World Benchmarking Alliance

Digital Inclusion Benchmark 2021

Insights Report

March 2022

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Acronyms and Abbreviations

CSI	Core Social Indicators
DIB	Digital Inclusion Benchmark
GRI	Global Reporting Initiative
GSMA	Groupe Spéciale Mobile (Mobile industry trade association)
ITU	International Telecommunication Union
OECD	Organization for Economic Cooperation and Development
OHCHR	Office of the High Commissioner for Human Rights
SASB	Sustainability Accounting Standards Board
SDGs	Sustainable Development Goals
UN	United Nations
UNICEF	United Nations Children's Fund
WBA	World Benchmarking Alliance

1 Introduction

1.1 Overview

The World Benchmarking Alliance (WBA) initiated the Digital Inclusion Benchmark (DIB) three years ago, launching work on the project by identifying key topics and companies in the field. WBA's first DIB, covering 100 companies, was published in December 2020. This report provides insights into the second DIB, released in December 2021.

The 2021 DIB features the performance of 150 keystone[1] digital companies against 16 indicators in four measurement areas: enhancing universal access to digital technologies; improving all levels of digital skills; fostering trustworthy use; and innovating openly, inclusively and ethically (Table 1.1).[2] These indicators map to one or several of the 17 Sustainable Development Goals (SDGs) agreed by all 193 United Nations (UN) members in 2015. In doing so, they provide a yardstick for measuring the performance of technology companies on digital inclusion, contributing to a more equitable world and sustainable future.

TABLE 1.1: DIGITAL INCLUSION BENCHMARK (DIB) INDICATORS

Measurement area	Indicator code	Indicator
Access	A1	The company contributes to digital technology access
	A2	The company supports digital inclusivity for women and girls
	A3	The company facilitates digital access for diverse users
	A4	The company discloses its direct economic contribution
Skills	S1	The company supports basic digital skills development
	S2	The company supports intermediate digital skills development
	S3	The company supports technical digital skills development
	S4	The company supports school connectivity
Use	U1	The company assigns accountability for cybersecurity at a senior level
	U2	The company monitors, remedies and reports cybersecurity incidents
	U3	The company applies responsible practices for personal data
	U4	The company mitigates digital risks and harms
Innovation	I1	The company practices open innovation
	I2	The company supports technology innovation ecosystems
	I3	The company supports sustainable development
	I4	The company practices inclusive and ethical research and development

WBA's Social Transformation Framework sets out a series of high-level expectations that all companies should meet. These expectations are grounded in companies' responsibility to respect human rights, their role in providing and promoting decent work and their ethical conduct. One thousand companies across different industries have been assessed on the core social indicators (CSIs), which are part of WBA's Social Transformation Framework to increase companies' accountability for their social impacts.

This report also includes the CSI results for digital companies. The context of digital companies presents notable implications for a social transformation. These include human rights risks from online content; decent work implications when platform companies use contractors rather than own employees; ethical implications of personal data practices; tax avoidance possibilities that digital companies can exploit if they operate virtually; and the significant lobbying influence that some large digital companies exercise.

A majority of the benchmarked digital companies have engaged with the benchmarking process (Table 4.2), acknowledging that engagement indicates awareness and interest of these issues.

1.2 Methodology

Digital companies vary widely in their activities. Some companies solely manufacture equipment, provide telecommunications services, or offer information technology (IT) or digitally enabled services. Others such as Apple and Microsoft, carry out two or more of these activities. Given the significant functional differences between digital companies, these have been classified into three industries for the purpose of benchmarking: 1) hardware, consisting of the manufacture of digital goods such as end-user devices, network equipment and semiconductors; 2) telecommunications services; and 3) IT services, consisting of software applications, data centres, cloud computing and platform services.[3] In cases where companies provide diverse products, they have been classified based on the industry category in which they had the highest revenue in the most recent accounting year.

The benchmarked companies have corporate headquarters across 47 different economies. Their footprint extends to almost the entire planet through their subsidiaries and supply chains, as well as through their worldwide markets. For analytical purposes, the companies have been classified into geographical regions (Table 4.5). Due to the large number of digital companies included from mainland China and the United States, these are grouped separately (Box 1.1).

TABLE 1.2: DIGITAL COMPANIES BY INDUSTRY AND GEOGRAPHY

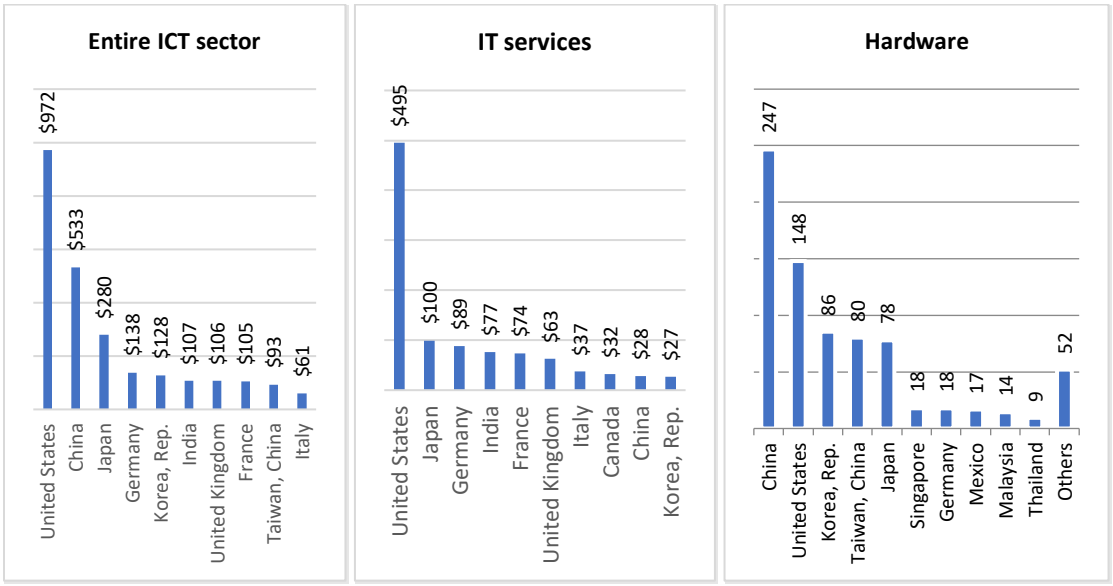
Headquarters	Hardware	Telecom services	IT services	Total
United States	14	6	24	**44**
Asia (excluding China)	10	17	8	**35**
Europe	4	25	4	**33**
China	3	4	12	**19**
Other		16	3	**19**
Total	**31**	**68**	**51**	**150**

Note: 'Other' refers to the regions Latin America and the Caribbean, the Middle East, the Pacific, sub-Saharan Africa and Canada. The region China includes companies headquartered in the mainland. For the regional classification of individual companies, see Table 4.5.

BOX 1.1: THE GLOBAL ICT SECTOR

The 2021 Digital Inclusion Benchmark covers 150 companies headquartered across 47 economies around the world. The United States and China are home to most of these companies (63 companies or 42%; the next highest country is Japan with seven companies). This is a reflection of the size of the digital sectors in the United States and China (**Error! Reference source not found.**, left). In 2017, the United S tates ranked 1st and China ranked 2nd in terms of the value of their overall Information and Communication Technology (ICT) sector. Further, the Unites States ranked 1st and China ranked 9th in IT services, and China ranked 1st and the United States 2nd in hardware.

FIGURE 1.1: TOP 10 ECONOMIES BY VALUE-ADDED OF ICT SECTOR AND SUB-SECTORS, US$ BILLIONS, 2017



Source: UNCTAD. 2019. *Information Economy Report, Value Creation and Capture: Implications for Developing Countries*. https://unctad.org/webflyer/digital-economy-report-2019

Data for the benchmark was collected from a range of publicly available sources such as financial reports, and environmental, social and governance (ESG) reports. Information was also sourced from relevant company web pages. The collected information was shared with companies, enabling them to review the data, provide input and clarifications, and send any additional information.

The four measurement areas for assessing company performance were split up into four indicators each. These 16 indicators were scored on a scale of 0–2 using publicly available information. Companies that did not have public information on the indicators or that failed to send relevant information received a score of zero. Each of the measurement areas were then scored as a simple average of the indicator scores. Finally, a company's overall score was calculated as the average of the scores that it received for each measurement area. More information about the composition of the indicators and how they were scored is available in the scoring guidelines.[4]

1.3 Results

Overall, the results show room for improvement. The average score across all companies is 0.65, which is only a third of the maximum possible score of 2 (Table 1.3). While hardware and telecommunications services companies have above average scores, IT services companies are lagging. When analysed by geography, companies with their headquarters in Europe have a fairly strong lead in digital inclusion, while those headquartered in China show poorer performance. In fact, IT services companies and those with their headquarters in China perform below average in every measurement area.

The 2021 and 2020 benchmark scores are not directly comparable due to changes in the scoring guidelines (Box 1.2). Furthermore, the total number of companies benchmarked in 2021 rose to 150 compared to 100 in 2020. Using the 2020 scoring criteria and the original 100 companies, the change between 2021 and 2020 was a mere 0.05 points (or 7%) increase – showing companies are making some progress. However, at this rate of change, it would still take them seven years to reach a score of 1 out of 2 and 27 years to reach the complete score of 2.

TABLE 1.3: 2021 DIGITAL INCLUSION BENCHMARK BY INDUSTRY AND GEOGRAPHY

	Access	Skills	Use	Innovation	Total
All companies	**0.58**	**0.48**	**0.70**	**0.84**	**0.65**
Score by industry					
Telecom services	0.73	0.54	0.77	0.82	0.72
Hardware	0.56	0.49	0.67	1.01	0.68
IT services	0.40	0.38	0.62	0.78	0.55
Score by geography					
Europe	0.72	0.58	0.84	0.95	0.77
Asia (excl. China)	0.65	0.52	0.74	0.87	0.70
Other	0.65	0.51	0.69	0.73	0.65
United States	0.48	0.44	0.66	0.94	0.63
China	0.36	0.27	0.48	0.51	0.40

Note: Maximum score for each measurement area and for the total average is 2. Results cannot be directly compared with 2020 due to the inclusion of 50 new companies and revisions to the scoring guidelines. For the full list of scores by company and indicator, see Table 4.2.

The top 15 companies in the benchmark are geographically diverse. Further, telecommunications services companies lead the list, followed by several hardware companies and two IT services companies (Table 1.4). One commonality between the top ten companies is how long they have been established: the companies have a median age of 47 years, with all except Alphabet having been founded before the birth of the internet in 1983. The top 15 companies also undertake robust reporting, with a strong focus on digital inclusion topics, and show greater engagement with the benchmark.

In terms of industries, telecommunications companies top the ranking – Telefónica (ranking 1st with a score of 90 out of 100), Orange (ranking 2nd with a score of 80) and Telstra (ranking 3rd with a score of 69). They continue to demonstrate leading practice in transparency, support for digital skills and adoption of ethical artificial intelligence. Meanwhile, the three companies that share the 4th rank – Apple, Cisco and Samsung – have made significant progress and are leaders in different areas. Apple stands out for its strong data protection and disclosure, as well as support for start-ups from underrepresented groups. Cisco's flagship Network Academy has trained millions of students around the world in tech skills. Samsung, on the other hand, is distinguished for the range of support it provides to users with disabilities.

A few US-headquartered companies have shown notable improvements. Alphabet and Microsoft, for instance, have joined the top ten, primarily due to increased disclosure. US semiconductor firm Intel shows the highest increase among the top ranked companies, climbing 11 positions to 15th place. Intel's jump is driven by its partnership in the One Million Connected Devices Now project supporting low-income students with remote learning possibilities during COVID-19; the Intel Capital Diversity Initiative that funds start-ups led by women and underrepresented groups; and co-founding of the Open COVID Pledge providing researchers free access to its intellectual property to accelerate solutions for the pandemic.

Of the 50 new companies benchmarked in 2021, the highest ranked were New Zealand telecommunications operator Spark at 25th place (51 out of 100), Japanese IT services company NEC at 27th place (50 out of 100) and UK telecommunications operator BT at 28th place (49 out of 100).

TABLE 1.4: TOP 15 COMPANIES IN THE DIGITAL INCLUSION BENCHMARK

Rank 2021 (2020)	Company	Headquarters	Year founded	Industry	Score (0-100)
1 (2)	Telefónica	Spain	1924	Telecom services	90
2 (3)	Orange	France	1941	Telecom services	80
3 (1)	Telstra	Australia	1975	Telecom services	69
4 (10)	Samsung	Korea (Rep.)	1969	Hardware	66

Rank 2021 (2020)	Company	Headquarters	Year founded	Industry	Score (0-100)
4 (6)	Cisco	USA	1984	Hardware	66
4 (14)	Apple	USA	1980	Hardware	66
7 (8)	HP	USA	1947	Hardware	65
7 (11)	Alphabet	USA	1998	IT services	65
7 (17)	Microsoft	USA	1986	IT services	65
7 (7)	Deutsche Telekom	Germany	1995	Telecom services	65
11 (19)	Telia	Sweden	1853	Telecom services	64
12 (4)	PLDT	Philippines	1928	Telecom services	60
13 (11)	Verizon	USA	1983	Telecom services	60
14 (13)	Vodafone	UK	1991	Telecom services	58
15 (26)	Intel	USA	1968	Hardware	57

The next section presents the key findings. Further, chapter 2 examines key topics in the digital inclusion benchmark and chapter 3 presents the results of the core social indicators. The scores and ranks for the 150 digital companies are presented in the annex, as are other key indicators. More details, including company scorecards, are available on the benchmark website.[5]

BOX 1.2: SCORING METHODOLOGY REFINEMENT

Several refinements were made to the 2021 benchmark scoring based on a review of the previous year's results. This means it is not possible to directly compare the results for the 100 companies that have been benchmarked in both years. The key changes in scoring are outlined here and also discussed where relevant in the next chapter.

The most significant scoring revision relates to the six indicators (A1-A2, S1-S4) covering corporate social responsibility activities for increasing digital access and advancing digital skills. Companies that have their own programmes received a higher score for these indicators compared to companies that supported or funded programmes carried out by others or undertook one-off events. Additionally, scoring on other indicators was strengthened from simply supporting a topic to requiring companies to make a commitment or mention the topic in their materiality analysis (e.g. cybersecurity, data protection, child online protection and open source standards and initiatives). Finally, a company's commitment to data protection was analysed by looking at whether it had a group-level privacy policy applicable to all subsidiaries, instead of merely looking at its headquarters.

The top ten companies by change in rank between the 2020 and 2021 benchmarks are shown below, even though the scores are not directly comparable. Six of these were from the United States and half of these were IT services companies. This is an encouraging sign given that IT services companies often lag behind other digital companies in the benchmark.

PayPal showed the biggest improvement, moving up 32 positions in the ranking from the 50th to 18th place. One notable improvement in PayPal's performance was the introduction of a new initiative to increase digital access during the COVID-19 pandemic by waiving fees for small merchants making use of the company's services. PayPal also strengthened its support for women and girls through its partnership with the Cherie Blair Foundation, through which PayPal employees mentor female entrepreneurs in China and India. Additionally, its innovation score improved as a result of strengthening its commitment to open source initiatives.

TABLE 1.5: TOP TEN COMPANIES BY INCREASE IN RANK

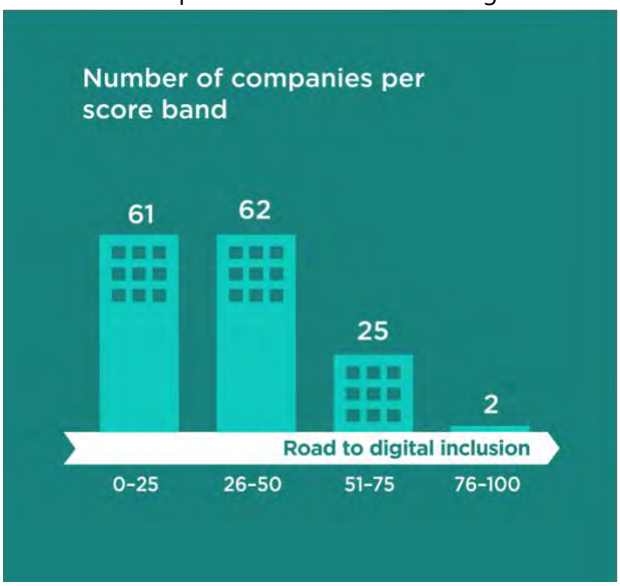
	Company	Headquarters	Industry	Rank 2021	Rank 2020	Change
1	PayPal	USA	IT Services	18	50	32
2	Baidu	China	IT Services	18	42	24
3	Facebook	USA	IT Services	40	62	22
4	Singtel	Singapore	Telecom services	20	34	14
5	SK Telecom	Korea (Rep.)	Telecom services	32	46	14
6	Intel	USA	Hardware	15	26	11
7	Adobe	USA	IT Services	25	36	11
8	MTN	South Africa	Telecom services	34	45	11
9	Apple	USA	Hardware	4	14	10
10	Microsoft	USA	IT Services	7	17	10

1.4 Key findings

The 2021 Digital Inclusion Benchmark shows that the majority of tech companies are still lagging in their responsibility to ensure that people are able to use digital technology in a way that benefits them. There are a handful of companies that are leading the way with robust child safety commitments, ethical principles for artificial intelligence and impactful initiatives to provide digital skills training. However, most companies still do not display the maturity needed to adequately support progress towards the SDGs.

