and energy efficient products.
[83] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION
[84] European Court of Auditors. (2020). Special report: EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance.

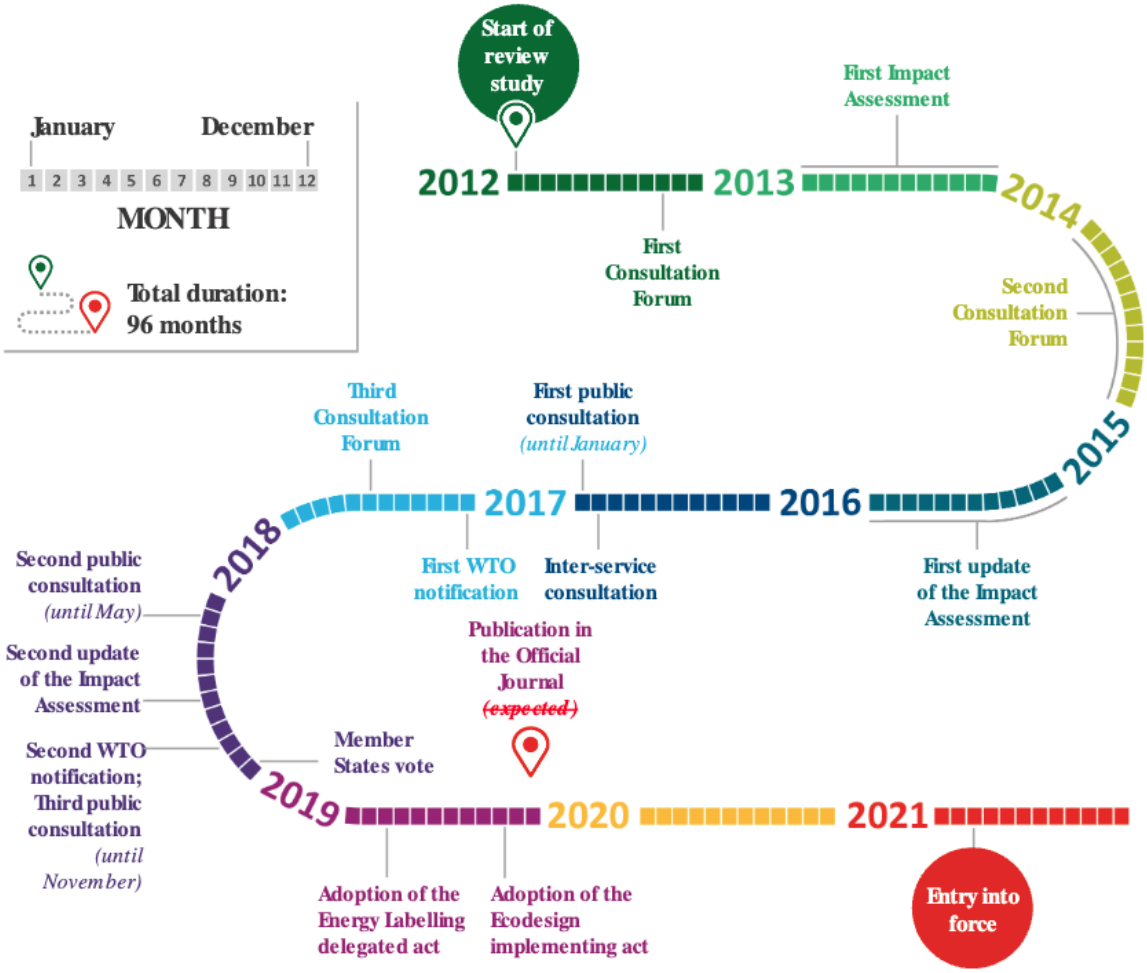

Image 4: the actual regulatory process for adopting Ecodesign and energy-labelling implementing measures for electronic displays.[85]

Once implemented, a barrier moderating the label's impact is consumer understanding of the label's information. For example, some consumers have misunderstood that EU energy efficiency labels cannot be used to compare the efficiency of different size products within the same product category (e.g. a 47" monitor to a 52" monitor).[86] Furthermore, the relationship between the information given on the label (e.g. efficiency or nutritional ratings) and the target behaviour (e.g. product choice and energy consumption or portion size) is not always well understood, due to the content's technicality and units of measurement that are

[85] European Court of Auditors. (2020). Special report: EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance.

[86] de Ayala, A., & Solà, M. D. M. (2022). Assessing the EU Energy Efficiency Label for Appliances: Issues, Potential Improvements and Challenges. *Energies*, *15*(12), 4272.

detached from consumption.[87]

Enablers

For consumers, issues related to misunderstanding at the point of usage can be mitigated by: 1) using simple, intuitive label designs (e.g. colour-coded scales; easily recognisable icons); 2) employing rigorous consumer testing as part of label development, providing supporting information to facilitate correct interpretation; and 3) converting technical contents into relatable metrics (e.g. monetary information).[88] One public policy expert we interviewed also suggested subsidies or rebates on purchases of top-rated products, such as the US' Energy Star rebate product finder,[89] can help increase awareness and encourage uptake. However, an evaluation of this rebate programme has estimated that longer-term impacts are small.[90]

For manufacturers or businesses, adoption of labelling schemes is greater when they are mandated to provide and display the information, such as with EU energy efficiency labels.[91] The differences in display of the FSA's hygiene labels in food premises in Wales (mandatory) and England (voluntary) illustrates this well. In 2017, display rates in Wales were 84% compared to 49% in England. Similarly in 2020, Nutri-Score (a voluntary scheme in France) was used by 415 food operators, who represent around 50% of market share in sales volume.[92] Low or zero cost for obtaining labels was also flagged by a public policy expert as important.

This policy expert also flagged that the monitoring, evaluation, and iteration of labelling policies helps keep them appropriate to current market innovation, an important factor for sustaining impact. For example, in response to appliance manufacturers developing products slightly above the efficiency threshold, Japan's

[87] Waechter, S., Sütterlin, B., & Siegrist, M. (2015). Desired and undesired effects of energy labels—An eye-tracking study. *PloS one*, *10*(7), e0134132.; Ter Borg, S., Steenbergen, E., Milder, I. E., & Temme, E. H. (2021). Evaluation of nutri-score in relation to dietary guidelines and food reformulation in the Netherlands. *Nutrients*, *13*(12), 4536.

[88] Blasch, J., Filippini, M., & Kumar, N. (2019). Boundedly rational consumers, energy and investment literacy, and the display of information on household appliances. *Resource and Energy Economics*, *56*, 39-58.; de Ayala, A., & Solà, M. D. M. (2022). Assessing the EU Energy Efficiency Label for Appliances: Issues, Potential Improvements and Challenges. *Energies*, *15*(12), 4272.

[89] Energy Star (n.d.). Special offers and rebate finder.

[90] Houde, S., & Aldy, J. E. (2017). Consumers' response to state energy efficient appliance rebate programs. American Economic Journal: Economic Policy, *9*(4), 227-55.

[91] Europa. (2021). Energy label.

[92] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION

Ministry of Economy, Trade, and Industry revised their retailer labelling scheme from a discreet 5 star scale (e.g. 1, 2, 3…) to a continuous 41-point scale (3.1, 3.2, 3.3…).[93] What is important is that the scale remains familiar and easy to understand among consumers.