1.4.1 Most companies are lagging behind on digital inclusion – progress is too slow

Some tech companies demonstrate a strong commitment to digital inclusion. Spain's Telefonica leads on this account, scoring 90 out of 100 for its efforts in increasing access to digital technologies, teaching digital skills, making the internet a safer and more trustworthy place and innovating diversely and ethically. Furthermore, around two dozen other companies show good performance.



However, despite increased use of digital technology, particularly during the COVID-19 pandemic, the vast majority (82%) of companies are still lagging in their responsibility towards digital inclusion, scoring 50 points or less out of 100. There is a moderate improvement in comparable metrics from last year's benchmark. However, progress is still too slow overall to keep up with the growing digital divides and risks.

1.4.2 In its enthusiasm about AI benefits, the industry is failing to consider the risks

While many digital companies cite the benefits of artificial intelligence (AI), few seem concerned about the risks. Just 20 out of the 150 companies commit to publicly available principles for ethical AI. This number is alarming given the growing evidence of the human rights implications of AI in areas such as facial recognition and algorithmic placement of incendiary information. Without ethical AI principles, digital companies risk driving a future where people will have less agency, face potential job losses and experience inadvertent biases. AI is discussed in Section 2.5.4. The section also provides the list of companies that have adopted publicly available AI principles.

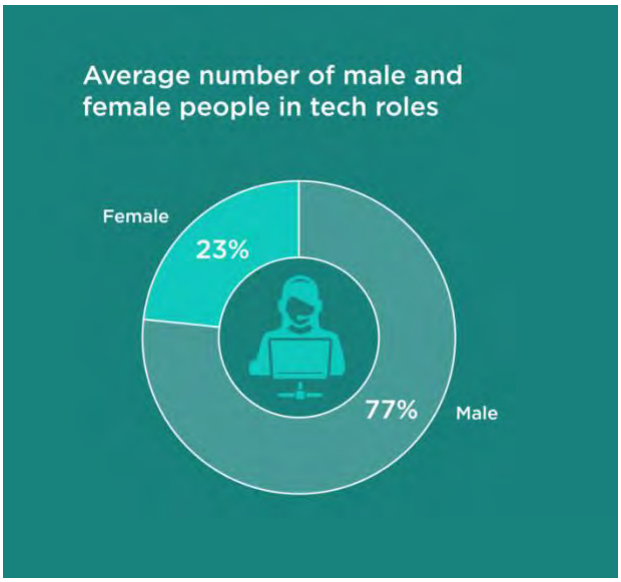
1.4.3 The impacts of 'technology for good' initiatives remain questionable

Companies often highlight their social initiatives, which include providing free connectivity to schools or discounted services to underserved communities. Unfortunately, many of these initiatives are one-off projects – especially those introduced during the COVID-19 pandemic. Furthermore, only 12 out of the 150 companies have published an impact assessment for one or more of their initiatives. This low number raises questions about the effectiveness of such 'technology for good' initiatives. Assessments can mitigate the risk of impact washing and provide guidance for designing stronger initiatives. Impact assessments are discussed in Box 2.2.

A related point here is accounting for the financing of 'technology for good' initiatives. [6] While there is a global standard for reporting community investments[7], only 69 companies implied that they followed the standard and, further, only 20 companies actually reported information using the standard. Nonetheless, evidence was found for 84 companies reporting their charitable contributions. It is difficult, however, to use this evidence to make comparisons as the contributions range from cash, to in-kind donations of products or services, foregone revenues, or declaring a simple total amount with no breakdown (Table 4.7). Companies need to enhance transparency by clearly disclosing the components of their community investments and linking them to the actual initiatives they fund.

1.4.4 More women needed in tech

The lack of women engaged in research and development (R&D) is a global problem as it directly influences the involvement of gender perspectives in digital products. The number of women engaged in technical roles continues to be an important indicator to track and more companies are realising this. In fact, 18% more companies disclosed information on the number of women they employ compared to last year's benchmark findings, with most of this increase coming from companies headquartered in the Republic of Korea and in Japan. However, this number still only amounts to one-third of the 150 companies. On average, women make up just 23% of the technical workforce in digital companies, as per the reported data, which clearly highlights the need for more women in tech roles. This topic is discussed in more detail in Section 2.4.



1.4.5 The industry needs to pay attention to its human rights risks and impacts

From online hate speech[8] to the use of child labour for mining minerals for digital devices,[9] tech companies can have a detrimental impact on human rights. It is therefore crucial that tech companies demonstrate due diligence for their human rights risks and impacts.

Only 15 out of the 150 companies disclose that they have the basic processes in place to identify, assess and integrate human rights risks and impacts in their business practices. Moreover, IT and software services companies lag behind the other companies in the sector, while hardware companies are slightly ahead of the curve. Companies' performance on social indicators related to human rights and decent work and ethical behaviour are discussed in Chapter 3.

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[1] Keystone refers to organisations with disproportionate influence on the structure and function of the systems within which they operate. For more information on the principles used to identify keystone companies, see: https://www.worldbenchmarkingalliance.org/research/sdg2000-methodology/

[2] For more information on the background behind the indicators, see: World Benchmarking Alliance. 2020. *Digital Inclusion Benchmark: Methodology report*. https://www.worldbenchmarkingalliance.org/research/methodology-digital-inclusion-benchmark-covers-four-critical-themes/

[3] For more on the company classification process, see World Benchmarking Alliance. 2020. *Digital Inclusion Benchmark: Methodology report*. https://www.worldbenchmarkingalliance.org/research/methodology-digital-inclusion-benchmark-covers-four-critical-themes/

[4] World Benchmarking Alliance. 2021. *Digital Inclusion Benchmark 2021 Scoring Guidelines*. https://assets.worldbenchmarkingalliance.org/app/uploads/2021/12/Digital-Inclusion-Benchmark-2021-Scoring-Guidelines.pdf

[5] https://www.worldbenchmarkingalliance.org/publication/digital-inclusion/

[6] Corporate Citizenship Limited. 2019. *Business for Societal Impact Guidance Manual: Corporate Community Investment*. https://b4si.net/framework/community-investment/

[7] Global Reporting Initiative (GRI). 2018. *GRI 201: Economic Performance*. https://www.globalreporting.org/standards/media/1039/gri-201-economic-performance-2016.pdf

[8] OHCHR. 2019. "Governments and Internet companies fail to meet challenges of online hate." *News*, 21 October. https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25174

[9] "US tech giants sued over DRC cobalt mine child labour deaths." *Aljazeera*, 17 December 2019. https://www.aljazeera.com/economy/2019/12/17/us-tech-giants-sued-over-drc-cobalt-mine-child-labour-deaths

2 Digital Inclusion Benchmark highlights

This chapter highlights the key topics covered in the benchmark. These include digital access for vulnerable groups, advancing digital skills, trustworthy use of digital technology, supporting women in tech roles and promoting open and ethical innovation.

2.1 Digital access for vulnerable groups

Some groups, such as women and girls, people with disabilities, people with low incomes and the elderly are at a particular risk of digital inclusion due to their vulnerability. The barriers they face include unaffordability of digital devices and services, digital technologies not designed in a way appropriate to their needs, and lack of opportunities to leverage digital technologies for enhancing income and social well-being. This section looks at the benchmark results in regard to supporting digital access for vulnerable groups as well as the specific case of company initiatives for people with disabilities.

2.1.1 Access to digital technologies

Indicator A1 looks at company initiatives for contributing to universal and affordable access to digital technologies. In total, 77 companies had an initiative for enhancing access to digital technologies, representing 53% of the 150 companies. This is a significant increase over 37% companies from the 2020 benchmark. The increase was largely due to special initiatives introduced during the COVID-19 pandemic. Company responses to the pandemic involved a wide range of activities, demonstrating the capacity of digital technology to provide support during crises. The initiatives included providing emergency connectivity to hospitals, donating hardware such as mobile phones and laptops, providing additional data or reduced payment plans, and offering unmetered and free access to health and educational websites. It remains to be seen, however, how many of these initiatives will continue to exist in the post-COVID world.

The indicator also looks at whether the initiatives are specifically targeted at vulnerable groups. Out of the 150 companies, 31 had initiatives for specific groups. All except two of these companies were telecommunications operators (Table 2.1). Initiatives generally consisted of a discounted price on home internet access for low-income families and, in some cases, for the elderly or for people with disabilities.

TABLE 2.1: COMPANIES WITH INITIATIVES FOR INCREASING ACCESS TO DIGITAL TECHNOLOGIES FOR VULNERABLE GROUPS

	Company	Headquarters	Initiative (A11a)	Linked to government programme (A11b1)
1	AT&T	USA	Access from AT&T offers special pricing for internet access to low-income households.	Yes
2	BCE	Canada	Connecting Families offers special pricing for internet access and computers to low-income households.	Yes
3	BT	United Kingdom	BT Basic offers affordable connections to people on certain government benefits.	
4	China Mobile	China	Offers discounted telecommunications services for residents of impoverished areas.	Yes
5	China Telecom	China	Offers discounted telecommunications services for residents of impoverished areas.	Yes
6	China Unicom	China	Offers discounted telecommunications services for residents of impoverished areas, including people with disabilities.	Yes
7	Chunghwa Telecom	Taiwan	Offers a Broadband Preferential Plan for low-income households.	
8	Comcast	USA	Internet Essentials provides low-cost, high-speed internet to low-income households.	Yes

	Company	Headquarters	Initiative (A11a)	Linked to government programme (A11b1)
9	Dell	USA	Offers discounted computers for customers of Comcast Internet Essentials.	
10	Deutsche Telekom	USA	*Sozialtarife* [Social Tariff] provides discounted telephone services to low-income households.	
11	iFlytek	China	In partnership with the China Association for Deaf and Hard of Hearing, 'Hear A.I. Voice' enables the hearing impaired to 'see' voice. Any hearing-impaired person may apply for the free service.	
12	Iliad	France	Works with the association Le Cartable Fantastique to provide free special software for disabled students to use computers at home.	
13	KDDI	Japan	Smile-Heart provides discounted rates for persons with disabilities.	Yes
14	KT	Korea (Rep.)	KT Ggoompoom Center leverages unused space in branch buildings nationwide to provide children from vulnerable social groups with access to digital technologies.	
15	Liberty Global	United Kingdom	In Belgium, subsidiary Telenet Essential Internet provides discounted internet access for vulnerable groups.	
16	Lumen	USA	Lifeline provides low-income households and residents of tribal lines discounts on internet access.	Yes
17	MTN	South Africa	Offers subsidised handsets to low-income persons in Zambia.	
18	Omantel	Oman	Offers discounted access to the internet for persons with disabilities.	
19	Orange	France	Offers discounted access to the internet to low-income households in France and Spain.	Yes
20	OTE	Greece	Offers discounts on fixed telephony and internet services to people with disabilities.	
21	PCCW	Hong Kong	Provides free handsets with local mobile data services to nursing homes for the elderly and to disability care homes run by various NGOs, allowing residents to stay connected with their families via video calls.	
22	Proximus	Belgium	Offers a social or reduced rate for Internet service to people on social or humanitarian grounds.	
23	Rogers	Canada	Connected for Success offers discounted internet access to people living in non-profit housing.	Yes
24	SK Telecom	Korea (Rep.)	Offers tariff discounts for people from vulnerable groups.	
25	Spark	New Zealand	Spark Foundation supports the delivery of Skinny Jump, a not-for-profit wireless broadband service for low-income households.	
26	Telecom Italia	Italy	Social card provides discounted telephone services to low-income households.	
27	Telia	Sweden	Telia Company works in cooperation with the start-up No Isolation to provide 'AV1' robots to low-income families in Norway that have children with disabilities. The AV1 robot enables remote audio, visual and some kinetic interaction with the classroom and is controlled via a mobile phone connected to a 4G mobile network.	
28	Telstra	Australia	Access for Everyone offers discounted telecommunications services to low-income households.	Yes
29	Veon	Netherlands	Beeline Kazakhstan offers free high-speed internet to social institutions that support children and adults with disabilities.	

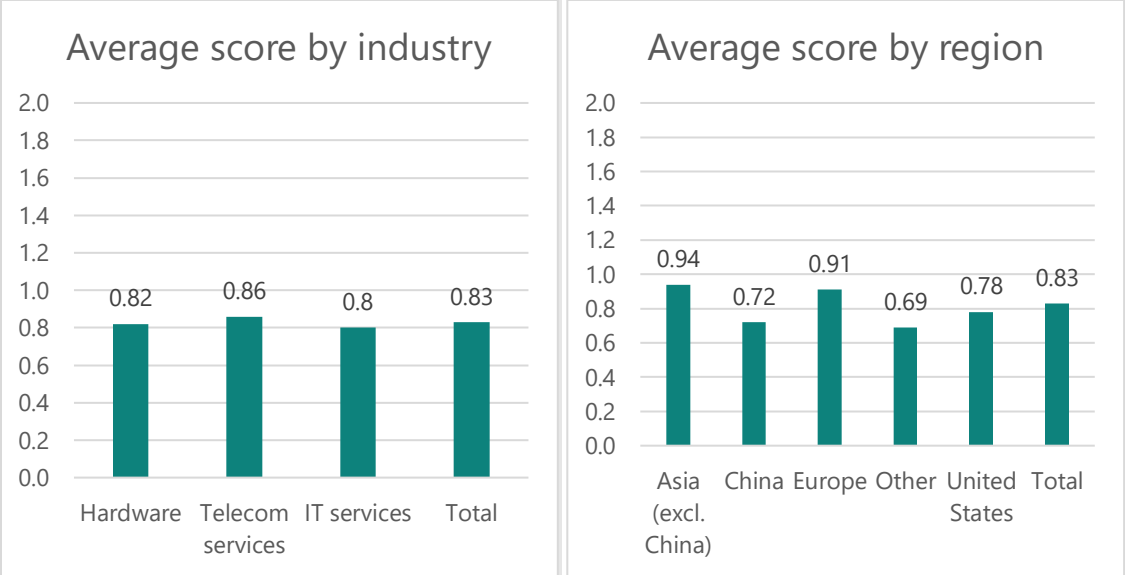
	Company	Headquarters	Initiative (A11a)	Linked to government programme (A11b1)
30	Verizon	USA	Fios Forward offers discounted internet access for low-income households.	Yes
31	Zain	Kuwait	Zain Jordan continues to provide free Wi-Fi connectivity in the Jerash Refugee Camp.	

Note: Unless otherwise mentioned, the initiatives are implemented in the country of headquarters. The column 'linked to government programme' means that the company is either obligated by the government to provide the service in the respective country or receives a government subsidy for providing the service.
Source: DIB 2021 (A1).

2.1.2 Assisting people with disabilities

Indicator A3 on whether the company facilitates digital access for diverse users also specifically examines companies' support for people with disabilities. Telecom services lead slightly, but not significantly (Figure 2.1). There are, however, differences between companies by region, with companies from Asia (excluding China) and Europe leading.

FIGURE 2.1: SUPPORT FOR DIGITAL ACCESSIBILITY FOR PEOPLE WITH DISABILITIES



An additional criteria assessed under indicator A3 in 2021 is whether companies have made a high-level commitment to integrate accessible design principles into their products and services to benefit people with disabilities. Overall, 57 companies reported such a commitment. However, only one company, the benchmark leader Telefonica, reported a time-bound goal to have 100% of its products designed using responsible design principles by 2022.

The indicator also looks at whether companies adhere to internationally recognized design principles. Out of the 150 companies, 47 reported this to be the case. The most common principles that companies adhere to are the Web Content Accessibility Guidelines, which comprise recommendations for making online content accessible, mainly for people with disabilities.[10]

Close to two-thirds of all companies (94) were found to have products or services that accommodate users with disabilities. Some examples of these include customer service considerations (for example, providing documents in Braille or specially trained staff), or incorporating special functions in products (subtitling, voice activation, accessibility mode, etc.) The findings reveal that despite the high number of companies designing disability-friendly products, most companies do not make formal commitments for this or disclose the design principles they follow. There is therefore an opportunity for companies to align their

communication and strategic priorities with their existing actions. This will help companies better signal to investors and stakeholders the positive contributions they are already making to benefit people with disabilities.

Only a little more than a third of companies (56) report the number of their employees with disabilities (Figure 2.2). Some companies only report this information for certain jurisdictions and not for their global operations. Others have reported that it was illegal to gather this information in certain jurisdictions. Conversely, some regions, such as parts of Asia, have minimum legal requirements for hiring people with disabilities. Few companies exceed the minimum by a significant margin, with the exception of Deutsche Telecom, which reported that 7.5% of its hires in Germany were people with disabilities, which is above the minimum of 5%. BT (7%) and BCE (5%) were also notable in this regard, as their respective regions, the United Kingdom and Canada, have no legally mandated minimum quota for hiring people with disabilities.

As the definition of disability differs by local jurisdiction as well as by individual company practices, it is not always clear which categories are included in these statistics. Some companies, such as Alphabet, rely on self-identification, while other companies define their own categories. For example, BT included neurodivergence and long-term health conditions in the category. Moreover, companies generally do not provide breakdowns about the positions in which their staff with disabilities work, making it difficult to assess whether employees with disabilities are also in positions to influence digital inclusion. Grab, a ride hailing and food delivery company, reported the number of its driver-partners who are hearing impaired or physically impaired.

The indicator also goes beyond generic statements of diversity and inclusivity and looks for descriptions of specific physical or operational adjustments that companies have made to improve accessibility in their workplace. Only 39 companies mention their efforts to do this. Company efforts include additional tools and training as well as sign language interpreters provided to staff with disabilities.

One clear benefit of having staff with disabilities is the ability to draw on their experiences for product design. The indicator looks at whether companies solicit feedback from the disability community in the design process. Less than a quarter of the companies (35) engaged in this process. Most worked with advisory boards or external partners such as disability organisations or forming focus groups. However, Sony and Verizon also mentioned working with internal employee work groups. Huawei, in particular, described a rigorous process of internal testing with engineers with disabilities. There is an opportunity for more companies to engage in these kinds of practices to involve the disability community in product design.

Finally, the indicator looked at whether companies participated in initiatives supporting people with disabilities. Of the 150 companies, 79 reported participating in such initiatives. The initiatives ranged from partnerships with governments and universities to develop products and solutions, to volunteering services, sponsorships, and participation in initiatives such as the Valuable 500 – a partnership of over 500 companies working for disability inclusion.[11]

Overall, two key findings emerge from this indicator. One is that though companies are supporting people with disabilities by providing accessible products and services and participating in initiatives, not enough companies raise this to the level of a strategic priority or material issue. There is an opportunity for companies to better align their communications and strategy with their existing practices regarding support for the disability community. Second, there could be greater disclosure and transparency about the employment of people with disabilities. Companies that do report this follow different standards, are sometimes opaque, and rarely exceed locally required minimums. Companies must make greater efforts to provide transparency on their hiring practices regarding staff with disabilities. Additionally, they should report whether their staff with disabilities are employed in positions where they can contribute to significantly improve digital inclusion internally within the company, as well as externally by participating in the company's design process.

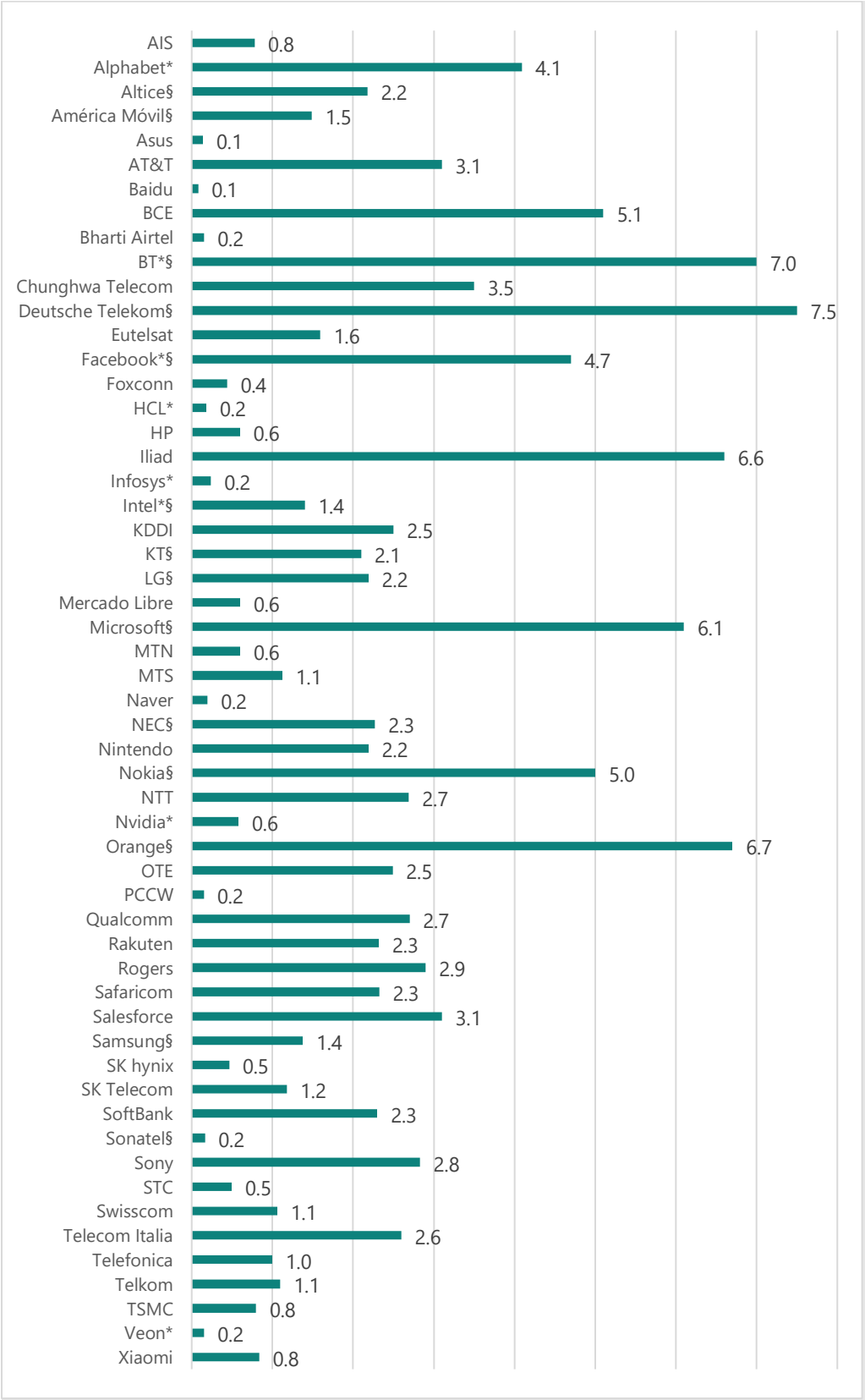
BOX 2.1: GSMA'S PRINCIPLES FOR DRIVING THE DIGITAL INCLUSION OF PERSONS WITH DISABILITIES

The mobile industry association GSMA has developed *Principles for Driving the Digital Inclusion of Persons with Disabilities*, with input from disability and accessibility experts.[12] The principles provide a framework and actions to reduce the digital disability gap in access and use. The principles are:

1. Embrace disability inclusion at every level of the organisation
2. Understand how to reach and better serve persons with disabilities
3. Deliver inclusive products and services that meet the diverse requirements of persons with disabilities

Indicator A3 aligns with these principles as well as the actions within them. So far, eight companies have committed to the GSMA principles, and all of these companies (or their subsidiaries) are included in the benchmark. The companies are: Axiata (Dialog), Singtel (Optus), Telefonica, Orange, Safaricom, Vodafone, Safaricom, and Zain.

FIGURE 2.2: PERCENTAGE OF EMPLOYEES WITH DISABILITIES, 2020



Note: Companies disclosing data. *Self-reported disability. §Certain jurisdictions only.
Source: DIB 2021 (A33a)

2.2 Advancing digital skills

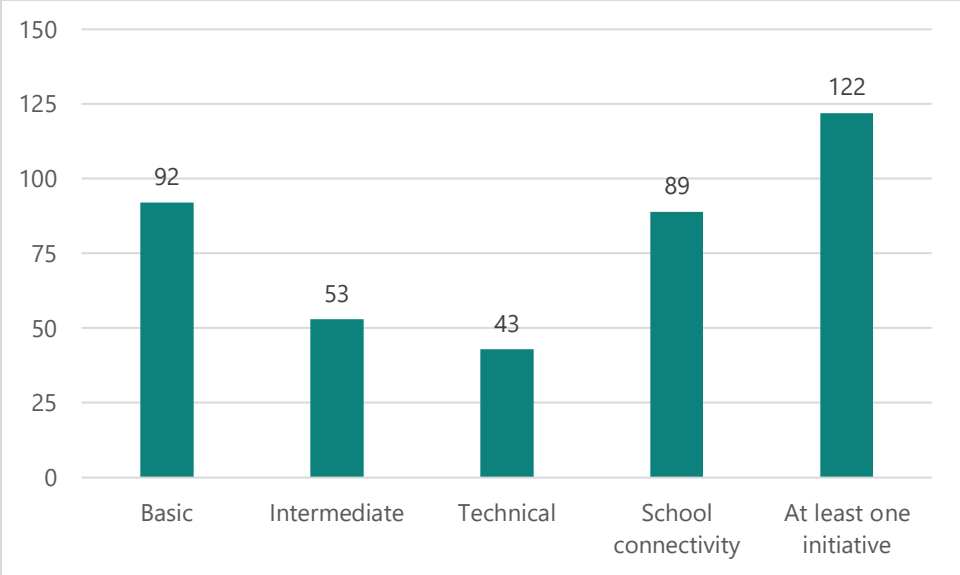
The COVID-19 pandemic has highlighted that digital skills are a modern day necessity.[13] Schoolchildren need digital skills to follow classes from home, parents need them to help their children with online learning and grandparents to stay in touch with their loved ones. The switch to home learning caused by COVID-19 quarantine measures also showed that household devices and internet connectivity are equally important.

The digital skills measurement area assesses companies' corporate social responsibility (CSR) initiatives across four indicators. The first three indicators focus on company programmes for advancing different levels of digital skills (S.1 Basic, S.2 Intermediate and S.3 Technical)[14] while the last indicator focuses on initiatives that enhance school connectivity (S.4).

This measurement area does not count initiatives that are completely online. Due to COVID-19 quarantine restrictions, some companies started offering online courses as part of their digital skills development programmes. However, it is hard to track progress made by participants, especially in online courses. Online courses also make no sense for teaching digital literacy when people completely lack the skills to log into the course or lack digital devices or internet access at home. Therefore, online lessons were not considered in the assessment, unless they were delivered in a hybrid online/offline format or a live webinar format with interaction between teachers and students. It should be noted that online learning is only a partial substitute for in-person teaching, and empirical data finds that test results from remote learning are lower than in-person training.[15]

Evidence was found that 122 companies had at least one initiative in this area (Figure 2.3). Of these, 92 supported basic digital skills development, and 90 had initiatives for school connectivity, with the latter number influenced by COVID-19 interventions.

FIGURE 2.3: NUMBER OF COMPANIES WITH DIGITAL SKILLS INITIATIVES



A distinction was made between companies that provide funding to a third party that has programmes for supporting digital skills development or school connectivity, companies that operate such programmes themselves, and companies with one-off programmes, such as those during the COVID-19 pandemic, or a once-a-year training seminar or workshop.

Examples of companies providing funding to a third party include AT&T's[16] and Comcast's[17] grants to Per Scholas, a US-based non-profit organisation that provides tech training to underrepresented groups, such as women, ethnic and racial minorities and the unemployed. In general, more companies fund programmes

operated by third parties (33%) as opposed to operating programmes themselves (24%). However, the highest scoring companies under each of the four indicators were those with their own programmes (Table 2.2). This is primarily because companies that operate programmes themselves are also the primary data collectors for the programmes they operate, while companies providing funding to third parties rely on the data reported by third parties. For instance, out of all the programmes which the companies reported providing funding to, only 48% report participation data. In contrast, participation data is available for 67% of the programmes operated by companies themselves.

TABLE 2.2: HIGHEST SCORING COMPANIES UNDER EACH SKILLS INDICATOR

Company	Indicator	Score (max 2)	Description
Telstra	S1	1.88	Deadly Digital Communities provides community-based digital literacy and technology training in remote and regional Aboriginal and Torres Strait Islander communities in Queensland.
Tata Communications	S2	1.88	Mpowered empowers women living in extreme poverty in eastern India with custom-designed mobile technology, resulting in improved livelihoods, increased access to financial services and greater participation in government programmes.
Cisco	S3	1.88	Cisco Networking Academy is the world's largest and longest-running corporate social responsibility education programme, through which Cisco has trained over 12.6 million people in technical digital skills over the past 23 years across 180 countries.
Orange	S3	1.88	The Coding School is a freely accessible and totally free-of-charge technological centre that offers training and events for the community of young developers, whiz-kids and people with ideas for projects. It is particularly aimed at students, young graduates and young entrepreneurs.
Apple	S4	2.00	Apple has been part of the ConnectED initiative since 2014, pledging USD 100 million worth of teaching and learning solutions to 114 underserved schools across the United States. Apple claims having donated an iPad to every student, a Mac and iPad to every teacher, and an Apple TV to every classroom. And it has implemented a process that provides planning, professional learning, and ongoing guidance so every school can experience the transformational power of technology.
Telefónica	S4	2.00	Profuturo is a digital education programme promoted by Telefónica Foundation and 'la Caixa' Foundation to narrow the education gap in the world by improving the quality of education for millions of children living in vulnerable environments of Latin America, the Caribbean, Africa and Asia. Profuturo not only provides multimedia and educational content to schools, but also technology and devices (e.g. tablets, computers) to give access to online resources to students free of charge.

Note: S1 = basic skills (i.e. digital literacy), S2 = intermediate digital skills, S3 = technical digital skills and S4 = school connectivity.
Source: DIB 2021.

The indicator on initiatives for school connectivity (S.4) looked at company efforts such as donation of hardware and free or discounted internet access. These initiatives have taken a turn since the pandemic, switching from providing connectivity to schools to connecting children and teachers to the school. Examples include donating laptops to teachers and school children; expanding data allowances or increasing the internet connection quality at children's homes; or providing free access to educational websites. Thirty companies reported a COVID-19 intervention related to school connectivity as their main initiative under this indicator (Table 2.3).

While these initiatives have been critical to supporting remote learning during the pandemic, they are only the tip of the iceberg in terms of the efforts needed to reach the magnitude of students and teachers

without adequate resources to participate in remote learning. According to the International Telecommunication Union (ITU) and the United Nations Children's Fund (UNICEF), two-thirds of the world's school-age children have no internet access at home.[18] Digital companies will need to play a major role if this gap is to be reduced and continue their existing support after COVID-19.

TABLE 2.3: COMPANIES WITH A COVID-19 INITIATIVE FOR SCHOOL CONNECTIVITY

Company	COVID-19 initiative	Location
Akamai	Funded 10 Wi-Fi hotspots to increase access to broadband for online learning.	USA
Alibaba	Launched an Online Classroom initiative shortly after China postponed the start of the new academic semester in January 2020. This initiative provided schools with free digital tools, such as live streaming, online examinations and grading features.	China
Amazon	Through AWS Think Big Experience, helped students participate in virtual learning by providing data packages for more than 300 students' phones and donating 430 tablets to students who had no access to devices.	India
Axiata	XL Axiata donated a total of 425 routers with more than 96,000 gigabytes (GB) of data to support 121,100 students across Indonesia to participate in distance learning.	Indonesia
BT	In June 2020, BT joined forces with the UK government's Department for Education to help the most in-need children in England with online learning. Through this scheme, BT is providing in-need families with six months of free access to the UK's largest Wi-Fi network.	UK
China Unicom	Actively catered for the Ministry of Education's requirement of "Continuous learning during suspension of classes", and launched an innovative comprehensive solution called "WO Family Online Classroom" for all primary and secondary schools.	China
Comcast	Launched the Internet Essentials Partnership Program (IEPP) in 2020 to meet the vital need for students to get online. Through IEPP, sponsored families have access to a high-speed Internet connection at home, the option to purchase a low-cost computer, and access to free digital skills training in person (if safe), online, and in print.	USA
Etisalat	Provided free mobile data to over 12,000 students without internet connectivity.	UAE
Gojek	Through the #BersamaBISA programme, providing 250 students with internet quota and tablets to continue their education amidst the pandemic.	Indonesia
Huawei	To reduce the impact of school closures, Huawei teamed up with local company Bijoy Digital and UNESCO in July 2020 to launch a two-year education project. The goal is to ensure that Bangladeshi children can continue learning from home during the pandemic, through initiatives such as providing tablets preloaded with Bijoy Digital education apps.	Bangladesh
Intel	Intel and CDW-G are providing a total of USD 5 million in personal computers, software, configuration services and digital learning resources. They are also providing stipends of USD 4,000 to selected school districts to set up home internet connectivity for kids in need. The company will also provide support to underserved students in 17 states, by delivering nearly 15,000 devices to 45 school districts.	USA
Lenovo	Students from 2,375 impoverished families in Hubei province received a special package containing a Lenovo tablet and a three-month data card with 90 GB of data.	China
LG	Donated 6,000 tablet personal computers for online education for children from low-income families in preparation of online schooling.	Korea (Rep.)
Liberty Global	Virgin Media is partnering with the charity Business in the Community to fund and distribute 1,500 laptops and mobile dongles to schoolchildren and young adults who are struggling with access to virtual learning.	UK
MTS	Viva-MTS provided its subscribers with access to the Armenian Schoolbooks application without additional internet fees. The app features digitised versions of textbooks recommended by the Ministry of Education, Science, Culture and Sports. Viva-MTS also donated 500 smartphones to disadvantaged schoolchildren for distance learning.	Armenia
NAVER	NAVER supports remote learning for students by providing an online teaching platform to primary, middle, and high schools forced to close their classrooms due to the spread of COVID-19.	Korea (Rep.)
Omantel	Allowed free access to educational websites of the Ministries of Education and Higher Education, donated 555 laptops and equipped teachers to continue giving classes remotely.	Oman
PCCW	Supported the Hong Kong Jockey Club Charities Trust to provide free mobile data usage to more than 30,000 underprivileged students. In addition, the Group provided tablets to support secondary school students from low-income families with online video learning.	Hong Kong
Rakuten	Rakuten ABCmouse, an English education service, provided free services to educational customers such as schools and learning centres to support learning opportunities for children who were unable to take classes due to the temporary closure of all schools across Japan.	Japan

Company	COVID-19 initiative	Location
ServiceNow	Donated more than 260 laptops to students without access to computing devices.	USA
Singtel	Involved in refurbishing 220 laptops with the necessary software so that students could continue learning at home during the COVID-19 circuit breaker period.	Singapore
SK hynix	SK hynix contributed to creating a virtual education environment by providing laptops and tablets to children from low-income families who did not have access to online learning infrastructure.	Korea (Rep.)
SK Telecom	SK Telecom participated in the low-income family education initiative organized by the Ministry of Education. The company also donated personal computers and provided support for covering the costs of high-speed internet to students from low-income families. Further, it offered free Wi-Fi devices for homes and vouchers to use customized content (e.g. online library, online trainings).	Korea (Rep.)
Spark	Spark developed the Recycle a Device (RAD) initiative in 2020 to take second-hand laptops from businesses, refurbish them via secondary schools and then give them to students or youth who do not have a laptop.	New Zealand
STC	Offered affordable data packages for students.	Saudi Arabia
Telkom	Offered learners access to the Lightbulb education platform via the web or on a cell phone at zero data charges.	South Africa
Twitter	Distributed refurbished laptops to help students and families with distance learning.	USA
Verizon	To support remote learning during the COVID-19 pandemic, Verizon tripled the data allowances for participating students and teachers. It also expanded its schools model to provide hotspots to facilitate remote learning for students who have a school-issued device but lack reliable home internet access.	USA
Zain	Zain offered free remote learning and access to educational platforms.	Jordan, Bahrain, Saudi Arabia
Zoom	To enable continuity of education, Zoom lifted the 40-minute time limit for meetings for K-12, primary, and secondary schools on the Zoom Basic plan, enabling schools to use Zoom for free, uninterrupted learning. Zoom also provided its education service for free to over 125,000 schools in 25 countries.	25 countries

Note: The table shows companies that only have a COVID-19 related initiative as part of their efforts to increase school connectivity. It does not include companies that have other programmes to support this indicator, even if these programmes included a specific COVID-19 initiative.
Source: DIB 2021 (S4).