Policies complementary to labelling schemes also help facilitate their implementation and impact. In a recent consultation by BEIS, the majority of 37 respondents agreed that labelling schemes, specifically in relation to voluntary policies for improving transparency of product emissions, are insufficient alone, and could work best as part of a wider package of measures.[94] One expert we interviewed suggested that these schemes should account for businesses both behind and ahead in the efforts. For example, the EU energy efficiency labels are supported by Ecodesign, which sets mandatory minimum standards for energy efficiency, incentivising businesses that may be behind. Ecodesign also includes other policies designed to minimise a product's impact on the environment, such as requirements to improve the repairability of products.[95] For businesses who are ahead, labelling schemes that acknowledge higher standards, such as Japan's Energy Conservation Grand Prize,[96] can be used.

Similarly, policy implementation, evaluation and development can be facilitated when governments or regulators provide accessible guidance for businesses alongside the policy, such as online tools to help with implementation and evaluation.[97]

Other types of support such as governing bodies can enable the adoption and implementation of an existing labelling scheme in new regions. For example, the establishment of a transnational governance body for the EU energy efficiency label has helped coordinate its rollout from France across Europe, maximising consistency for manufacturers and consumers.[98]

Common incentives behind labelling schemes are to help deliver overarching policy

[93] METI. (2020). "Report on Revision of the Label Display Program for Retailers" Compiled.
[94] BEIS. (2022). Towards a market for low emissions industrial products: Call for Evidence summary of responses.
[95] Waechter, S., Sütterlin, B., & Siegrist, M. (2015). Desired and undesired effects of energy labels—An eye-tracking study. *PloS one*, *10*(7), e0134132.; European Commission. (*n.d.*). About the energy label and ecodesign.
[96] ECCJ. (n.d.). Awarding Programs to Energy Conservation Efforts.
[97] EPATEE. (2019). Evaluating energy savings from mandatory energy labelling for household appliances using billing analysis.
[98] Gouvernement français. (2021). NUTRI-SCORE: ASSESSMENT REPORT AFTER THREE-YEAR OF NUTRI-SCORE IMPLEMENTATION

aims, such as the EU's target of 32.5% energy savings by 2030[99]; as part of this target, energy efficiency labels are one of many levers to help reduce household emissions. Other incentives include driving forward consumer protection agendas by improving transparency, and empowering consumers at the point of sale.

3.3.2. Case study 2: Regulatory sandboxes

Type of policy intervention
Financial and regulatory incentives.

Key takeaways

1. Regulatory sandboxes foster an innovative environment, allowing businesses to test new products/services without regulatory constraints.
2. Sandboxes can increase competition in the market and improve consumer choice.
3. The key for effective implementation of sandboxes is to balance the protection of consumer well-being while allowing for innovation.
4. Sandboxes may allow the regulator and government to keep abreast of the latest developments in fast-moving digital technology markets.

What are they?

Regulatory sandboxes allow firms to work with the regulator to trial innovative products, services and business models with consumers in a 'real-world' environment. They are characterised by relaxed regulatory requirements, meaning that businesses need not conform fully to regulations while they test the viability of their services. Typically, sandboxes are constrained by criteria on which products or services can be offered through them and must be pre-approved by the regulator. They are usually time-limited and may impose limits on the number of consumers that can use the product or service in the sandbox.

Regulatory sandboxes are a relatively new phenomenon, first established by the UK and Australia in 2016.[100] They have been adopted globally, with 73 sandboxes being announced between 2016 to 2020.[101]

How could they apply to digital technology and children's well-being?
An expert interviewee suggested that, in theory, they could be used within digital technology and children's well-being by relaxing other regulatory requirements for a

[99] de Ayala, A., & Solà, M. D. M. (2022). Assessing the EU Energy Efficiency Label for Appliances: Issues, Potential Improvements and Challenges. *Energies*, *15*(12), 4272.
[100] World Bank. (2020). Global Experiences from Regulatory Sandboxes.
[101] Ibid

product, provided that the product promotes children's well-being.

However, another expert interviewee flagged that in reality there may be limited opportunities for relaxing regulations in this area. This is because there are few regulations that, if relaxed, would not cause harm. Additionally, many countries do not have formalised regulation at present on children's well-being within digital technology.

At the same time, some sandboxes, like the one developed by the Information Commissioner's Office (ICO) in the UK, focus more on providing access to their support and expertise and increasing confidence in the compliance of the final product/service, rather than relaxing existing requirements. This sandbox model could potentially be applied to digital technology and children's well-being but further research is needed to understand the feasibility and how it could work in practice.

Evidence of impact

Consumers

An expert interviewee outlined that consumers benefit from increased choice as a result of the sandbox. Firstly, this is due to the increase in the quantity of products available as sandboxes allow for quicker routes to the market for businesses. Secondly, there is an increase in the quality of products available as businesses can test innovative methods in the sandbox, such as greater functionality and better features of FinTech products.

Another benefit identified in an expert interview was the reduction in costs that may arise from increased competition as a result of the sandbox. This is because the sandbox allows new entrants to the market who may otherwise have struggled to overcome the regulatory burdens imposed.

A possible detrimental impact to consumers may arise due to the nature of the sandbox. As there is a relaxation of regulatory requirements within the sandbox, consumers may be subjected to an increased likelihood of harm.[102] In order to mitigate this, consumer protection safeguards are imposed, alongside limited time periods within which the product or service can remain in the sandbox. The Australian Enhanced Regulatory Sandbox also imposes a limit on the monetary value of services that can be sold to any single consumer by a product or service within

[102] Allen, H. J. (2019). Regulatory Sandboxes. *George Washington Law Review*, *87*(3), 579–645.

the sandbox to limit the potential harm.[103]

Businesses & wider society

The key benefit to businesses is the reduced costs and faster entry to market resulting from the relaxation of the regulations, as identified by an expert interviewee. As mentioned above, this may also result in reduced barriers to entry into the market leading to more competition. The sandbox also increases competition by allowing a range of entrants into the market, not limited to market players with higher existing market share.[104]

Another potential benefit arises from greater guidance from the regulator, particularly where the sandbox is embedded within an innovation hub that assists businesses with navigating the sandbox. This may reduce regulatory uncertainty and therefore the regulatory burden imposed on businesses.[105]

An expert interviewee also commented that the impact may reach businesses that do not participate in the sandbox, catalysing them to pursue innovation to stay competitive relative to the participants.

Implementation factors

Barriers

As sandboxes are typically voluntary, their effectiveness is linked to their adoption by businesses.[106] As outlined above, once some businesses start to use the sandbox, this can drive improvements within the market as a whole, but the initial adoption is a barrier.