It is difficult to assess what type of initiatives companies should pursue in order to maximise their impact on digital skills development and school connectivity. The level of company involvement in funded programmes is different from their involvement in programmes that they operate themselves. Moreover, without an impact assessment that gauges whether the programme actually helped beneficiaries, it is difficult to evaluate which type of programme creates more impact. Some companies do report impacts they have achieved with regard to digital skills initiatives using information they have collected. However, only nine companies have carried out a third-party impact evaluation of their digital skills initiatives (Box 2.2).

BOX 2.2: IMPACT ASSESSMENTS FOR COMPANIES' DIGITAL ACCESS AND SKILLS INITIATIVES

Only nine companies in total reported a third-party impact assessment of their initiatives for digital skills development. This number increases to 12 in total when assessments of initiatives for increasing digital access are included.

Third-party assessments are often carried out by independent groups specialising in impact assessments. For instance, Sattva, an Indian organisation that advises companies on how to achieve impact from their social programmes, carried out the impact assessment for Tata Communication's A New Education Worldview (ANEW) programme. ANEW includes a component distributing tablets to schools with the Sattva assessment finding that the initiative could be strengthened through more personalized and adaptive Ed-tech learning through a tablet model. Academic researchers also carry out impact assessments. Telia's programme Mer Digital, a digital literacy course for seniors, has been extensively analysed by researchers at the University of Skövde in Sweden, resulting in several research reports.[19] They found that success in teaching seniors included avoiding technical terms many of which are in English and to have small and ongoing training sessions. Without impact assessments, there are limitations to understanding what type of corporate initiatives result in the highest impact.

TABLE 2.4: COMPANIES WITH THIRD PARTY IMPACT ASSESSMENTS OF THEIR DIGITAL ACCESS AND SKILLS INITIATIVES

	Company	Indicator	Publicly available third-party impact assessment
1	Apple	S4	The Apple and ConnectED Initiative: Baseline and year 2 findings from principal, teacher, and student surveys
2	Cisco	S2	Commonlit Digital: Evidence of Effectiveness
3	Comcast	A1	Wired and Hired: Employment Effects of Subsidized Broadband Internet for Low-Income Americans
4	Globe	S1	Inclusive Use of Broadband Connectivity for Quality Education: Insights from Asia and the Pacific
5	HP	S4	Student Growth through Design-Centered Learning Report from the Learning Studios Pilot
6	IBM	S3	Report: Bridging the School-to-Work Divide: Interim Implementation and Impact Findings from New York City's P-TECH 9-14 Schools
7	Tata Communications	S4	Impact Assessment Report of ANEW Program
8	Telefónica	S4	Can Technology Improve the Classroom Experience in Primary Education? An African Experiment on a Worldwide Program
9	Telenor	A1	Case study Khushaal Zamindar. A mobile agriculture service by Telenor Pakistan
10	Telia	S1	Bridging the Gap - Exploring Elderly Citizens' Perceptions of Digital Exclusion
11	Telstra	A2	Safety Net Australia Project
	Telstra	S3	National Centre of Indigenous Excellence, Social Impact 2018-19
12	Vodafone	A2	Vodacom's Mum & Baby service in South Africa

Source: DIB 2021.

2.3 Making digital technology trustworthy

The topic of trust is a key factor in the decision to use digital technologies. Users need to feel confident that digital technologies are safe and secure. A 2019 survey of internet users carried out by the Centre for International Governance Innovation (CIGI) and Ipsos Global shows that many believe more needs to be done to ensure their online safety. Across 25 countries, one in four people surveyed said that they do not trust the internet, and three quarters of the respondents were concerned about their data privacy, with 49% of the respondents claiming they share less data online as a result.[20]

At the same time, cybersecurity incidents and the financial burden of such incidents are on the rise. Between 2014 and 2019, cybersecurity breaches increased by an average of 67%.[21] In addition, the average cost of a data breach rose by 10% to USD 4.24 million between 2019 and 2020.[22] SASB considers data security and customer privacy highly material for digital companies.[23] This demonstrates the importance of trust for both companies and users. It also shows the growing need for companies to take a proactive approach to protecting users from digital risks, including data breaches, and ensuring the same high level of accountability for users' data globally.

The use measurement area covers company practices to protect users from digital risks and harms. Such practices include senior-level cybersecurity oversight and accountability, which helps to ensure the safety of information assets, safeguard personal data, respond to data threats and breaches, and protect vulnerable users such as children. The average score for this measurement area in the benchmark is 0.70 (out of 2), showing that companies can do much more to support the safe use of digital technology. Telefónica, the benchmark leader, also leads in the area of use and is the only company among the 150 to receive a full score of 2.

2.3.1 High-level accountability

Indicator U1 for senior-level cybersecurity oversight reflects the importance companies place on the protection of their digital assets. Senior-level oversight means that the company is prepared to take accountability for the prevention, mitigation and resolution of cybersecurity risks. Only 49 out of the 150 digital companies had a high-level commitment to cybersecurity, as disclosed in their company reports, business codes or cybersecurity documents or websites. Further, out of the 150 companies, only 39 have a dedicated cybersecurity website, or section within a document such as a report or white paper, which details how cybersecurity is managed within the organisation.

Orange is a leading example in the area of senior-level cybersecurity oversight. The company claims that its high-level commitment to cybersecurity stems from its desire to build a society based on trust. Senior-level cybersecurity oversight is provided by the Executive Director of the Strategy and Cybersecurity Division at the company. Furthermore, its Innovation and Technology committee sits at the board level and oversees business-to-business and business-to-customer cybersecurity. Additionally, the company has a global security policy detailing how cybersecurity is managed across the Orange group.

2.3.2 Cybersecurity in practice

In 2020, it took companies 287 days on average to identify and contain a data breach.[24] The companies leading on this indicator are transparent about how they monitor, remedy and report cybersecurity incidents. If companies are proactive about cybersecurity and publicly reporting cybersecurity incidents, users will feel safer and more comfortable using digital technologies. This indicator considers whether the company has a security incident response team, international certification for its information security management, and reports data breaches according to international standards.

2.3.2.1 Security incident response teams

A security incident response team monitors, detects and responds to cybersecurity incidents. The team can go by many names, such as Computer Emergency Response Team or Computer Security Incident Response Team. Of the 150 companies, 63% were found to have a security incident response team. Of these, 48 are

members of the Forum of Incident Response Teams (FIRST), which works to bring together security incident response teams from around the world to foster cooperation and coordination in incident prevention.[25] Further, 46 of the companies also cooperate at the national, regional or international level, such as through bug bounty programmes[26] or the World Economic Forum's Centre for Cybersecurity.[27]

2.3.2.2 ISO 27001 certification

ISO 27001 is the international standard for information security management.[28] An ISO certification requires companies to undergo and pass an audit of their information security practices for reducing cybersecurity risks and promoting greater user trust in their products.

The benchmark looked at whether companies had ISO 27001 certification and if they provided a publicly available copy of the certificate. Of the 150 companies, 102 had such certification. However, only 31 companies made the certificate publicly available (Table 2.5). Given the role that ISO 27001 can play in enhancing confidence among users of a company's products, it is surprising that no publicly available evidence of certification was found for close to 80% of the companies. Being able to view and verify that the company has such a certificate enhances user confidence. Further, the certificate provides additional useful information, such as which products are certified and the expiry date of the certification.

Although some companies claimed they were certified, they were not forthcoming about the certificate itself, and some even required a password to access it. Other companies stated that the certificate was confidential. These companies have an opportunity to enhance transparency by making the certificates publicly available, especially as some certification authorities allow the public to view the certificate even if the company itself does not make it available through its platforms.

One challenge identified is that companies may need multiple certifications, such as for different products or subsidiaries. Companies such as Cisco have multiple ISO 27001 certificates issued by several certification bodies for various arms of their business. Cisco demonstrates leading practice by making its various ISO 27001 certificates publicly available. The 2021 benchmark simply looked for any example of a company having an ISO 27001 certification. However, further research is needed to determine the guidelines for assessing which products and subsidiaries a company should certify. Here again, a public copy of the certificate is useful since it describes the scope of the certification.

TABLE 2.5: COMPANIES PROVIDING A PUBLICLY AVAILABLE COPY OF ISO 27001 CERTIFICATION

	Company	Certified by	Expiration date
1	Acer	BSI	May-21
2	Alibaba	BSI	Mar-21
3	Alphabet	EY	May-24
4	Amazon	EY	Nov-22
5	Apple	BSI	Mar-24
6	ByteDance	BSI	Sep-21
7	Cisco	**	Feb-23
8	Citrix	Coalfire	Dec-22
9	Dell	DQS Inc	Mar-22
10	Deutsche Telekom	DERKA	Dec-24
11	Ericsson	BSI	Dec-23
12	GlobalFoundries	BSI	Mar-22
13	Globe	AJA Registrars	Sep-21
14	Gojek	BSI	May-24
15	HCL	Bureau Veritas	Nov-21
16	HP	BSI	Jun-22
17	Huawei	BSI	Jan-21

	Company	Certified by	Expiration date
18	IBM	Bureau Veritas	Oct-23
19	KT*	KISI	Dec-23
20	NTT	BSI	Jan-23
21	SAP	KPMG	Dec-23
22	Seagate	A-LIGN	Apr-24
23	ServiceNow	Schellman	Sep-24
24	SoftBank	BSI	Jun-24
25	Swisscom	SGS	Dec-22
26	Telefónica	DNV	Jan-21
27	Telenor	DNV	Jul-20
28	Telkom	BSI	Feb-24
29	Telstra	JAS-ANZ	Jan-24
30	Vodafone	Lloyd's Register	Dec-23
31	Xiaomi	BSI	Nov-22

Note: All links valid as of January 2022. Note that the reporting scope for the benchmark was FY 2020. BSI = British Standards Institution. *National certification functionally equivalent to ISO 27001. **DNV GL, Schellman, LLC, TÜV SÜD South Asia Private Limited, Coalfire, ANAB, Lloyd's Register.
Source: DIB 2021 (U22).

2.3.2.3 Data breaches

Data breaches are a specific type of cybersecurity incident affecting personal information. Both GRI[29] and SASB[30] have standards for reporting the number of data breaches. Some companies only disclose substantiated data breaches that have been identified in a written statement addressed to the company by a regulatory authority. Other companies also disclose unsubstantiated incidents. Companies that publicly disclose cybersecurity incidents provide users with an additional layer of transparency. Leading companies in this area disclose the number of breaches as well as the nature of those breaches. This enables users to better understand digital risks and how companies are working to address it.

Eighty-four companies made a mention of data breaches in their list of GRI or SASB disclosures. However, companies often failed to provide adequate and transparent details on the subject. Of the companies that reference GRI or SASB in their disclosure, over 45% did not directly disclose the number of data breaches. Some companies stated that they consider such information confidential or proprietary, even though many other companies have reported this information and, in fact, in many jurisdictions breaches must be disclosed to regulatory authorities. Other companies included a 'phantom' disclosure by referring to a report or web page where no data breach disclosure was found. It is unclear whether companies are merely paying lip service to data breach disclosure or do not understand what is required. For company responses see Table 4.6.

Of the companies that reported data breaches, 33 reported they had no data breach. The remaining 22 companies had between 1 to 701 data breaches, which affected 1-130,000 users. Companies should follow leading practice by disclosing the number of data breaches and the number of people affected. They can also go further by disclosing all types of cybersecurity incidents and distinguishing between substantiated incidents and all reported breaches. The company Grab demonstrates leading practice by disclosing its data breaches in 2020, while also discussing the resolution of previous incidents and its collaboration with the National Privacy Commission of the Philippines to resolve incidents.

2.3.3 Protecting personal data

Companies collect their users' personal information as part of their business activities. The information is used for processing and providing products and services, as well as deriving analytical insights and

conducting targeted, paid advertisement campaigns. Companies have a responsibility to inform users how their data is used and ensure their data is safe.

Several revisions were made to this indicator for the 2021 benchmark. These revisions were implemented in response to challenges identified in the 2020 benchmark regarding company privacy policies. Companies typically had different privacy policies for subsidiaries.[31] Furthermore, the policies also often depended on the user's location due to jurisdictional differences in privacy laws.[32] Interestingly, rather than create a single group policy fulfilling best practice jurisdictional requirements around the world,[33] companies continue to persist with using different privacy policies.

Users of a company's products should have the same basic privacy rights regardless of where they live. As Apple, one of the leading performers on this indicator, notes: "...we believe strongly in fundamental privacy rights — and that those fundamental rights should not differ depending on where you live in the world."[34] To account for this, the 2021 benchmark looked at whether companies had a group-level privacy policy that applied across subsidiaries and across all locations of operation.

Only 47 of the 150 companies have a group-level data privacy policy with principles applying to all subsidiaries across all locations of operation. For companies that have a group-level privacy policy, the indicator goes further into assessing whether these policies disclose:

i. if prior user consent is required to use the collected information;
ii. whether third parties that the data is shared with are required to prevent unauthorised or inappropriate use of the data; and
iii. if users are able to retrieve a copy of their personal information collected by the company.

Only 13 companies meet these three criteria, and 7 of these companies received the maximum score for the indicator (Table 2.6). The remaining 137 companies fail to do this, illustrating how much further companies need to go to treat personal information using the same high standards regardless of where the user is located and adhering to fundamental principles in their privacy policies.

TABLE 2.6: COMPANIES WITH A GROUP PRIVACY POLICY FULFILLING THE THREE KEY CRITERIA

	Company	Group privacy policy
1	Adobe*	Privacy Policy
2	América Móvil	Privacy and Personal Data Protection Policy
3	Apple*	Privacy Policy
4	Deutsche Telekom	Binding Corporate Rules Privacy (BCRP)
5	HP	Privacy Statement
6	Microsoft*	Privacy Statement
7	MTN*	Data Protection and Privacy
8	Naspers	Data Privacy Governance Policy
9	OTE	Binding Corporate Rules Privacy (BCRP)
10	PLDT	Our Privacy Commitment
11	Spark*	Privacy Policy
12	Telefónica*	Global Privacy Policy
13	Telia*	Group Policy - Privacy and Data Protection

Note: All links valid as of February 2022. The three criteria are: 1) requiring prior consent for processing user information; 2) requiring suppliers to prevent unauthorised or inappropriate use of user data; and 3) allowing users to retrieve a copy of their information held by the company. *Achieved the maximum score for the U3 indicator.
Source: DIB 2021 (U3.2).

Another revision to the indicator is the inclusion of a criterion looking at whether companies consider data privacy a key topic in their materiality analysis or high-level public policy statements. This was included to gauge the importance companies attach to data privacy as a material topic. Over 70% of companies

consider data privacy a key topic in their materiality analysis or public policy statements, which indicates a contradiction between the importance of the topic and the actual implementation of data privacy.