Criteria for getting into the sandbox can also be a barrier. Too many constraints on which products or services can be used within the sandbox may limit the impact of this tool.[107]

Lack of clarity around the exact responsibilities of different regulators may impose a barrier on the implementation of sandboxes. Where markets have many different regulators without clearly defined responsibilities, it may be difficult to coordinate the

[103] Australian Securities & Investments Commission. (*n.d.*) INFO 248 Enhanced regulatory sandbox.
[104] Allen, H. J. (2019). Regulatory Sandboxes. *George Washington Law Review*, *87*(3), 579–645.
[105] Goo, J. J., & Heo, J.-Y. (2020). The Impact of the Regulatory Sandbox on the Fintech Industry, with a Discussion on the Relation between Regulatory Sandboxes and Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(2), 43.
[106] Allen, H. J. (2019). Regulatory Sandboxes. *George Washington Law Review*, *87*(3), 579–645.
[107] Ibid

sandbox and therefore difficult for businesses to know which regulator to approach and which regulations are being relaxed. For example, in the US, there are many financial regulators, making it difficult to determine which regulator should be responsible for the sandbox and how the balance of power should be divided.[108]

Sandboxes can also be complex to implement, requiring in-depth knowledge of an industry and understanding of regulations.[109] An expert interviewee identified the need to strike a balance between the openness of the sandbox and the protection of consumers. If the sandbox is too constrained, it limits innovation, but if it is unrestricted it may allow for products/services that are detrimental to consumer welfare. The interviewee further elucidated how this could become an issue when attempting to 'scale-up' the sandbox, as increasing the volume of applicants may require widening the entry criteria.

Enablers

To implement sandboxes, there should be a clear governance structure in place.[110] This means having a single regulator with a clearly defined mandate: who sets the regulations that are to be relaxed in the sandbox and then has a clear process for application and admission to the sandbox. There should be ongoing monitoring arrangements in place to ensure those in the sandbox are upholding consumer well-being even where some regulations are relaxed.

Sandboxes may save time and money for regulators as they need not review and grant individual exceptions for businesses as outlined by an expert interviewee. Instead, the sandbox provides a designated route for businesses and requires less case-by-case input.
They may also allow the regulator and government to keep abreast of the latest developments in the market.[111] As the products/services being tested are typically novel and innovative, they allow the regulator to track trends in the industry which may assist with the implementation of further regulations.

A broader incentive identified in an expert interview was the impact of regulatory sandboxes on the wider economy, through fostering and facilitating competition.

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[108] Ibid
[109] Veseli, A., Moser, S., Kubeczko, K., Madner, V., Wang, A., & Wolfsgruber, K. (2021). Practical necessity and legal options for introducing energy regulatory sandboxes in Austria. *Utilities Policy*, *73*, 101296.
[110] Consultative Group to Assist the Poor. (2020). How to Build a Regulatory Sandbox.
[111] Allen, H. J. (2019). Regulatory Sandboxes. *George Washington Law Review*, *87*(3), 579–645.

3.3.3. Case study 3: Comparison tools

Type of policy intervention
Information.

Key takeaways

1. Comparison tools improve consumer decision making and encourage businesses to innovate, driving improvements in the market.
2. However, these tools are only effective to the extent that they are adopted by both consumers and businesses.
3. Ensuring the metrics within comparison tools are easy to understand is imperative to their adoption.
4. Where a third-party comparison tool can be accredited, this approach has a lower cost to governments compared to other interventions.

What are they?

Comparison tools are independent platforms which facilitate comparison of similar products or services by evaluating them against a common set of criteria (e.g. price, performance and quality indicators) and helping consumers rank them.

There are a number of third-party organisations across different countries providing this, such as 'Which?' in the UK, 'Consumer Reports' in the US and 'Product Review' in Australia.

Government intervention can take the form of creation of new tools, or accreditation and promotion of existing third-party comparison tools. An example of the former is the UK Competition & Market Authority's banking service indicator, and an example of the latter is the accreditation of comparison sites by the UK's Office for Communications (OFCOM).[112]

How could they apply to digital technology and children's well-being?

A comparison tool for children's products could be developed. Common Sense Media already uses a similar approach for their ratings for TV shows and movies. A comparison tool could use indicators of well-being as the metrics against which

[112] Competition and Markets Authority. (2021). Banks ranked in latest customer survey results. (n.d.). GOV.UK.;
Laycock, G. (2004). The UK car theft index: An example of government leverage. *Laycock, G. (2001) The UK Car Theft Index: An Example of Government Leverage. In: Maxfield, M. and Clarke, R,V., (Eds.) Understanding and Preventing Car Theft. Crime Prevention Studies (17). Criminal Justice Press/ Willan Publishing, Uffculme, UK, Pp. 25-44.;*
Ofcom. *(n.d.)*. Price comparison;

consumers can compare different products and businesses.

One of the key limitations of this tool is that consumers need to be aware of it, be able to use it, and finally act on the information it provides. Overcoming these behavioural barriers by involving users in the development and testing, as well as by taking measures to raise awareness would be critical for the tool to have a sizeable impact.

Evidence of impact

Consumers

The primary benefit for consumers arises from the increased quality of decision-making and increased quality of products/services available.[113] Firstly, consumers are provided with more information, allowing them to choose between multiple providers. As these comparison tools are either created or regulated by the government, they may also be of higher quality as they are less subject to bias that may be present in other consumer comparison tools. Secondly, as comparison tools drive improvements in the products/services offered by businesses, consumers benefit from an overall rise in standards.

Having said this, the quality of decision-making evidently rests on the metrics included within the comparison tool and the attention that consumers pay to each factor. If consumers are focussed primarily on price, they may overlook other factors regarding the quality of the product. This may result in an overall reduction in consumer welfare as businesses will focus on reducing prices, potentially at the expense of quality. And consumers do not always act on information: one study on the CMA's banking league tables for customer service suggested that consumers would not consider switching their bank even if it performed poorly.[114]

The impact of comparison tools on the prices paid by consumers is nuanced. Some evidence suggests that comparison tools may increase competition in the market and reduce barriers to entry. With more entrants to the market, prices should fall. Other evidence suggests that some businesses may pass on costs to consumers, in particular the fees charged by third party comparison sites to host a business' offerings.

[113] Competition & Markets Authority. (2017). Digital comparison tools market study.
[114] YouGov. (2018). Will the CMA's service quality rankings encourage people to switch banks?

Businesses & wider society

Comparison tools may encourage innovation by firms.[115] For example, in the Dutch energy market, comparison websites have allowed marginal consumers (i.e. those with differing tastes to the 'mainstream' consumer) greater information provision, which grants them greater decision-making abilities. This encourages businesses to produce and promote new technologies that appeal to this group to capture greater market share.

Businesses can access a greater market, particularly for smaller companies less able to compete with larger and more well-known brands as the comparisons are based on performance against defined metrics rather than familiarity.[116] There is some evidence to suggest that comparison tools can promote competition and reduce barriers to entry in markets through bringing consumers and producers together more easily, thereby lowering costs for businesses.[117] Comparison tools can also be used as a measure of a business' reputation and allows them to set themselves apart from competitors, thereby improving their sales.[118]

Another impact on businesses is the standardisation of data across an industry as all businesses are evaluated with the same metrics.[119] Standardised data across the industry may provide more opportunities for research and collaboration.

Government regulation of existing comparison tools may improve the credibility of these sites, allowing them to have greater reach and impact as they are trusted by more consumers.[120]

Implementation factors

Barriers

A key barrier to the implementation of comparison tools is the range of inputs required to create the comparison site.[121] One of our expert interviewees stated that if the metrics that form the basis of the comparison are not well-defined or easy to

[115] Mulder, M., & Willems, B. (2019). The Dutch retail electricity market. *Energy Policy*, *127*, 228–239.
[116] Laffey, D., & Gandy, A. (2009). Comparison websites in UK retail financial services. *Journal of Financial Services Marketing*, *14*(2), 173–186.
[117] The UK Regulators Network. (2016). Price comparison websites.
[118] Lyons, R. K., Chatman, J. A., & Joyce, C. K. (2007). Innovation in Services: Corporate Culture and Investment Banking. *California Management Review*, *50*(1), 174–191.
[119] Competition & Markets Authority. (2017). Digital comparison tools market study.
[120] House of Commons Energy and Climate Change Committee. (2015). Protecting consumers: Making energy price comparison websites transparent.
[121] Competition & Markets Authority. (2017). Digital comparison tools market study.

evaluate, businesses will struggle to use them and consumers will have difficulty interpreting them.

Some market players may have sufficient scale and reach to avoid using the comparison tool, as seen for Direct Line, a UK insurance company.[122] This means that some consumers may not use comparison sites as they would directly visit a business site. Moreover, even if consumers were to access the comparison tool, ensuring they act on the information presented within it can be a barrier to its effectiveness, particularly where there are infrequent or weak triggers to use the site.[123]

Enablers

Comparison tools need to be simple in order to work effectively, allowing consumers to interpret and act on results.[124] The UK Competition & Markets Authority recommends the use of BIT's EAST framework to achieve this, making comparison tools Easy, Attractive, Social and Timely.

The key incentive for governments to adopt this approach is the reduced cost to governments compared to other forms of intervention, particularly where a third-party comparison tool is accredited.

Wider market players

As outlined above, the role of third party comparison tools is particularly important for this intervention as they represent a lower-cost intervention for governments. The comparison tool would be responsible for collating data from businesses and using this to produce comparisons. Where third parties develop the comparison site, the role of government would be limited to accrediting the site, ensuring that it is evaluating products based on the correct criteria and is not biased in its reviews.

3.3.4. Case study 4: State Investment Banks

Type of policy intervention
Financial and regulatory incentives.

Key takeaways

1. State Investment Banks (SIBs) can promote investments in line with specific 'missions' which are designed to address societal issues.

[122] Laffey, D., & Gandy, A. (2009). Comparison websites in UK retail financial services. *Journal of Financial Services Marketing, 14*(2), 173–186.
[123] Competition & Markets Authority. (2017). Digital comparison tools market study.
[124] Competition & Markets Authority. (2017). Digital comparison tools market study.

2. They can promote well-being through improving the range of products available for consumers and the quality of those products.
3. They are complicated and costly to set up, though collaboration with the private sector may help to mitigate this.
4. The returns on investment that governments can make are an incentive for governments to establish SIBs.

What are they?

SIBs are banks established by the State which finance businesses. SIBs can be used for a variety of reasons, such as offsetting economic downturns.[125] However, the specific aspect of SIBs applicable here is their use for the promotion of investments in tackling societal problems, such as climate change.[126]

Examples of SIBs are the French BPI, German KfW, Chinese Development Bank, the European Investment Bank (EIB), and the Brazilian BNDES.

How could they apply to digital technology and children's well-being?

SIBs allow governments to move beyond a harm-based approach, wherein market failures are fixed, towards "shaping and creating new technologies, firms and sectors, and, ultimately, markets, all of which will help to address a societal challenge".[127]

A mission-oriented SIB could be created with a specific focus on promoting children's well-being. Businesses would apply to the government for investments through the SIB and would only be granted funding if they demonstrate they are promoting children's well-being.

One expert interviewee spoke of the potential for collaboration between the SIB and private venture capital (VC) funds to increase the pool of funding available, as well as allow the government to benefit from private sector expertise.

[125] Mazzucato, M., & Penna, C. C. R. (2016). Beyond market failures: The market creating and shaping roles of state investment banks. *Journal of Economic Policy Reform*, *19*(4), 305–326.
[126] Mazzucato, M. and Penna, C. (2015). The rise of mission-oriented state investment banks: the cases of Germany's KfW and Brazil's BNDES. ISI Growth.
[127] Mazzucato, M., & Penna, C. C. R. (2016). Beyond market failures: The market creating and shaping roles of state investment banks. *Journal of Economic Policy Reform*, *19*(4), 305–326: 315

Evidence of impact

Consumers

Through "actively creating and shaping markets and enabling activity that otherwise would not take place",[128] SIBs may create improvements to the quality of products available in the market, as businesses adapt their offerings to seek investment. As SIBs also allow for more entrants to the market, they may also increase the choice of products available to consumers.

Businesses & wider society

As finance becomes more available, barriers to entry are lowered, leading to greater competition within the market. Having said this, in the past, some SIBs have been criticised for picking larger incumbent firms or only picking winners, thus crowding out newer businesses.[129]

Acquisition of funding through a SIB can signal trust for a business which may then result in further private finance opportunities.[130] SIBs also play the role of the 'first or early mover' as they invest in new and innovative products or businesses.[131] As such, they may result in more private investment for subsequent future projects as the product or idea establishes a track record from which investment may follow.

Mission-oriented SIBs have the ability to lead to socially beneficial outcomes. For example, one of the projects within Germany's SIB, the KfW, is estimated to have reduced greenhouse gas emissions by 700,000 tons of CO2 equivalents per year, and reduced energy demand by 40%.[132]

SIBs may also lead to wider economic growth for society through promoting innovation.[133]

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[128] Macfarlane, L. and Mazzucato, M. (2018).State investment banks and patient finance: An international comparison. UCL IIPP. Pg 4

[129] Macfarlane, L. and Mazzucato, M. (2018).State investment banks and patient finance: An international comparison. UCL IIPP.

[130] Geddes, A., Schmidt, T. S., & Steffen, B. (2018). The multiple roles of state investment banks in low-carbon energy finance: An analysis of Australia, the UK and Germany. *Energy Policy*, *115*, 158–170.

[131] Ibid

[132] Mazzucato, M. and Penna, C. (2015). The rise of mission-oriented state investment banks: the cases of Germany's KfW and Brazil's BNDES. ISI Growth.

[133] Macfarlane, L. and Mazzucato, M. (2018).State investment banks and patient finance: An international comparison. UCL IIPP.

Implementation factors

Barriers

As SIBs require upfront investment, this may act as a barrier to their implementation as they may fail to garner sufficient support, particularly in the current economic climate. Additionally, they may be complicated to establish, requiring detailed knowledge of the market and of financing strategies.

An expert interviewee also outlined a barrier to their effectiveness stemming from how interested businesses are in the social purpose being promoted. If businesses are not, for example, interested in the promotion of children's well-being, they may not apply for funding through the SIB.

Enablers

SIBs need to be established with effective governance criteria and a clearly defined mandate.[134] Employees of the SIB should have detailed financial knowledge as well as an understanding of the investment area (e.g. digital technology).

Evaluation criteria for the SIB should be determined, focussed on "ongoing and reflexive evaluation of whether [the] system is moving in [the] direction of mission".[135]

Coupled with the above, an expert interviewee discussed the benefits of an approach where the government collaborates with private VC funds, which may help to overcome the complexity in establishing the bank, as the government can lean on private sector expertise.

A key incentive for the government is the ability for them to make a return on their investment. For example, BPI France made a profit of €1,106.5 million in 2021.[136]

SIBs also allow for more patient financing than private sector finance. This allows the government to take a longer term view on investments, thereby reducing its risk and allowing it to take on more ambitious investments.[137]

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[134] Mazzucato, M. and Macfarlane, L. (2019). Public investment banks could be a powerful tool for growth.
[135] Mazzucato, M. and Macfarlane, L. (2019). A mission-oriented framework for the Scottish National Investment Bank. UCL IIPP. pg 13
[136] BPI France. (2021). Annual report.
[137] Mazzucato, M. and Macfarlane, L. (2019). Public investment banks could be a powerful tool for growth.