The indicator also looks at whether companies disclose information about the number of government requests for user information (i.e. so-called 'transparency reports' and also a SASB metric (TC-XX-220a.4)). While the existence of a transparency report was asked about in the 2020 benchmark it was not scored. Forty-four of the 150 companies disclose this information, the majority through a dedicated annual or bi-annual report (Table 2.7). Of these companies, 25 provide further information, such as the number of requests received per country, while 27 disclose the number of requests with which the company complied.

In addition to asking for user information, governments also request other actions. The nature of the requests differ depending on the type of company. For instance, telecom operators reporting on the topic mention the government requests they receive to shut down networks and block sites. Companies offering social media services, on the other hand, report government requests to block or remove content. Some companies do not report this information for countries where it is against the law to do so, or they report that there is already a government document detailing this information (although they don't provide a link to the document). Other companies report information aggregated at higher levels, such as for regions, or only report information for countries where they receive the most requests. There appears to be some contradiction among companies regarding whether a government allows for publication of information. For example, Vodafone does not publish data on requests for South Africa claiming it faces government restrictions whereas MTN does publish this information.

Most requests for user information appear to relate to crimes such as child exploitation or financial misdeeds. In other cases, there are freedom of expression and human rights considerations, often contextual to a country or region, such as requests to pull or block content that is considered defamatory or qualifies as hate speech or adult content. Whether or not to honour requests to block content that is considered political can be challenging for companies. A concrete and recent illustration of this are the actions that social media companies were faced with following the Russian Federation invasion of Ukraine.[35] Companies' actions included removing misinformation and restricting access to Russian media outlets. At the same time, companies saw access to their sites blocked by the Russian government.[36]

TABLE 2.7: COMPANIES DISCLOSING GOVERNMENT REQUESTS FOR USER INFORMATION, 2020

	Company	Report (U33a)	Stand-alone report?	Includes requests by country (U33a1)	Includes requests complied with (U33a2)
1	Adobe	Government Requests Transparency Report	Yes	Yes	Yes
2	Airbnb	Law Enforcement Transparency Report	Yes	Yes	Yes
3	AIS	Sustainability Report 2020, p.43	No	No	No
4	Alphabet	Google Transparency Report	Yes	Yes	Yes
5	Amazon	Information Request Report	Yes	No	No
6	América Móvil	Communications Transparency Report	Yes	No	Yes
7	Apple	Transparency Report	Yes	Yes	Yes
8	AT&T	Transparency Report	Yes	Yes	Yes
9	BCE	Lawful Access Request Transparency Report	Yes	No	No
10	BT	Digital Impact and Sustainability Report 2021, Appendix 4	No	Yes	No
11	ByteDance	TikTok Transparency Report	Yes	Yes	Yes
12	Chunghwa Telecom	Provision of personal data	No	No	Yes
13	Cisco	Transparency and Law Enforcement Demands for Customer Data	Yes	Yes	Yes
14	Cloudflare	Transparency Report	Yes	Yes	Yes
15	Comcast	Transparency Report	Yes	No	No
16	Deutsche Telekom*	Transparency Report 2020: Assisting security authorities	Yes	Yes	No
17	eBay	Global Transparency Report	Yes	No	No
18	Facebook	Government Requests for User Data	Yes	Yes	Yes
19	Globe	2020 Integrated Report, p. 131	No	No	No
20	IBM	Law Enforcement Requests Transparency Report	Yes	Yes	Yes

	Company	Report (U33a)	Stand-alone report?	Includes requests by country (U33a1)	Includes requests complied with (U33a2)
21	KT	ESG Report 2020, p. 59	No	No	Yes
22	Microsoft	Law Enforcement Requests Report	Yes	Yes	Yes
23	Millicom	Law Enforcement Disclosure (LED) Report	Yes	No	No
24	MTN	Transparency Report	Yes	Yes	Yes
25	NAVER	Transparency Report Statistics	Yes	No	Yes
26	Orange	Transparency Report on Freedom of Expression and Protecting Privacy	Yes	Yes	No
27	OTE	Transparency Report 2020: Assisting security authorities	Yes	Yes	No
28	Qualcomm	2020 Corporate Responsibility Report, p. 37	No	Yes	Yes
29	Rogers	2020 Transparency report	Yes	No	No
30	SK Telecom	Annual Report 2020, p. 132	No	No	No
31	Spark	Transparency Reports	Yes	No	Yes
32	Telecom Italia	Sustainability Report 2020, p.135	No	No	No
33	Telefónica	Report on Transparency in Communication	Yes	Yes	Yes
34	Telenor	Authority Request Disclosure Report	Yes	Yes	Yes
35	Telia	Law Enforcement Disclosure Report	Yes	Yes	Yes
36	Telstra	Bigger Picture 2020 Sustainability Report, p. 22	No	No	No
37	Twilio	Transparency Report	Yes	Yes	Yes
38	Twitter	Transparency Report	Yes	Yes	Yes
39	Uber	Transparency Report	Yes	No	Yes
40	Verizon	Verizon's Transparency Report	Yes	Yes	No
41	Vodafone	Disclosure of Law Enforcement Assistance Demands	Yes	Yes	No
42	Xiaomi	Xiaomi Transparency Report	Yes	Yes	Yes
43	Yandex	Transparency Report	Yes	No	Yes
44	Zoom	Transparency report	Yes	No	Yes

Note: All links valid as of February 2022.
Source: DIB 2021 (U3.3).

BOX 2.3: RANKING DIGITAL RIGHTS

Ranking Digital Rights (RDR)[37] is a non-profit that evaluates and ranks 26 of the world's most influential digital platforms and telecommunications operators on their policies and practices affecting users' rights to freedom of expression and information and privacy. RDR's vision is "an internet that supports and sustains human rights". Their Corporate Accountability Index consists of three pillars: governance, freedom of expression and privacy.

The data privacy indicator in the 2021 Digital Inclusion Benchmark (DIB) is partly informed by the RDR methodology, though RDR goes into more detail and assesses each of the companies subsidiaries (rather than at the group level as is the case for DIB). As such, RDR is the gold standard for data privacy measurement. All but two of the companies that RDR evaluates are also included in DIB. The RDR 2020 Index finds that the top four performers in relation to data privacy are all IT services companies. (i.e. 'Digital Platform' companies).[38]

TABLE 2.8: RDR CORPORATE ACCOUNTABILITY INDEX, 2020

		Total		Privacy	
Company	Type	Score (max 100)	Rank	Score (max 100)	Rank
Apple	Digital Platform	42.96	7	53.56	1
Verizon Media	Digital Platform	51.64	2	51.46	2
Microsoft	Digital Platform	50.21	3	51.28	3
Twitter	Digital Platform	53.19	1	51.20	4
Deutsche Telekom	Telecommunications	33.76	12	48.40	5

Company	Type	Total		Privacy	
		Score (max 100)	Rank	Score (max 100)	Rank
Google	Digital Platform	48.29	5	47.66	6
Telefónica	Telecommunications	49.15	4	46.96	7
Facebook	Digital Platform	45.24	6	45.72	8
Kakao	Digital Platform	41.62	9	43.82	9
Vodafone	Telecommunications	42.36	8	39.49	10
AT&T	Telecommunications	36.61	11	38.20	11
Baidu	Digital Platform	24.86	17	36.73	12
Alibaba	Digital Platform	25.12	16	35.82	13
Mail.Ru	Digital Platform	27.12	14	33.21	14
Yandex	Digital Platform	27.49	13	33.04	15
Telenor	Telecommunications	36.97	10	32.95	16
Tencent	Digital Platform	21.91	20	32.47	17
Amazon	Digital Platform	20.09	22	28.25	18
Samsung	Digital Platform	22.84	18	25.10	19
Orange	Telecommunications	26.55	15	23.59	20
América Móvil	Telecommunications	21.91	21	21.76	21
MTN	Telecommunications	22.65	19	20.33	22
Axiata	Telecommunications	15.77	23	19.22	23
Bharti Airtel	Telecommunications	15.10	24	18.40	24
Etisalat	Telecommunications	10.33	25	11.46	25
Ooredoo	Telecommunications	5.78	26	7.89	26

Note: Sorted by privacy pillar score.
Source: Ranking Digital Rights (https://rankingdigitalrights.org/index2020).

2.3.4 Protecting children

Using digital technologies can come with a range of risks and harms, which might lead to user distrust, confusion, reduced use or even addiction. Children, in particular, are at high risk as they do not have the emotional or cognitive capabilities to detect and mitigate these risks. Nearly two-thirds of children surveyed around the world are exposed to online risks.[39] Examples of these risks include cyberbullying, exposure to violent or sexual content, and addiction to gaming or social media. In 2020, the United States National Center for Missing and Exploited Children received almost 22 million reports related to child sexual abuse material and online enticement.[40]

The COVID-19 pandemic has also driven an increase in internet use and highlighted several potential risks. These include online misinformation and echo chambers, which threaten trust and reinforce narrow points of view, sometimes with little factual evidence. In line with this, a range of studies have already begun to look at the relationship between misinformation and individual health responses to the pandemic.[41]

This indicator in the benchmark considers the measures that companies are taking to mitigate the digital risks and harms children face online. It also looks at whether a company has made a high-level commitment to child online safety. Given the seriousness of the issue, a high-level commitment to child online safety is expected of all digital technology companies as they have products or services that can either indirectly or directly contribute to harming children. However, only 27 companies have an explicit statement about child online safety. Furthermore, only eight companies have strong commitments that go beyond just a company's products and are rooted in children's rights principles,[42] taking the view that child protection is a fundamental human right and safety needs to be a collaborative process[43] (Table 2.9). All but two of these companies are telecommunications operators.

TABLE 2.9: CHILD ONLINE SAFETY COMMITMENTS GROUNDED IN HUMAN RIGHTS PRINCIPLES

	Company	Commitment text stated by the company	Source
1	Adobe	"Adobe is deeply *committed* to keeping children safe online and doing our part to fight the spread of child sexual abuse material."	Adobe's Commitment to Child Safety
2	AT&T	"AT&T is *committed* to helping to safeguard children online, including from the evolving risks of online predators and exploitation."	AT&T's Human Rights Policy
3	Elisa	"Elisa supports a common industry approach to child safety online and accepts that children require, due to their role in society, specific protection. (…) We support and are actively involved with the development of the Rights of Children in Digital Services."	Elisa Human Rights Policy
4	Microsoft	"Microsoft has a long-standing *commitment* to child online protection."	Human Rights Annual Report Fiscal Year 2020
5	MTN	"MTN is *committed* to ensuring the safety of children online."	MTN Transparency Report 2020
6	Telefónica	"We are especially *committed* to protecting children and young people online."	Telefonica Business Principles
7	Vodafone	"We are *committed* to upholding the rights of the child at all stages of our business operations and seek to support children and their parents to become responsible digital citizens. (…)We are a founding signatory of the GSMA Mobile Alliance Against Child Sexual Abuse Content…"	Human Rights Policy Statement
8	Zain	"Zain is *committed* to actively promote and advocate for a safer internet environment for children and youth across its footprint."	Zain Group Human Rights Policy Statement

Note: All links valid as of February 2022.
Source: DIB 2021 (U4.1a).

Telefónica demonstrates leading practice in safeguarding children online. It builds on its commitment through cooperation with law enforcement, and it implements different mechanisms that allow users to report online incidents or harms facing children. Other leading companies such as Vodafone have signed up to self-regulatory industry initiatives such as the GSMA Mobile Alliance Against Child Sexual Abuse Content[44] and the ICT Coalition for Children Online.[45]

Microsoft demonstrates leadership in this area through its child online safety website, which includes various resources for parents, young adults and teachers with tips for remaining safe online. [46] NEC responds to the rights of children set out in the Children's Rights and Business Principles (Box 2.4)[47] through its e-Net Caravan initiative, which offers students from elementary through high school as well as parents and educational professionals training on how to use the internet safely and securely.

BOX 2.4: GLOBAL CHILD FORUM BENCHMARKS

WBA's ally Global Child Forum, benchmarks[48] businesses across different sectors in alignment with the Children's Rights and Business Principles. It not only covers child online safety but other topics relevant to protecting children's human rights both offline and online. The latest Global Child Forum benchmark covers 832 companies selected from the WBA's SDG2000 list.[49] The benchmark identifies seven 'leaders'[50], four of which are digital companies (Vodafone, Telenor, Deutsche Telekom and Samsung).

Global Child Forum also provides case studies for Vodafone[51] and Samsung[52] that go into more detail about their actions for children's rights. Given the impact of COVID-19 on greater digital use by children, the organisation has published a report that looks at the results of digital companies in more detail.[53]

One finding is similar to that of the 2021 Digital Inclusion Benchmark; namely that hardware companies are leading in the area of child online safety, while IT services companies are lagging. Telecommunications operators, on the other hand, lead in the area of product safety. Nevertheless, most companies lag in responsible marketing as well as providing evidence of how their policies for child online safety are implemented.

2.4 The gender tech gap

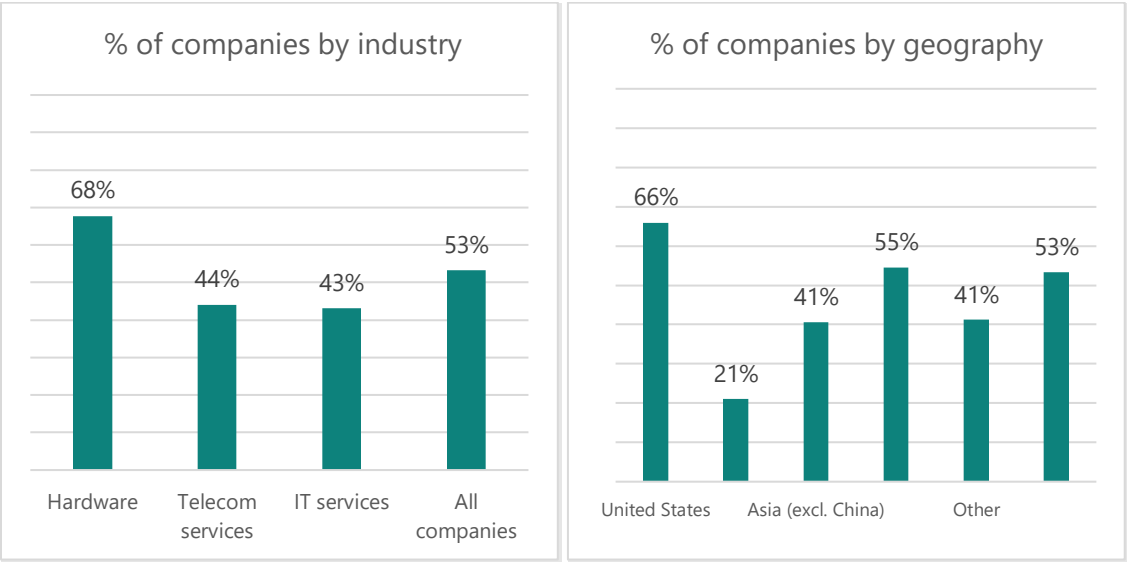
The ITU's latest facts and figures measuring digital development indicate that internet use is moving closer to gender parity. In 2020, 62% of all men used the internet, compared with 57% of all women.[54] Although the gender divide in internet use is decreasing globally, it continues to be wide in certain regions such as sub-Saharan Africa, the Middle East and North Africa, as well as in the least developed countries (LDCs). Moreover, though the gender gap in relation to digital access is shrinking, there remains a large gap between the genders when it comes to tech education and occupations.

2.4.1 Supporting digital inclusion for women and girls

The gender divide continues to persist in the science, technology, engineering and mathematics (STEM) fields. This has led to a disproportionately small number of women in technical roles helping build and design the technology we use. The World Economic Forum's *Global Gender Gap Report 2021* shows that women make up only 14% of the workforce in cloud computing, 20% in engineering, and 32% in data and AI.[55]

Target 5.B of SDG 5 on achieving gender equality relates to technology: "Enhance the use of enabling technology, in particular information and communications technology to promote the empowerment of women".[56] Yet, like last year, only over half the companies (80) in the benchmark had digital initiatives dedicated to women and girls (Figure 2.4). Hardware companies continue to lead the way (with 68% having such initiatives), whereas telecommunications services companies and IT companies trail behind (with 44% and 43% companies having such initiatives respectively). Regionally, the United States surpassed Europe with the highest proportion of companies with an initiative for women and girls (66%), while Asia continues to lag behind.

FIGURE 2.4: COMPANIES WITH A DEDICATED DIGITAL INITIATIVE FOR WOMEN AND GIRLS, 2020



Source: DIB 2021, Indicator A2: The company supports digital inclusivity for women and girls.

Tata Communications achieved the highest score on this indicator, with its MPowered programme teaching women from low-income backgrounds in India how to improve their livelihood through use of mobile

technology. MPowered has reached almost 50,000 women and is notable for its extensive impact metrics, which includes a social return on investment almost seven times greater than Tata's contribution. However, Vodafone and Telstra are the only companies that provide a third party-impact assessment for their programmes for connecting women with digital services.

Systematic barriers, such as cultural or social expectations, often discourage girls from digital opportunities, training and careers. It is therefore encouraging to see that the companies who do have digital initiatives for women and girls are focused on inspiring an interest in STEM.