3.3.5. Case study 5: Recognised certification

Type of policy intervention
Information.

Key takeaways

1. In the context of this report, certification programmes are similar to labels from Case study 1 but the outcome is binary (e.g. certified or not) and certification applies to an organisation rather than a product.
2. Developing a framework and a set of indicators that would cover a range of criteria related to digital technology is feasible, as shown by the example of D-seal.
3. Certification standards can be developed by private or non-government organisations. This requires cooperation between governments, NGOs, private sector, and industry representatives.
4. Governments can embed certification programmes within public procurement, ensuring products are only procured through businesses that are certified.

What are they?

A recognised certification is provided to a business that meets the required standards. Such programmes typically also provide information and links to resources on how to achieve the required standards. This tool is similar to labelling but does not have a scale (i.e. a business either gets certified or not, there are no grades or categories). Also, labels usually apply to specific products, while certifications can sometimes be obtained for the whole organisation.

For example, the B Corp certification is based on a non-profit network certifying companies that meet certain standards of social and environmental performance, accountability, and transparency across different activities and stakeholders, from employees to its supply chain.

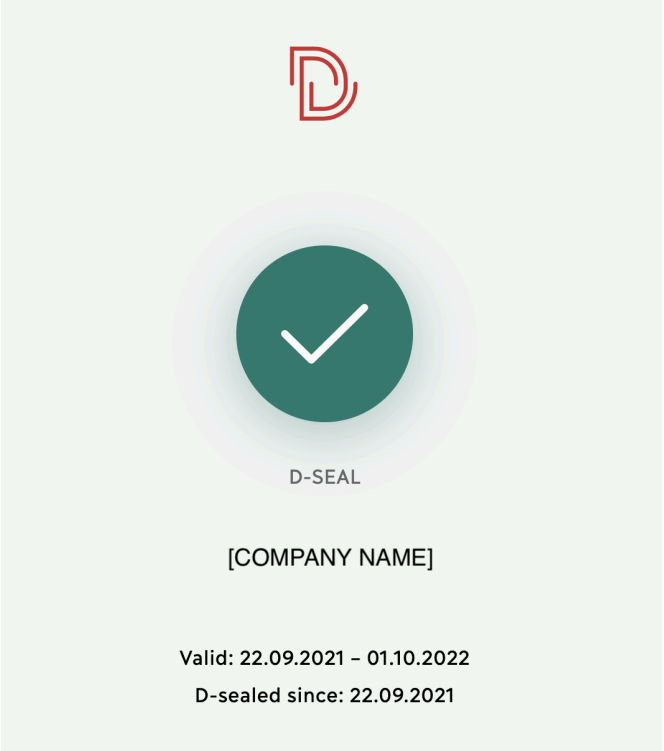
Certificates based on meeting certain Voluntary Sustainability Standards have been growing in popularity with more than 320 standards as of August 2022 (although not all of the standards have certification programmes).[138]

While most certification programmes are designed by non-governmental organisations (NGOs) or private companies, there are some programmes developed by the public sector like the London Mayor's Good Work Standard in the UK. This standard includes a set of best employment practices across four areas, including

[138] International Trade Centre. (2022). Standards map.

fair pay and conditions, workplace well-being, skills and progression, and diversity and recruitment.

Finally, D-seal is an example of a certification being developed for and applied in the digital industry. It is a Danish programme for IT security and responsible use of data. It is a private company but was developed in collaboration with the public sector and business organisations.



Images 5 & 6: Examples of D-seal and B-Corp certification[139]

How could they apply to digital technology and children's well-being?

A certification programme could be developed for digital technology companies to indicate that they meet certain standards with respect to children's well-being. In principle, this programme could be similar to D-seal but with a focus on children and well-being.

Evidence of impact

Importantly, while the movement has existed for more than a decade, there is lack of causal and longitudinal research investigating the impact on practices within organisations, as well as on different stakeholders (e.g. consumers and investors). The

[139] Examples of certification from: D-seal & B-Corp

studies discussed in this section are correlational or qualitative.

Consumers

Similar to labels, voluntary certification standards can help reduce information barriers for consumers and help people make purchasing decisions in line with their preferences and values.[140] Also, there is evidence that sustainability certification programmes can have a positive impact on quality.[141]

In terms of the impact on consumer decisions, a small experimental study in India found that participants had the highest average willingness to buy products that had two ethical certifications (out of the two tested in the experiment).[142] A data analysis study in the US found that some consumers were ready to pay for a product certified for energy efficiency, in excess of the potential energy savings from that product.[143]

Finally, consumers may be more willing to prefer certified products when they understand what the certification means and are more familiar with the programme, regardless of whether certification is done by private or public organisations.[144]

Qualitative research with consumers in Chile found that social and environmental responsibility were the main motivators for purchasing from B Corps, as well as feeling of self-satisfaction and reassurance about the quality of products.[145]

Businesses & wider society

There is mixed evidence on the impact of certification programmes on businesses.

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[140] Roberts, T. M. (2013). The Rise of Rule Four Institutions: Voluntary Standards, Certification and Labeling Systems. Ecology LQ, 40, 107.

[141] Aidenvironment, WWF and ISEAL. (2018). The Systemic Impacts of Voluntary Sustainability Standards

[142] Chatterjee, S., Sreen, N., Rana, J., Dhir, A., & Sadarangani, P. H. (2021). Impact of ethical certifications and product involvement on consumers decision to purchase ethical products at price premiums in an emerging market context. International Review on Public and Nonprofit Marketing, 1-26.

[143] Houde, S. (2014). How consumers respond to environmental certification and the value of energy information (No. w20019). National Bureau of Economic Research.

[144] Aprile, M. C., & Punzo, G. (2022). How environmental sustainability labels affect food choices: Assessing consumer preferences in southern Italy. Journal of Cleaner Production, 332, 130046.

[145] Bianchi, C., Reyes, V., & Devenin, V. (2020). Consumer motivations to purchase from benefit corporations (B Corps). Corporate Social Responsibility and Environmental Management, 27(3), 1445-1453.

Evaluations of voluntary sustainability standards certifications suggest that they can help reduce operational costs and improve reputation and labour conditions.[146]

However, practices may still deviate from the standards in between or after certification assessments, or not improve beyond the minimum requirements. For example, a case study of four B Corps in Brazil concluded that these companies did not further improve their governance mechanisms and other internal processes after receiving certification.[147]

On the other hand, analysis of BI Impact Assessment scores in the US found that B Corps changed their sets of practices as they went through assessment and reassessment, and the changes happened in shifts rather than incrementally.[148] A qualitative study of 46 companies that pursued B corp certification suggested that joining a prosocial certification programme can influence evaluation of business opportunities via validating the prosocial identity of the company and leading to greater reflexivity by management.[149]

An important limitation is that it may take a long time for voluntary programmes to get sufficient scale. In particular, the B Corp movement started certifying companies in 2007 and had more than 5,200 certified companies in 83 countries in August 2022.[150] This is still a very small proportion of the millions of companies existing worldwide.[151]

One potential consideration for businesses and investors is whether participating in a voluntary certification programme is associated with better financial performance. One study found that B Corps' average revenue growth rate was significantly higher than that of public companies in the same industry but was similar to that of small-to-medium size private firms. There was no significant difference in employee productivity growth rate between B Corps and their public and private

[146] Aidenvironment, WWF and ISEAL. (2018). The Systemic Impacts of Voluntary Sustainability Standards

[147] Villela, M., Bulgacov, S., & Morgan, G. (2021). B Corp certification and its impact on organizations over time. Journal of Business Ethics, 170(2), 343-357.

[148] Sharma, G., Beveridge, A. J., & Haigh, N. (2018). A configural framework of practice change for B corporations. Journal of Business Venturing, 33(2), 207-224.

[149] Conger, M., McMullen, J. S., Bergman Jr, B. J., & York, J. G. (2018). Category membership, identity control, and the reevaluation of prosocial opportunities. Journal of Business Venturing, 33(2), 179-206.

[150] B-Corporation

[151] Statista. (*n.d.*). Estimated number of companies worldwide from 2000 to 2020.

competitors.[152]

Another study found that employee ownership and employee involvement were positively associated with external stakeholder engagement in certified B Corps but not in companies that completed the B Lab Impact assessment without receiving the certifications.[153]

While B corp certification is provided by a non-profit organisation B Lab, the B movement aspires to influence public policy: "to promote behaviour change, structural change and cultural change at large scale".[154] The movement has a number of policy initiatives around the world which include successfully introducing a new corporate form, the benefit corporation, passed via legislation in more than 40 US States and a number of other countries. This legal structure aims to protect a company's social impact mission even if the leadership changes or the company raises new capital.

There is limited evidence on how recognised certification affects investment decisions. Survey results suggest that about 30% of respondents are willing to invest in benefit corporations even when traditional companies have higher returns.[155] However, this willingness may not translate into decisions made by real investors. On the positive side, field experiments suggest that, in general, investors are willing to pay more for investments with some positive social impact while not being sensitive to the size of the impact.[156]

Implementation factors

Barriers

Similar to product labels, developing measures can be a complex and lengthy process. For example, development of specific criteria that companies need to meet to get D-sealed was an intense process which involved setting out 8 key

[152] Chen, X., & Kelly, T. F. (2015). B-Corps—A growing form of social enterprise: Tracing their progress and assessing their performance. Journal of Leadership & Organizational Studies, 22(1), 102-114.
[153] Winkler, A. L. P., Brown, J. A., & Finegold, D. L. (2019). Employees as conduits for effective stakeholder engagement: An example from B corporations. Journal of Business Ethics, 160(4), 913-936.
[154] Fukayama, M. (2022). The Policy #BehindtheB: How we're creating new rules for the global economic system. B-Corporation.
[155] Cooper, L. A., & Weber, J. (2021). Does benefit corporation status matter to investors? An exploratory study of investor perceptions and decisions. Business & Society, 60(4), 979-1008.
[156] Heeb, F., Kölbel, J. F., Paetzold, F., & Zeisberger, S. (2022). Do investors care about impact?. Available at SSRN 3765659.

criteria. It took a year to operationalise these criteria, turning them into specific metrics and questions companies need to respond to. On the positive side, this example shows that developing criteria that capture a number of important factors is possible in the digital space.

Research on voluntary corporate standards suggests that there are competing initiatives in some sectors which confuses consumers, who may also lose trust in the credibility of standards if programmes are subject to public scandals.[157] The same research also found that some standards designed for the benefit of consumers lack proper involvement of consumer representatives.

Enablers

Sustainability research suggests that involvement of a number of different stakeholders such as policymakers, social movement organisations, market intermediaries, and entrepreneurs matter for the level of adoption of certification standards.[158]

Similarly, according to our interview, an important factor for initiating the work on D-seal was the alignment of thinking and coordinated effort by government and business group stakeholders. The Danish government appointed an expert group on data ethics which developed recommendations to strengthen responsible use of data by companies. One of the nine recommendations was developing a label for data ethics.[159]

At the same time, The Danish Business Council for IT-Security recommended a voluntary labelling programme for IT security aimed at Danish SMEs. As a result, a workgroup was established to create a common IT-security and responsible data use label which won funding from the Danish Industry Foundation.

An important factor that can facilitate the adoption of D-seal is its applicability to different types of business-to-business and business-to-consumer companies. D-seal is a single certification but the number of criteria that a company must meet will vary depending on the organisation's risk profile and size.

In sustainability, voluntary standards are generally developed by private

[157] Rasche, A. (2015). Voluntary standards as enablers and impediments to sustainable consumption. In Handbook of research on sustainable consumption. Edward Elgar Publishing.
[158] York, J. G., Vedula, S., & Lenox, M. J. (2018). It's not easy building green: The impact of public policy, private actors, and regional logics on voluntary standards adoption. Academy of Management Journal, 61(4), 1492-1523.
[159] Although D-seal is positioned as a label, it is a recognised certification rather than a label according to the definitions used in this report.

organisations or NGOs but are seen by governments as tools to help achieve broader policy aims such as more sustainable production and consumption.[160] The standards are increasingly integrated into public procurement and trade policies. Integration can happen via 1) introducing or amending national regulatory frameworks to make certain certifications mandatory or support their development; 2) referencing them in public procurement policies; and 3) integrating them in trade policy (e.g. free trade agreements and export-promotion measures).[161]

4. The potential for shaping digital technology markets with respect to children's well-being

In this section, we present the potential for developing a market shaping approach with respect to children's well-being and digital technology markets, including the arguments for such an approach as well as the challenges. Throughout, we intersect our findings with the case studies in the previous section.

4.1. The need for market shaping in digital technology markets

Children's well-being is defined as "how a child is experiencing life" and is distinct from, but connected to, children's rights as enshrined within the UN Convention on the Rights of the Child.[162] In digital contexts, children's well-being can be impacted in a number of ways: their social relationships, physical health, and mental health.[163] Neglecting the well-being of children does not only impact them, but can also result in impacts to wider society, such as long-term productivity costs and, in extreme circumstances, criminal justice costs.[164]

[160] Bermúdez, S. (2021). How Can Voluntary Sustainability Standards Drive Sustainability in Public Procurement and Trade Policy?.
[161] Bermúdez, S. (2021). How Can Voluntary Sustainability Standards Drive Sustainability in Public Procurement and Trade Policy?.
[162] Kardefelt Winther, D. (2022). Responsible Innovation in Technology for Children: Digital technology, play and child well-being. Innocenti Research Report. Pg. 24
[163] Raws, P. (2022). Net gains? Young people's digital lives and well-being.The Children's Society.
[164] Children's Bureau. (2019). Long-term consequences of child-abuse and neglect.

Market failures exist within digital technology markets with respect to children's well-being. Firstly, whilst they hold potential to have a positive impact, in reality a number of aspects of digital technology have failed to promote children's well-being.[165] These harms can include loss of privacy, exposure to sexual abuse and bullying, as well impacts on mental health.[166] Producers generally do not bear the cost of these harms, giving them little incentive to adopt a harm-based approach or a promotion of well-being agenda. Parents or caregivers have a fairly high level of concern about their children's online use but only a small minority have the information to be able to choose the best products for their children or use the available technical tools.[167] This may indicate that the existing tools are not optimal for parents or caregivers and that other means to help ensure their children's well-being in the online world are needed.