Fifty-six out of the 80 companies with initiatives covered under this indicator fund non-profit organisations to promote digital inclusivity for women and girls. The most common partnership was found to be with organisations that aim to close the gender gap in tech by exposing girls to STEM subjects through summer camps, clubs and mentoring (Table 2.10).

TABLE 2.10: NON-PROFITS WITH TECH SKILLS PROGRAMMES FOR WOMEN AND GIRLS

Organisation	Number of companies in the benchmark providing funding	Year Founded	Countries	Participants (all time, 2020)
Technovation Girls	6	2010	62	Nearly 80,000 all time; 20,388 in 2020
Black Girls Code	10	2011	US	-
Code First Girls	3	2012	UK	Nearly 50,000 all time
Girls Who Code	11	2012	US, Canada, UK, India	Nearly 450,000 all time
Girls Make Games	3	2014	9	Nearly 22,000 all time; 700 in 2020
Iamthecode	3	2016	-	-

Note: '-' indicates no information was found.
Source: Organisation websites and reports.

Among the STEM mentoring programmes, Technovation Girls stands out for its reporting[57] and third-party assessment.[58] The assessment answers the critical question of what proportion of girls completing the programme go on to study a STEM subject and work in a tech occupation. Alumni who had participated in the programme between 2010 and 2016 were contacted. Among the survey group, over three quarters (76%) studied a STEM-related field, while 60% were working in STEM-related positions, which is well over the US national average. Notably, some were working at companies covered in the benchmark (Amazon, Alphabet, and Meta – parent of Facebook).

2.4.2 Women in tech roles

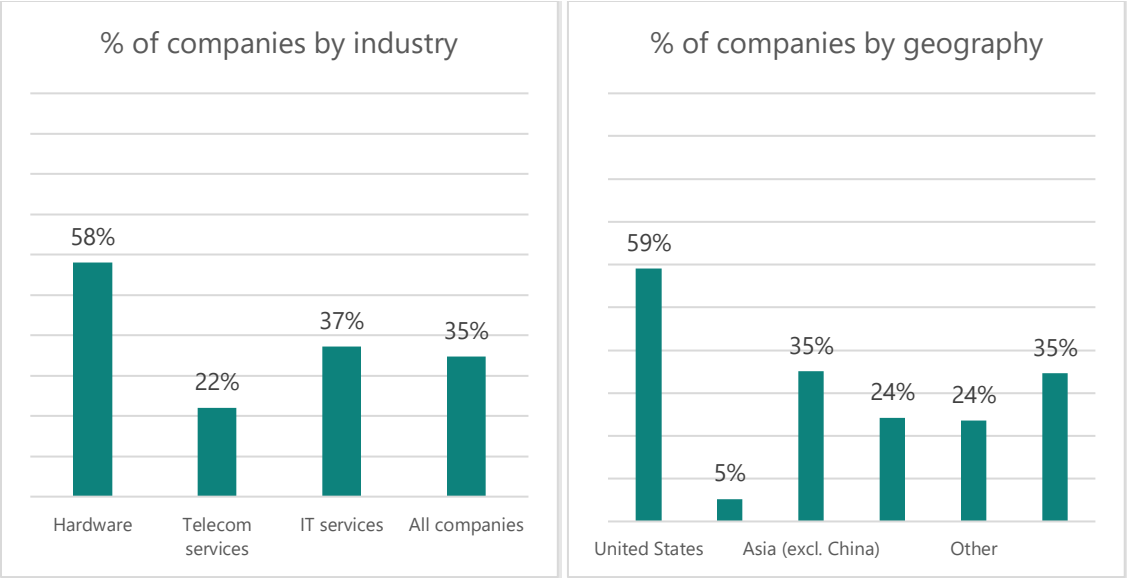
Development of digital goods and services needs to be inclusive to meet the needs of diverse global users. Yet, women continue to be a small minority in technology related fields. In the European Union, more than half of the men earning degrees in IT end up working in digital jobs, compared to one-quarter of women.[59] In Asia, the lack of women in digital jobs does not seem to be due to the lack of female talent. The UN Economic and Social Commission for Asia and the Pacific finds that "in the Republic of Korea (ROK), the percentage of female bachelor graduates in STEM fields increased from around 30% in 2008 to 32% in 2018, and the number of female doctoral graduates in STEM fields doubled from 762 to 1,433 during the same period. [But] despite the increasing trend of highly educated women in STEM, women composed only 20% of the STEM researchers in 2018".[60]

Just over a third of the companies (52 out of 150) reported the number of women in technical roles. While the proportion of companies reporting this figure remains roughly the same as last year, there was an improvement in reporting from Asian companies. SK hynix, SK Telecom and Softbank reported the number of women in technical roles for the first time, increasing the percentage of Asian companies (excluding those in China) reporting in this area. In China, the only company to report this figure continues to be Baidu. For Korean and Japanese companies, this new level of sex-disaggregated reporting is notable and stems from national interventions. The Republic of Korea, for instance, is currently implementing an 'Act on Fostering and Supporting Women Scientists and Technicians', and the Government of Japan is implementing an 'Act on Promotion of Women's Participation and Advancement in the Workplace'. Both these acts are paving the way for improved collection and analysis of data on female employees in these countries.[61]

With 26 companies in the United States reporting the number of women in technical roles, the country still continues to lead in this area, though this reporting is largely due to standardized government reporting requirements (Box 2.5). In terms of the results, newer companies continue to lead in this area with a higher proportion of women making up their technical workforce.

Despite the reputation of the Nordic countries for gender advancement – they comprise 5 of the top 11 countries in the UNDP Gender Index[62] – Telia (reporting in this area for the first time) is the only company in the region to report the number of women that make up its technical workforce. Although Ericsson and Nokia reported the total number of people working in R&D, neither were able to provide a gender disaggregated figure for this.

FIGURE 2.5: COMPANIES REPORTING SHARE OF WOMEN IN TECHNICAL ROLES



For the 52 companies that reported the proportion of women engaged in technical roles, this number stood at an average of 23%. What's more alarming is that, instead of increasing, this share has dropped by one percentage point among the companies that were also included in the 2020 benchmark.

Another important aspect of women empowerment in the tech industry is their presence in high level decision-making. This is discussed in the next chapter in Section 3.3.6.

BOX 2.5: DEFINING 'WOMEN IN TECH'

To better understand and address the gender gap in the tech industry, it must first be measured. For this however, there needs to be a standardised definition of 'women in tech'. There is an array of definitions

that companies consider and report when they talk of women in technical roles. In the United States, the Equal Employment Opportunity (EEO) Commission provides a job classification guide to assist companies with reporting the number of technicians broken down by gender. However, the methodology for this changed in 2018 and most tech-related occupations were reassigned to the professional category (e.g. Computer Network Support Specialists, Software Developers).[63]

Companies headquartered in the United States are increasingly revising their definitions of women in technical roles and disclosing these in their diversity and inclusion reports. These definitions therefore include all IT roles. For instance, Microsoft includes engineering, research, hardware engineering, hardware manufacturing engineering, evangelism and IT operations when reporting women in tech. Adobe, which reports no technicians in its 2020 EEO-1 report, has adopted the following definition used by the AnitaB organisation:

"Technical occupations in computing and information technology that require deep technical specialization and knowledge, as well as managers, directors, and executives who oversee technical employees and the development and delivery of technical products."[64]

Outside the United States, companies report women in technical roles as STEM-related roles or sometimes only engineering roles or R&D. The latter is interesting as there are 25 companies that report the number of their R&D staff (Table 2.11). While it would appear to be a simple process to then disclose how many of these are women, only seven of these companies do so.

TABLE 2.11: COMPANIES REPORTING NUMBER OF R&D EMPLOYEES

	Company	Women employees (as % of tech employees) 2020	R&D employees 2020	R&D employees (as % of total employees) 2020	Women employees (as % of R&D employees) 2020
1	Acer	26	143	2	15
2	Akamai		2,427	29	
3	América Móvil	16	228	0.1	38
4	Baidu	33	24,000	77	17
5	Broadcom		13,230	66	
6	China Telecom		11,967	4	
7	Chunghwa Telecom	22	1,263	4	22
8	Delivery Hero		2,167	6	
9	Ericsson		26,169	26	
10	Huawei		105,000	53	
11	JD.com		17,239	5	
12	Logitech	19	980	16	
13	Mercado Libre	17	5,201	33	
14	NAVER		2,386	58	
15	NetEase		13,565	48	
16	NTT	15	2,000	1	15
17	Orange	20	8,000	6	27
18	SAP		29,580	29	
19	SK Telecom	19	1,572	30	
20	Spotify		2,624	40	
21	Swisscom		4,503	30	
22	Telefónica	21	11,733	10	30
23	Twilio		1,931	42	

	Company	Women employees (as % of tech employees) 2020	R&D employees 2020	R&D employees (as % of total employees) 2020	Women employees (as % of R&D employees) 2020
24	Xiaomi		10,484	47	
25	ZTE		31,737	43	

2.5 Open, sustainable and ethical innovation

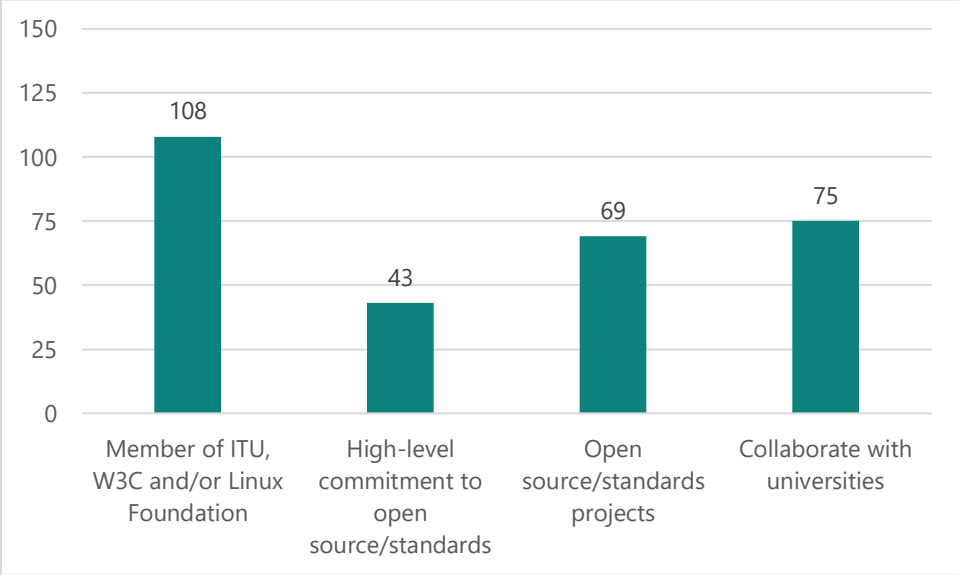
Innovation is a crucial factor in developing hardware, software and services that facilitate safe, affordable and high-quality access. Further, innovation plays a vital role in driving the creation of new cross-cutting digital technologies with the potential to accelerate progress on the SDGs. This section looks at open, ethical and sustainable innovation as well as support for the tech start-up ecosystem.

2.5.1 Openness

Indicator I1 assesses company support for open innovation. It looks at whether the company has a statement supporting open standards and/or open source, whether it is a member of a standards organisation, whether it has its own open source or open standards projects and whether it collaborates with universities in this area.

More than two-thirds of the companies (108) are a member of either the International Telecommunication Union (ITU), World Wide Web Consortium (W3C) or the Linux Foundation.[65] However, only 43 have a high-level commitment to open source or open standards, indicating that while many companies profess support for openness, they are hesitant to commit to it, particularly when it may affect their proprietary solutions. Half of the companies in the benchmark collaborate with universities on research, while 69 have open source or open standards projects.

FIGURE 2.6: NUMBER OF COMPANIES BY SUPPORT FOR OPEN INNOVATION



Source: DIB 2021 (I1).

2.5.2 Tech start-up ecosystem

Many innovative ideas in the tech sector originate from start-ups. In order to scale up, start-ups need support such as mentoring and capital. Indicator I2 looks at initiatives that companies have for start-ups, such as venture capital funding, as well as activities such as incubators, accelerators and competitions. The

indicator considers support for social start-ups as well as for start-ups founded by underrepresented groups.

Of the 150 companies, 109 had at least one initiative for start-ups. Six companies (Alphabet, Apple, Microsoft, Naspers, PayPal and Telefónica) scored the highest possible score (of 2) for this indicator. This means these companies met all of the following five criteria: a) Making venture capital investments; b) Having a dedicated initiative to provide venture capital investments for start-ups founded by persons from underrepresented groups; c) Supporting start-ups with initiatives such as accelerators, incubators and innovation labs; d) Having a dedicated initiative to support social and/or non-profit start-ups; and e) Having a dedicated initiative supporting start-ups founded by persons from underrepresented groups.

Some examples from the top six companies in this area include the following: PayPal Ventures, the corporate venture capital arm of PayPal has invested in 36 start-ups involved in fintech, commerce enablement, digital infrastructure, and crypto/blockchain technologies. Microsoft has partnered with Mayfield and Melinda Gates' Pivotal Ventures to award USD 6 million to four female-founded start-ups. Alphabet's Google for Startups Accelerators in Europe, North America and Indonesia provide start-ups with technical, product and mentoring from the company's experts. Telefónica's Global Sustainable Innovation Program provides support to social enterprises with social or environmental impact. Apple's Impact Accelerator for Black- and Brown-owned Businesses supports start-ups in renewable energy, carbon removal and recycling innovation.

2.5.3 Sustainable innovation

In relation to sustainable innovation, almost two-thirds of the companies (97) reported support for the SDGs and another 77 reported how their activities impacted the SDGs. Some companies even provided this information through dedicated documents or web pages.

The benchmark looked at whether companies shared their big data for sustainability research. Big data refers to very large datasets of user information the company collects, which are then anonymised for sharing. Such data is often too large and too complex to process using traditional approaches. Evidence was found of 29 companies sharing such big data. Quite a few examples related to the use of big data for monitoring movement, such as migration patterns during severe weather events or tracking the spread of diseases such as COVID-19.

The benchmark also looked at whether companies had a time-bound target for reducing emissions and whether they disclosed two SDG targets: renewable energy (7.2.1) and emissions (9.4.1). Over half of the 150 companies (86) had an emissions-reduction target, 52 reported the share of renewables and 119 reported emissions data. An upcoming joint publication of WBA and the ITU will explore this information in greater detail.

2.5.4 Ethical innovation

Artificial Intelligence (AI) developed without ethical guidelines can result in discrimination as well as other human rights risks and contribute to a lack of autonomy in people's lives. Twenty companies reported using a publicly available framework for ethical AI (Table 2.12). This number is up by four from the previous benchmark. However, only one of the original 100 companies (Adobe) has adopted AI principles since then; the remaining three companies (Elisa, NEC and Sony) are among the 50 new companies in the 2021 benchmark.

Overall, adoption of ethical AI principles is moving too slowly given the pace at which AI is being commercialised. What's most concerning is that there are AI-focused companies that have not adopted ethical AI principles. The lack of voluntary adoption of ethical AI principles ultimately points to the need for government regulations.

AI frameworks vary in scope. Most mention the basic principles of fairness, accountability and transparency. Others go further, indicating the kinds of areas the company will not use AI for. A few companies apply

regional[66] or national[67] guidelines that are voluntary rather than their own set of principles. Some companies define the scope of these principles, such as if they apply to the entire group or if they also apply to suppliers. However, not all companies make a mention of human rights considerations in their ethical AI guidelines, thereby framing them in solid globally accepted standards.[68] The levels of commitment to ethical AI guidelines also varies, raising questions about how accountable companies are.

The Nuffield Foundation finds three gaps in AI principles: lack of consensus about ethical concepts and how to apply them; lack of detail between ideals and values; and limited evidence on impacts and public perspectives.[69] The foundation proposes better defining terms such as privacy and bias; identifying how AI both threatens and supports different values; and developing more evidence of ethical societal issues.