The existence of market failures provides a strong case for government intervention that delivers both a harm-based approach to prohibit worst case behaviour, and a market shaping approach that seeks to shape markets towards prioritising children's well-being. Continuous innovation within digital technology markets requires dynamic forms of intervention that encourage the market to drive improvements in children's well-being.[168]

The case studies presented thus far demonstrate that a market shaping approach to intervention is theoretically possible and can provide positive outcomes for children, parents/caregivers, businesses, and wider society.

A market shaping approach has the potential to complement a harm-based approach especially in the fast-moving digital technology market. The UK government recently emphasised the importance of alternatives to 'traditional' regulation, such as government-led frameworks that set out what 'good' looks like and drive business innovation towards good outcomes for consumers.[169] An approach that shapes markets towards children's well-being would push producers to innovate in a way that improves well-being. New emerging technology would be

[165] House of Lords Library. (2022). Social media: potential harm to children
[166] UNICEF. (2017). The State of the Worlds Children 2017: Children in a Digital World.
[167] Ofcom. (2020/21). Children and parents: media use and attitudes report
[168] Coglianese, C. (2018). Optimizing Regulation for an Optimizing Economy. *University of Pennsylvania Journal of Law & Public Affairs*, *4*, 1.
[169] Department for Digital, Culture, Media & Sport. (2022). Digital Regulation: Driving growth and unlocking innovation. Policy paper

adopted and applied in ways that best enhance well-being. This would create an environment where businesses are innovating towards a common goal, yielding compound benefits to well-being.

Finally, an important consideration is that children, as vulnerable citizens, have specific rights that must be respected and protected, meaning government interventions are likely to be more politically feasible. An expert interview suggested that interventions are likely to garner more bi-partisan support and are therefore more likely to be introduced where they relate to children's well-being, which is an uncontentious issue.

4.2. Feasibility of adopting a market shaping approach

We ran a light-touch feasibility assessment of applying the market shaping approach to digital technology and children's well-being to understand the extent of the barriers and opportunities. The assessment was based on our desk research, case studies and expert interviews. The key barriers and enablers are presented in Table 3 below. Some of the factors, such as regulatory environment, nature of the markets, and resources needed are important for policy development and implementation, while others, such as political and cultural context, and clarity of design and criteria, are critical to ensure adoption.

Overall, we consider that despite a number of important challenges, a market shaping approach can be applied to shape the digital technology market to promote children's well-being.

Feasibility factor	***Barriers (-)*** ***Enablers (+)***
Regulatory environment	- Digital and data regulation and responsibility for the protection and well-being of children tends to be quite complex with a number of bodies involved, which acts as a barrier. The following features would facilitate development and implementation:

	+ A clear split of roles and responsibilities between regulators + Framework that enables collaboration between government bodies, NGOs and the private sector + Previous successes of using similar approaches in other markets
International nature of markets and companies	- Given the international nature of many digital companies, international cooperation may be needed + Countries that have a big digital market may be able to develop and implement independently
Political and cultural context	- Lack of awareness of the problem / opportunity and public appetite for additional interventions in some countries could prevent development and adoption + Children are vulnerable citizens and some countries already have high awareness of the importance of children's well-being and public support for more and better regulation + In line with the above, bi-partisan support for interventions to promote children's well-being may be more likely than for interventions in other policy areas + Some market shaping tools - such as product information - often require less intervention compared to traditional regulatory approaches + Some countries have a significant number of businesses that are participating in other social responsibility schemes (e.g. B-corps, etc.). They are likely to be more receptive to similar initiatives + A market shaping approach can be part of governments' pro-growth and innovation agendas

Clarity of criteria & design	- Children's well-being is a complex multifaceted concept. For example, there are 8 indicators in the RITEC framework[170] - A lot of engagement between government, regulators, civil society, businesses, and consumers is needed to translate these indicators into a meaningful and easy to use outcomes + Case studies, such as energy labelling and PEGI ratings, suggest that many different complex metrics can be distilled into a single label/certificate (e.g. 'well-being' certification) to facilitate consumer decision-making + There are examples of combining several indicators into one measure of well-being (see the box below on 'Overcoming the complexity of well-being indicators')
Cost, time and other resources	- Generally, the amount of resources needed for development, implementation, and monitoring is an important barrier to new regulatory approaches + Some technical work related to developing outcomes and measures is already being done by the private sector (e.g. RITEC project, Common Sense Media, Digital Futures Commission). This reduces the resources needed from the public sector + Some types of interventions, such as SIBs, could generate returns over the longer term

Table 3: Barriers and enablers to market shaping for children's well-being in digital technology markets.

[170] Kardefelt Winther, D. (2022). Responsible Innovation in Technology for Children: Digital technology, play and child well-being. Innocenti Research Report

Digital regulatory environment in the UK

In the UK, there are four bodies involved in digital regulation: the Competition and Markets Authority (CMA), the Financial Conduct Authority (FCA), the Information Commissioner's Office (ICO), and the Office of Communications (Ofcom). This is a complex regulatory environment. To mitigate the related challenges, the four regulators formed the Digital Regulation Cooperation Forum (DRCF) to ensure coherence, collaboration, and capability building. The DCRF work plan for 2022 to 2023 includes projects to improve outcomes for children and parents, and is jointly overseen by the Information Commissioner's Office (ICO) and the Office of Communications (Ofcom).[171] While creation of forums such as DRCF is a promising avenue for overcoming complexity, the evaluation of its effectiveness is not available yet.

Overcoming the complexity of well-being indicators

The Royal Society of Public Health's review into the impact of social media on young people's well-being provides useful insights on how a set of complex well-being criteria can be individually scored and then combined into an overall evaluation of social media companies.[172] They used 14 indicators of well-being and gave each an order of priority in order to form an overall weighted score.

4.3. The levers and tools available to government and regulators to drive excellence in children's well-being across digital technology markets

Having established the merits of a market shaping approach within digital technology markets and outlined precedents from other industries, we now present the range of tools available to governments for adopting this approach. Firstly, we present a classification of identified case studies within the market shaping pyramid (Figure 4).

[171] Digital Regulation Cooperation Forum. (2022). Plan of work for 2022 to 2023
[172] Royal Society of Public Health. (2017). Status of Mind.

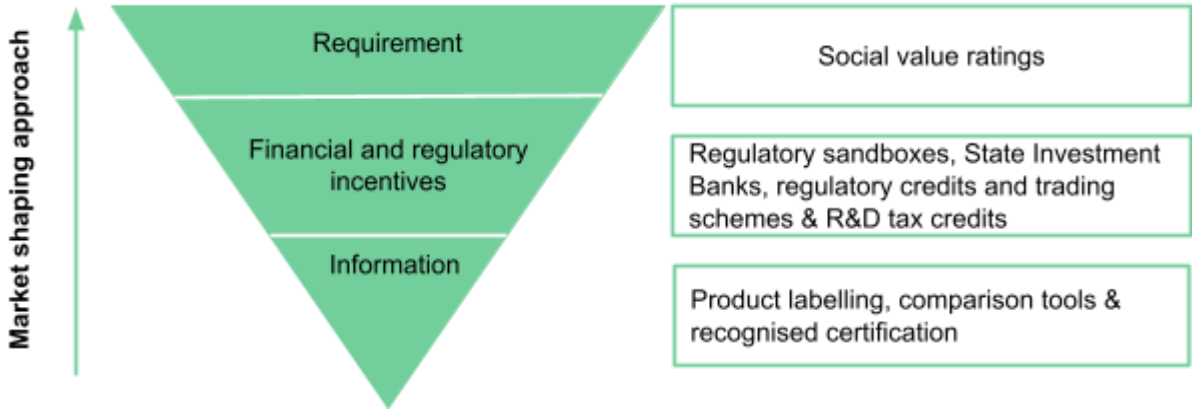

Figure 4: Classification of case studies for market shaping in digital technology and children's well-being

Figure 5 presents our assessment of the applicability and feasibility of each of these tools, followed by Table 4 which summarises the rationale for these plot points.