TABLE 2.12: COMPANIES FOLLOWING A PUBLICLY AVAILABLE FRAMEWORK FOR ETHICAL AI

	Company	Framework	Commitment text stated by the company	Refers to Human rights
1	Adobe	Adobe's Commitment to AI Ethics	"AI Ethics is one of the core pillars of our commitment to Digital Citizenship, a pledge from Adobe to address the consequences of innovation as part of our role in society."	
2	Alphabet	Artificial Intelligence at Google: Our Principles	"These principles set out our commitment to develop technology responsibly and establish specific application areas we will not pursue."	✓
3	AT&T	Artificial Intelligence at AT&T: Our Guiding Principles	"These principles will guide our decisions from design to deployment."	
4	Deutsche Telekom	Digital Ethics Guidelines for Artificial Intelligence	"With these comes an increase of digital responsibility on our side to ensure that AI is utilized in an ethical manner."	
5	Elisa	Elisa Ethical Principles for Artificial Intelligence	"These principles are accepted and signed by Elisa's Corporate Responsibility Managerial Board."	✓
6	Ericsson*	European Commission Ethics Guidelines for Trustworthy AI	"(...) the EU Commission's ethics guidelines for Trustworthy AI, which we recently adopted and will continually work to align with where possible."	✓
7	IBM	AI Ethics	"The guiding values that distinguish IBM's approach to AI ethics"	
8	Microsoft	Microsoft's AI Principles	"We are committed to the advancement of AI driven by ethical principles that put people first."	✓
9	NEC	NEC Group AI and Human Rights Principles	"In addition to facilitating compliance with relevant laws and regulations around the globe, these principles will guide our employees (...) in each and every stage of our business operations in relation to AI utilization (...)"	✓
10	Nokia	European Commission Ethics Guidelines for Trustworthy AI	"(...) on Nokia's own corporate values and its principles for ethical AI (...) Ethics Guidelines for a Trustworthy AI of the European Commission (...) also continue to provide key frameworks"	✓
11	NTT***	NTT DATA Group's AI Guidelines	"(...) our responsibility to define and comply with AI guidelines to realize a human-centered society in which humans and AI coexist."	✓
12	Orange*	European Commission Ethics Guidelines for Trustworthy AI	"Orange also helped produce recommendations for 'Ethics guidelines for trustworthy AI' within the European Commission's High-Level Expert Group"	✓
13	Samsung	Samsung AI principles	"We are committed to developing devices that are user centric, through AI technology"	
14	SAP	SAP's Guiding Principles for Artificial Intelligence	"(...) these guidelines are a commitment to move beyond what is legally required and to begin a deep and continuous engagement with the wider ethical and socioeconomic challenges of AI."	✓

	Company	Framework	Commitment text stated by the company	Refers to Human rights
15	Sony	Sony Group AI Ethics Guidelines	"The 'Sony Group AI Ethics Guidelines' (Guidelines) set forth the guidelines that must be followed by all officers and employees of Sony when utilizing AI and/or conducting AI-related R&D."	✓
16	Telefónica	AI Principles of Telefonica	"We are committed to implementing them in our products and services."	✓
17	Telenor*	European Commission Ethics Guidelines for Trustworthy AI	"Telenor endorses EU policy and investment recommendations on trustworthy Artificial Intelligence."	✓
18	Telia	Guiding Principles on Trusted AI Ethics	"These Guiding Principles lay out our aspirations to build Trusted AI ethics."	✓
19	Telstra**	Australia's AI Ethics Principles	"At Telstra, we have a commitment to Responsible AI. When implementing and using AI systems, we take into consideration the AI Ethics Principles developed by the Australian Government (...)"	✓
20	Vodafone	Vodafone Artificial Intelligence Framework	"As AI grows in usage and impact across geographies and industries, Vodafone has a responsibility to consider how our use of this technology affects our customers, our employees, and wider society."	✓

Note: All links verified as of January 2022. *Aligns with regional guidelines. **Aligns with national guidelines. ***Applies to a subsidiary and not the group.
Source: DIB 2021 (I4.4).

While having ethical AI principles is a starting point, companies should also describe how they eventually apply these principles in practice. IBM has a guide for implementing AI ethics[70] and has proposed a "declaration of conformity" describing the AI routines used by suppliers.[71] Deutsche Telekom trains AI developers in ethics and applies its AI principles to privacy and security assessments.[72] Further, five companies with AI principles (Adobe, IBM, Microsoft, Nokia and SAP) have established dedicated interdisciplinary committees to advise on operationalising ethical AI (Table 2.13).

TABLE 2.13: COMPANIES WITH AN AI OVERSIGHT GROUP

	Company	Group	Description provided by the company
1	Adobe	Ethics Committee	"Since AI lives at the intersection of technology and human insight, we needed a range of perspectives to help us form our principles and determine our approach. Our ethics committee includes experts from around the world with diverse professional backgrounds and life experiences, and we're confident in their ability to guide our efforts."
2	IBM	AI Ethics Board	"IBM's AI Ethics Board is a central, cross-disciplinary body that fosters a culture of ethical, responsible and trustworthy AI and other technologies throughout IBM. It supports a centralized governance, review and decision-making process for our tech ethics policies, practices, communications, research, products and services."
3	Microsoft	AI, Ethics, and Effects in Engineering and Research (Aether)	"The Aether Committee was established at Microsoft in 2017. Our senior leadership relies on Aether to make recommendations on responsible AI issues, technologies, processes, and best practices. Its working groups undertake research and development, and provide advice on rising questions, challenges, and opportunities."
4	Nokia	AI Ethics and Governance Advisory Board	"Nokia's internal AI Ethics and Governance Advisory Board, set up in 2019, aims to support innovation and enable the development of responsible and trustworthy AI by developing ethical AI principles and guidelines. It leverages internal expertise through specialized working groups and by

			offering multidisciplinary oversight and guidance. It serves as a forum for internal debate on the right approach to solving ethical dilemmas."
5	SAP	AI Ethics Steering Committee	"These principles are maintained and executed by SAP's AI Ethics Steering Committee, which consists of nine executive managers, including the heads of design, machine learning, legal, data protection, and sustainability. The AI Ethics Steering Committee is supported by an external AI Ethics Advisory Panel where academic experts contribute not only from the point of view of IT, but also from the perspective of biology, theology, legal, and other sciences and areas of study.

Note: As of FY 2020. All links verified as of January 2022.
Source: DIB 2021 (I4.3).

[10] https://www.w3.org/WAI/standards-guidelines/wcag/
[11] https://www.thevaluable500.com
[12] GSMA. 2020. *Principles for Driving the Digital Inclusion of Persons with Disabilities* (the "Principles"). https://www.gsma.com/mobilefordevelopment/principles-for-driving-the-digital-inclusion-of-people-with-disabilities
[13] ITU. 2021. *Digital Skills Insights*. https://www.itu.int/en/myitu/Publications/2021/11/05/13/39/Digital-Skills-Insights-2021
[14] The approach adopted for the benchmark follows the framework proposed in EU. 2017. *DigComp 2.1: The Digital Competence Framework for Citizens.* https://publications.jrc.ec.europa.eu/repository/handle/JRC106281
[15] The World Bank, UNESCO and UNICEF. 2021. *The State of the Global Education Crisis: A Path to Recovery*. https://www.unicef.org/reports/state-global-education-crisis
[16] 'AT&T Issue Brief: Building Digital Skills'. https://about.att.com/csr/home/reporting/issue-brief/digital-skills.html
[17] 'Comcast Announces $1 Million Commitment to Per Scholas to Combat the Tech Opportunity Gap Across the U.S.'. *Comcast corporate website*. 3 December 2020. https://corporate.comcast.com/press/releases/comcast-announces-commitment-per-scholas-tech-opportunity-gap
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Holgersson, J., Söderström, E., Rose, J. 2019. "Digital inclusion of elderly citizens for a sustainable society." https://www.diva-portal.org/smash/get/diva2:1317503/FULLTEXT01.pdf
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[22] IBM Security. 2021. *Cost of a Data Breach Report*. https://www.ibm.com/downloads/cas/OJDVQGRY
[23] SASB Materiality Map at: https://materiality.sasb.org/
[24] IBM Security. 2021. *Cost of a Data Breach Report*. https://www.ibm.com/downloads/cas/OJDVQGRY
[25] Forum of Incident Response Teams at: https://www.first.org/about/mission
[26] The Internet Bug Bounty at: https://www.hackerone.com/internet-bug-bounty
[27] World Economic Forum Centre for Cybersecurity: https://www.weforum.org/platforms/the-centre-for-cybersecurity
[28] See "ISO/IEC 27001 Information Security Management" at: https://www.iso.org/isoiec-27001-information-security.html
[29] GRI 418: Customer Privacy. 2018. https://www.globalreporting.org/standards/media/1033/gri-418-customer-privacy-2016.pdf
[30] The SASB standards are industry specific. Disclosure regarding the number of data breaches is an accounting metric within the data security topic with the generic code TC-XX-230a.1.
[31] For instance, Vodafone provides a link to 22 different privacy policies for its subsidiaries. See: https://www.vodafone.com/about/privacy-centre/our-privacy-policy
[32] For instance, Salesforce provides links to different privacy FAQs and white paper for its different regions of operation. See: https://www.salesforce.com/privacy/regions/

[33] The French data protection authority identifies these jurisdictions as having adequate data protection at a national level: European Economic Area members, Argentina, Canada, Israel, Japan, Korea (Rep.), New Zealand, Switzerland, United Kingdom and Uruguay. See: https://www.data.gouv.fr/fr/datasets/protection-des-donnees-personnelles-dans-le-monde/

[34] Apple Privacy Policy (27 October 2021) at: https://www.apple.com/legal/privacy/pdfs/apple-privacy-policy-en-ww.pdf

[35] United Nations. 2022. "General Assembly Overwhelmingly Adopts Resolution Demanding Russian Federation Immediately End Illegal Use of Force in Ukraine, Withdraw All Troops." *Media Coverage*, 2 March. https://www.un.org/press/en/2022/ga12407.doc.htm

[36] Josh Taylor. 2022. "TechScape: How the internet became a key front in Russia's invasion of Ukraine." *The Guardian*, 2 March 2020. https://www.theguardian.com/technology/2022/mar/02/techscape-ukraine-russia-social-media-misinformation

[37] https://rankingdigitalrights.org

[38] Note that DIB classifies Apple as a hardware company as that is its largest source of its revenue.

[39] DQ Institute. 2020. "Nearly two-thirds of children surveyed around the world are exposed to cyber risks, first-ever global Child Online Safety Index reveals" *Press Release*, 13 February. https://www.dqinstitute.org/press-release/nearly-two-thirds-of-children-surveyed-around-the-world-are-exposed-to-cyber-risks-first-ever-global-child-online-safety-index-reveals/

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[43] As Microsoft notes: "Convening tech companies, governments and civil society to create a holistic approach to tackle this whole-of-society issue. We all have a role to play and believe collaboration must be a catalyst for deeper commitment." See: Courtney Gregoire. 2020. "Fighting child exploitation as an industry." *Microsoft*, 12 June. https://blogs.microsoft.com/on-the-issues/2020/06/12/fighting-child-exploitation-project-protect/

[44] GSMA's Mobile Alliance Against Child Sexual Abuse Content at: https://www.gsma.com/publicpolicy/consumer-affairs/children-mobile-technology/mobile-alliance

[45] ICT Coalition for Children Online at: http://www.ictcoalition.eu

[46] Microsoft Online Safety at: https://www.microsoft.com/en-us/online-safety/resources?activetab=pivot1:primaryr6

[47] UNICEF, the UN Global Compact and Save the Children. n.d. *Children's Rights and Business Principles*. https://www.unicef.org/documents/childrens-rights-and-business-principles

[48] Global Child Forum. 2021. *The State of Children's Rights and Business*. https://www.globalchildforum.org/internal-report/global-benchmark-report-2021/

[49] "The 2,000 most influential companies" at: https://www.worldbenchmarkingalliance.org/sdg2000/

[50] "The company has developed and implemented several policies and practices that address the organisation's impact on children's rights across several important areas. The company has taken concrete steps to move beyond policies and has embedded children's rights into company practice. They follow up through monitoring, transparent reporting, and programmes to create action for children's rights. The company also collaborates with others to a great extent." https://www.globalchildforum.org/other/about-2021-benchmark

[51] Global Child Forum. 2021. *The State of Children's Rights and Business 2021: Company Case Vodafone*. https://www.globalchildforum.org/wp-content/uploads/2021/11/case_study_Vodafone_final_211129.pdf

[52] Global Child Forum. 2021. *The State of Children's Rights and Business 2021: Company Case Samsung*. https://www.globalchildforum.org/wp-content/uploads/2021/11/Case-study_Samsung_FINAL_211117.pdf

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[62] Gender Inequality Index (GII) at: http://hdr.undp.org/en/content/gender-inequality-index-gii
[63] US Equal Employment Opportunity Commission, "EEO-1 Component 1 Job Classification Guide." https://eeocdata.org/pdfs/EEO-1%20Component%201%20Job%20Classification%20Guide.pdf
[64] Top Company Definitions at: https://anitab.org/research-and-impact/top-companies/instructions/definitions/
[65] These are the three leading open source and standards organisations that accept corporate members.
[66] European Commission. 2019. *Ethics guidelines for trustworthy AI*. https://data.europa.eu/doi/10.2759/177365
[67] Australian Government. n.d. *Australia's AI Ethics Principles*. https://www.industry.gov.au/data-and-publications/australias-artificial-intelligence-ethics-framework/australias-ai-ethics-principles
[68] The Human Rights Lens for Responsible AI at: https://www.articleoneadvisors.com/why-human-rights-and-ai
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[70] IBM AI Ethics at: https://www.ibm.com/nl-en/artificial-intelligence/ethics
[71] Arnold, Matthew, Rachel K. E. Bellamy, Michael Hind, Stephanie Houde, Sameep Mehta, Aleksandra Mojsilovic, Ravi Nair, et al. 2019. "FactSheets: Increasing Trust in AI Services through Supplier's Declarations of Conformity." https://arxiv.org/abs/1808.07261
[72] Deutsche Telekom. "Digital ethics: Clear responsibility for companies." 12 June 2019. https://www.telekom.com/en/company/management-unplugged/details/digital-ethics-clear-responsibility-for-companies-587298

3 Social transformation fundamentals

WBA developed its Social Transformation Framework with the aim of incentivising responsible business practices that contribute to inclusive and equitable economies and enable systems transformations in a way that leaves no one behind.[73] The framework sets out a series of high-level expectations that companies should meet. These expectations are grounded in companies' responsibility to respect human rights, provide and promote decent work and act ethically. The core social indicators (CSIs, Table 3.1) were developed by WBA to assess whether companies are taking steps towards meeting these expectations.

The context of digital companies introduces notable implications for social transformation. These include human rights risks from online content; decent work implications when platform companies use contractors rather than their own employees; ethical implications of personal data practices; tax avoidance possibilities that digital companies can exploit by operating virtually; and the significant lobbying influence that large tech companies exercise.

TABLE 3.1: CORE SOCIAL INDICATORS (CSI)

Respect human rights	1	Commitment to respect human rights
	2	Commitment to respect the human rights of workers
	3	Identifying human rights risks and impacts
	4	Assessing human rights risks and impacts
	5	Integrating and acting on human rights risk and impact assessments
	6	Engaging with affected and potentially affected stakeholders
	7	Grievance mechanisms for workers
	8	Grievance mechanisms for external individuals and communities
Provide & promote decent work	9	Health and safety fundamentals
	10	Living wage fundamentals
	11	Working hours fundamentals
	12	Collective bargaining fundamentals
	13	Workforce diversity disclosure fundamentals
	14	Gender equality and women's empowerment fundamentals
Act ethically	15	Personal data protection fundamentals
	16	Responsible tax fundamentals
	17	Anti-bribery and anti-corruption fundamentals
	18	Responsible lobbying and political engagement fundamentals

The 150 digital companies in the 2021 Digital Inclusion Benchmark were assessed against the core social indicators (CSIs). However, these scores have not been integrated into the overall scores and ranking in the benchmark. This gives companies an opportunity to better understand the CSI criteria and assess their current disclosures against the CSIs. In the next iteration of the benchmark, the CSIs will be added as an additional measurement area and will account for 20% of the benchmark score. The same will be gradually applied across all WBA transformation benchmarks.

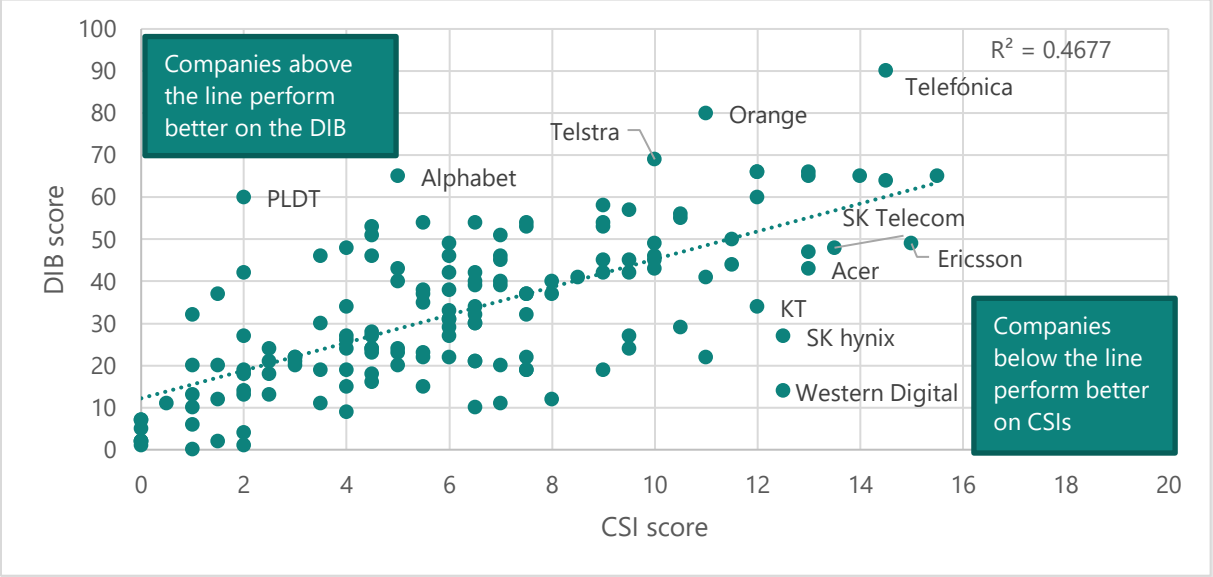
In terms of CSI scores, hardware company HP ranks first (Table 3.2). Moreover, among the top 16 performers in relation to CSIs, eight are hardware companies, seven are telecommunications services providers and only one is an IT services company (Microsoft). Six of these companies are from Asia, including four from the Republic of Korea alone (out of the 6 Korean-headquartered companies in the benchmark). There are also six companies from the United States and four from Europe. One common factor among these top-scoring companies is their age. The best performing companies have a median age of 44 years, implying that longer-established companies are currently ahead with disclosing their social performance.