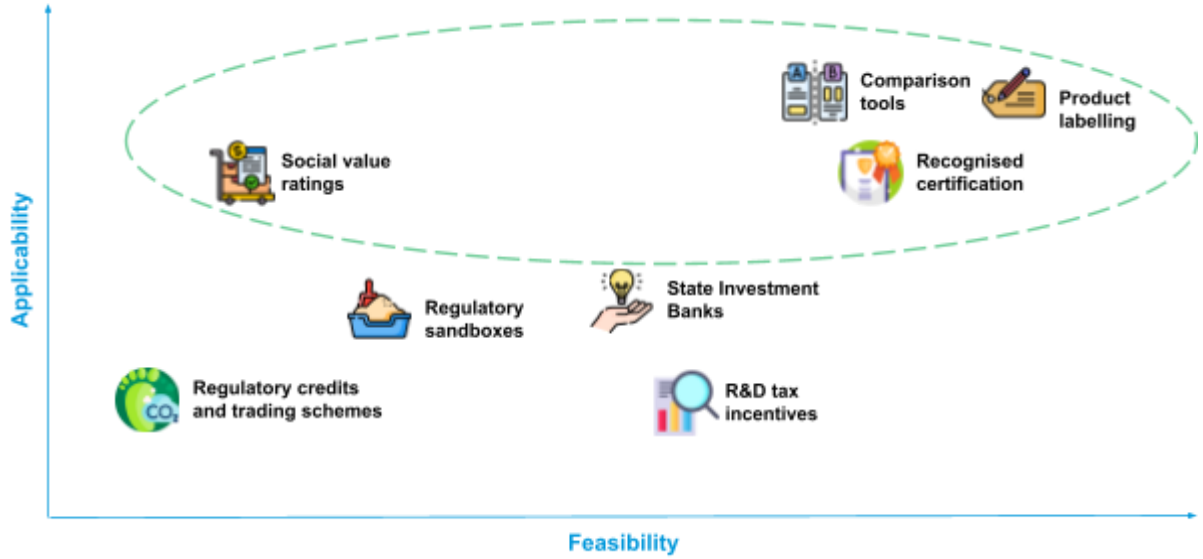

Figure 5: plotting the feasibility and applicability of the identified case studies

Tool	How this could apply to	Feasibility of specific tools

	children's well-being in digital technology markets	
Product labelling	Attaching product labels to children's digital technology products.	Feasible to implement already exists within some products for children. For example, Common Sense Media's rating system for movies and TV shows allows parents/guardians to evaluate and compare the ratings of shows. Similarly, safety accreditations exist for products that meet standards, such as the lion mark by the British Toy and Hobby Association.[173]
Comparison tools	A comparison tool for children's digital technology products could be established.	
Recognised certification	Certifying businesses that meet pre-established well-being criteria.	
Social value ratings in procurement	Public bodies buying children's products (e.g. schools) could be mandated to contract with companies that demonstrate a promotion of children's well-being agenda.	This should be feasible to implement as it only requires public bodies to change their processes.
State Investment Banks (SIBs)	A SIB that works with private venture capital funds to establish a "well-being fund" that invests in innovative products/services that promote well-being.	Initially costly to implement but can yield investment returns for the government.
R&D tax incentives	Additional R&D tax incentives could be offered for product development and innovation that promotes children's well-being.	A costly measure, requiring significant resources, and likely to be complex to administer.
Regulatory sandboxes	A digital technology sandbox which relaxes the regulatory requirements for those that meet a prescribed promotion of	Lack of clarity around what regulatory requirements could be relaxed.

[173] Toy Retailers Association. (*n.d.*) Approval marks.

	well-being criteria.	
Regulatory credits and trading schemes	Not readily applicable unless a tradeable credit can be identified.	Tradeable credit may not exist for this market.

Table 4: Policy tools, in order of combined applicability and feasibility

In addition to the case studies of established market shaping approaches set out above, there are emerging models of regulation that require firms to put good outcomes for consumers at the heart of what they do. For example, the FCA's new Consumer Duty will require banks and financial institutions to act to deliver good outcomes for retail customers, avoid causing foreseeable harm and support customers to pursue their financial objectives.[174] It is too early to say whether such approaches will be successful, but these could merit further consideration to incentivise digital technology firms to focus on how they can improve children's well-being.

4.4 Conclusion: considerations and next steps

Based on our assessment, there are five tools that could potentially be used for promoting children's well-being within digital technology markets. Product labelling, comparison tools, recognised certification, as well as use of social value ratings in procurement are all related to increasing market transparency. While we do not currently have enough evidence to recommend implementation of one of these approaches, we suggest exploring the following questions, to address this evidence gap and build a foundation for policymakers to take action to promote children's well-being for the long term.

What are the costs, benefits and feasibility of implementing different policies and tools in digital technology markets?

We have undertaken a very initial desk-based assessment of feasibility in this report, but there is more to do to fully understand the costs, risks, benefits, and detailed implementation challenges of these approaches, across stakeholder groups such as governments, regulators, businesses, and consumers. This should include detailed

[174] FCA. (2022). Consumer Duty.

analysis of the likely theory of change, testing any underlying assumptions about the approach, the mechanisms of how it works, and the impact it may have.

This should be done by using a mix of both quantitative and qualitative techniques such as user testing of intervention, design prototypes, online experiments to establish causal links between an intervention and a behaviour, and measuring likely levels of business take up of incentives and schemes.

How do we create well-being measures that provide sufficient, actionable information to consumers, businesses and policymakers without being overly complex?

As discussed in Section 4.2, lack of clarity and consensus around well-being measures can be an important barrier for the success of interventions.

Stakeholders need to act on the information they receive for any new approach to make an impact. There is a large body of research showing that information and even intention does not necessarily lead to action.[175] Depending on the type of policy or tool, it is therefore important to develop measures that (1) are practical for use by policymakers, businesses, and consumers, and (2) provide incentives for different stakeholders to act and that are easy to act upon.

Is there a case for sequencing the introduction of different policies and tools?

Focusing efforts on publishing information that compares products on well-being measures could help inform consumer choice in the short-term, and potentially inform wider policy action in the medium-term, including FCA-style consumer duty regulations that could put the onus directly on firms to ensure well-being is at the heart of their product development.

Early efforts focused on publishing information should include testing key questions such as the most appropriate measures to capture children's well-being, and the extent to which empowering consumers is sufficient, before moving to other types of measures, such as regulatory incentives tied to specific metrics of well-being. NGOs and the private sector can potentially play a positive role in these early stages to develop robust measures of well-being.

[175] Sheeran, P., & Webb, T. L. (2016). The intention–behavior gap. *Social and personality psychology compass*, *10*(9), 503-518.

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