TABLE 3.2: TOP 15 DIGITAL COMPANIES IN CSI

CSI rank	Company	Year founded	Headquarters	Industry	CSI score (0-20)	Respect human rights (0/10)	Provide & promote decent work (0/6)	Act ethically (0/4)	DIB rank	
									2021	With CSI
1	HP	1947	USA	Hardware	15.5	9.5	3.0	3.0	7	3
2	Ericsson	1876	Sweden	Hardware	15.0	9.5	3.0	2.5	28	17
3 (tied)	Telefónica	1924	Spain	Telecom services	14.5	9.5	2.5	2.5	1	1
3(tied)	Telia	1853	Sweden	Telecom services	14.5	9.0	3.0	2.5	11	6
5	Deutsche Telekom	1995	Germany	Telecom services	14.0	8.0	3.0	3.0	7	5
6	SK Telecom	1984	Korea (Rep.)	Telecom services	13.5	9.5	2.0	2.0	32	19
7 (tied)	Acer	1976	Taiwan	Hardware	13.0	8.5	2.0	2.5	45	30
7 (tied)	KDDI	1953	Japan	Telecom services	13.0	9.0	2.5	1.5	33	22
7 (tied)	Microsoft	1986	USA	IT services	13.0	10.0	1.5	1.5	7	8
7 (tied)	Samsung	1969	Korea (Rep.)	Hardware	13.0	7.5	3.0	2.5	4	4
11 (tied)	SK hynix	1983	Korea (Rep.)	Hardware	12.5	8.5	1.5	2.5	83	67
11 (tied)-	Western Digital	1970	USA	Hardware	12.5	8.5	2.5	1.5	126	99
13 (tied)	Apple	1980	USA	Hardware	12.0	7.5	2.5	2.0	4	9
13 (tied)	Cisco	1984	USA	Hardware	12.0	9.0	1.5	1.5	4	9
13 (tied)	KT	1981	Korea (Rep.)	Telecom services	12.0	9.0	1.5	1.5	69	54
13 (tied)	Verizon	2000	USA	Telecom services	12.0	9.0	2.0	1.0	13	11

There is no significant correlation between the CSI and the benchmark scores (Figure 3.1). Notable outliers include Acer, the Korean-headquartered companies (excluding Samsung) and Western Digital, all of which perform much better on CSIs than on the benchmark. Conversely, companies among the top 15 in the benchmark, namely Orange, Telstra, Alphabet, PLDT and Vodafone, performed relatively worse on the CSIs.

FIGURE 3.1: RELATIONSHIP BETWEEN CSI AND THE DIGITAL INCLUSION BENCHMARK (DIB)



3.1 Overall results

The results show there is room for improvement across industries and geographies. Out of the maximum score of 20 points, the average score for the 150 digital companies is 6.2 (the average for all 1,000 companies assessed was 5.2). While hardware and telecom services companies have an above-average score, IT services lag behind. When analysed by geography, companies with headquarters in Europe, Asia (excluding China) and the United States perform above average, while companies headquartered in other regions (the Middle East, sub-Saharan Africa, Latin America and the Caribbean and the Pacific) perform below average. Digital companies headquartered in China are amongst the poorest performers and score only 2.6 points out of 20 on average (but higher than the 1.2 average for all Chinese companies assessed across all industries).

Similar to the findings in the benchmark, telecom services and hardware companies are outperforming IT services companies on the CSIs. One reason is that many IT services companies have a different operational model. Hardware manufacturers and telecom services companies have a more conventional supply chain with physical presence in the countries in which they operate, making them more visible to their stakeholders. IT services companies, on the other hand, provide services that are less tangible and can be offered around the world without being physically present. Moreover, some of these companies operate in less regulated or ambiguous legal contexts. This is specially the case for IT platform companies, which provide services such as ride hailing and food delivery. The drivers and riders working for these companies are not considered employees, nor are they part of a conventional supply chain. As a result of these factors, IT services companies may be required to meet fewer social expectations in practice, resulting in lack of transparency and action on their part.

The table below shows a snapshot of each CSI measurement area. They include highlights of findings per industry and per region, based on a company's headquarters.[74]

TABLE 3.3: AVERAGE CSI SCORES BY INDUSTRY AND REGION

Industry	Respect human rights (max score 10)	Provide and promote decent work (max score 6)	Act ethically (max score 4)	Total (max score 20)
All 1,000 companies	**2.9**	**1.2**	**1.3**	**5.2**
150 digital companies	**3.5**	**1.5**	**1.3**	**6.2**
By industry				
Hardware	4.6	1.7	1.6	7.9

Industry	Respect human rights (max score 10)	Provide and promote decent work (max score 6)	Act ethically (max score 4)	Total (max score 20)
Telecom services	3.5	1.5	1.4	6.4
IT services	2.7	1.2	1.1	5.0
By region				
Europe	4.2	1.8	1.7	7.7
Asia (excluding China)	4.3	1.5	1.5	7.3
United States	3.9	1.5	1.3	6.7
Other	2.3	1.5	0.9	4.7
China	0.9	0.7	0.7	2.3

3.2 Respect human rights (CSI 1-8)

Companies headquartered in Asia (excluding China) and Europe are leading in the area of respecting human rights. Regardless, these companies still only meet less than half of the indicators in the human rights measurement area. With respect to industry, hardware companies perform best.

3.2.1 Commitment to respect human rights (CSI 1, 2)

CSI 1 looks at whether a company publicly commits to respecting all internationally recognised human rights across its activities. Commendably, 28 of the 33 companies headquartered in Europe, and 26 of the 35 companies headquartered in Asia (excluding China) publicly commit to respecting human rights. In terms of industry breakdown, hardware companies perform well; only 3 out of the 31 hardware companies do not publicly commit to respecting human rights. However, companies headquartered in China do not perform well on this indicator; only 3 out of 19 companies disclose a commitment to respect human rights (Baidu, Huawei and ZTE). IT services companies also perform poorly in regard to making this commitment. Just over half (27 out of 51) of the IT services companies have a publicly available statement committing to respect human rights.

CSI 2 looks at whether companies commit to fundamental rights at work for their employees as well as expect their business relationships to do the same. Of the 150 companies, 35 commit to both and 42 to one or the other. Notably, over half of these 42 companies compel business relationships to make such a commitment but do not do the same for their own workers. The remaining 73 companies have committed to neither.

3.2.2 Human rights due diligence (CSI 3, 4, 5)

The Human Rights Council unanimously endorsed the UN Guiding Principles on Business and Human Rights (UNGPs) in 2011. As part of 'knowing and showing' how they respect human rights, businesses are expected to carry out human rights due diligence, to identify, prevent, mitigate and account for how they address their impacts on human rights. This process is a key element of the UNGPs and sits at the heart of any good approach to managing human rights risks.

CSI 3, 4 and 5 look at whether companies are able to demonstrate they conduct initial steps for human rights due diligence. A company should disclose its process to identify (CSI 3), assess (CSI 4) and integrate (CSI 5) human rights risks and impacts into its business practices as part of its process to respect human rights. As shown in Table 3.4, only 15 companies meet indicators 3, 4 and 5.

Companies headquartered in Asia (excluding China) outperform their peers from other regions in regard to human rights due diligence. All companies headquartered in China scored zero on the three human rights due diligence indicators. IT services companies also lag in this area, except for Microsoft, NEC and Rakuten, which are leaders in disclosing human rights due diligence processes. In fact, Microsoft is notable for having a Technology and Human Rights Center that engages with human rights groups, coordinates the company's human rights due diligence and publishes an annual human rights report.[75]

TABLE 3.4: COMPANIES MEETING THE CSI CRITERIA FOR HUMAN RIGHTS DUE DILIGENCE

	Company	Headquarters	Industry
1	AIS	Thailand	Telecom services
2	Chunghwa Telecom	Taiwan	Telecom services
3	Cisco	USA	Hardware
4	Ericsson	Sweden	Hardware
5	HP	USA	Hardware
6	KDDI	Japan	Telecom services
7	KT	Korea (Rep.)	Telecom services
8	Microsoft	USA	IT services
9	NEC	Japan	IT services
10	Rakuten	Japan	IT services
11	SK hynix	Korea (Rep.)	Hardware
12	SK Telecom	Korea (Rep.)	Telecom services
13	Telefónica	Spain	Telecom services
14	Verizon	USA	Telecom services
15	Western Digital	USA	Hardware

Note: The table presents companies that disclose their process to identify (CSI 3), assess (CSI 4) and integrate (CSI 5) human rights risks and impacts into their business practices.

BOX 3.1: HUMAN RIGHTS IMPLICATIONS OF DIGITAL TECHNOLOGIES

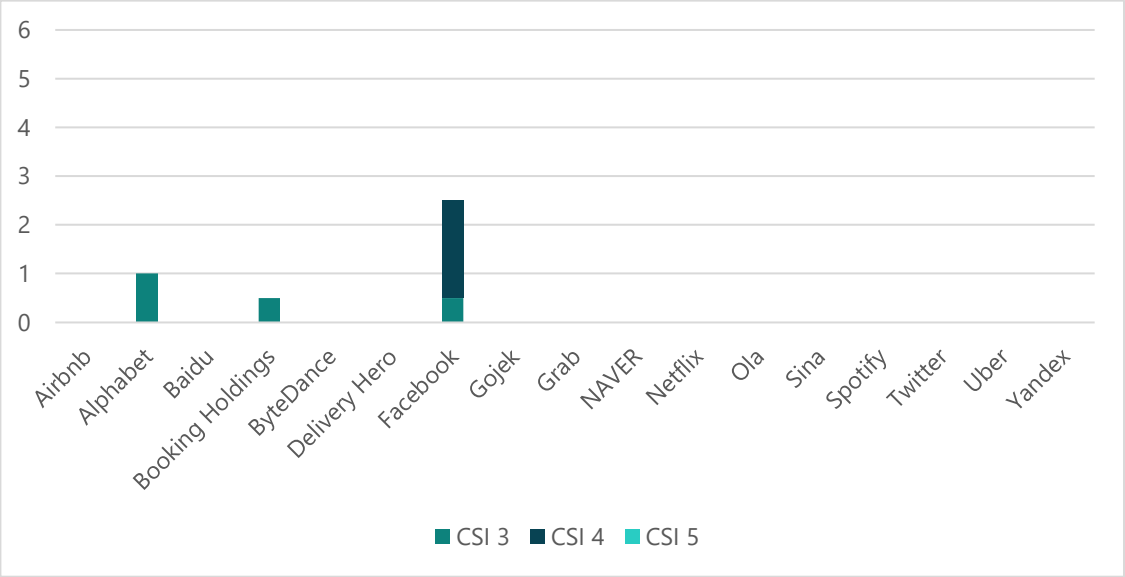
While digital technologies have many benefits, they can also be used in ways that endanger human rights. The UN Human Rights Council notes, "the same rights that people have offline must also be protected online"[76]. The UN Office of the High Commissioner for Human Rights (OCHCR) points out examples of how human rights have been violated online:

"Credible reports, including at times from tech companies themselves, reveal cases of large-scale infringements on privacy, exacerbating ethnic conflict and dissemination of hate speech, undermining democratic processes, enhancing state surveillance, putting children at risk, facilitating live-streaming of abhorrent acts like the Christchurch terrorist attack, online violence against women and LGBTI persons and others, and "algorithmic discrimination" (whether in the job market, the criminal justice system or in access to public services)."[77]

In 2018, following serious human rights violations against the Rohingya in Myanmar, an independent enquiry established by the UN Human Rights Council found that Facebook (now called Meta) had been slow to prevent the proliferation of hate speech and misinformation on its platform.[78] Facebook commissioned a human rights impact assessment that acknowledged the company had not done enough to prevent its platform from being used to foment division and incite offline violence.[79] While the company has improved its identification and assessment of human rights risks, it has yet to integrate assessments as a regular *ex ante* practice.

Of the 17 internet media and services companies included in the benchmark, none demonstrated that they identify, assess and integrate human rights risks and impacts into their business practices, and only two meet at least one of the criteria for human rights due diligence assessed using the CSIs.

FIGURE 3.2: HUMAN RIGHTS DUE DILIGENCE SCORES AMONG INTERNET MEDIA COMPANIES



In addition to online hate speech, other human rights risks of digital technologies include child online safety, data privacy and unethical use of AI, among others. While it may be difficult to identify all human rights risks due to the ubiquitous nature of digital technologies, the importance of the topic cannot be denied. As a starting point, it is essential that companies adequately scope out transparent human rights assessments for particular regions, contexts, products and users *in advance* to mitigate risks.

Several resources exist for assessing human rights impacts in the specific area of digital technologies. The OHCHR B-tech project provides guidance for implementing the United Nations Guiding Principles on Business and Human Rights (UNGPs) in the technology space.[80] The Danish Institute for Human Rights also provides guidance for companies on how to conduct human rights impact assessment of digital activities.[81]

3.2.3 Engaging with affected and potentially affected stakeholders (CSI 6)

Engaging with affected and potentially affected stakeholders is a critical part of a company's approach to respecting human rights. This indicator looks at two criteria: a) The company discloses the categories of stakeholders whose human rights have been or may be affected by its activities; and b) the company provides at least two examples of its engagement with stakeholders (or their legitimate representatives or multi-stakeholder initiatives) whose human rights have been or may be affected by its activities in the last two years.

Only five companies (Acer, Amazon, Apple, Microsoft and NEC) met both criteria, while 117 met neither. Apple is particularly notable in this regard, having conducted interviews with 57,000 supply chain workers in 2020.[82] Apple also solicited feedback from almost 200,000 workers in 135 supply facilities in China, India, Ireland, UK, U.S., and Vietnam resulting in over 3,000 actions to address the workers' concerns. Additionally, the company is investigating the use of new digital labour rights tools featuring data analytics to increase engagement with stakeholders.

3.2.4 Grievance mechanisms (CSI 7, 8)

Enabling remedy for human rights impacts is a key part of demonstrating corporate respect for human rights. CSIs 7 and 8 look at companies' grievance mechanisms for its own workers and for external individuals and communities respectively. Of the 150 companies, 105 had a grievance mechanism for

workers, which is among the CSI indicators where companies perform the best. Further, 92 companies had both types of grievance mechanisms, while 45 demonstrated no evidence of having either type.

3.3 Provide and promote decent work (CSI 9-14)

In regard to providing and promoting decent work, hardware companies perform the best, followed by telecommunications companies and lastly IT services companies. In general, though the gap between leading and lagging industries is wide with respect to human rights, the gap is narrower within the area of providing and promoting decent work.

There are certain categories of workers, however, that companies still tend to overlook in relation to this area. These include people working for platform companies, a sub-industry within IT services, which provide services such as ride hailing and food delivery. The drivers and riders working for these companies are not considered employees, nor are they part of a conventional supply chain. This unique situation makes it challenging to assess their working conditions using the right criteria. To tackle this challenge, the Fairwork project, based at the University of Oxford, has developed a methodology for evaluating the working conditions of platform workers (Box 3.2).

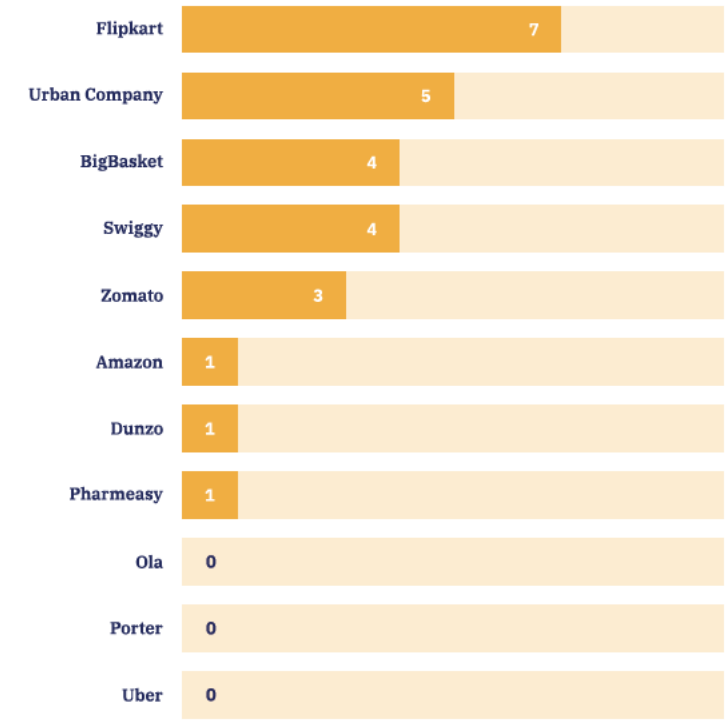
BOX 3.2: PLATFORM COMPANIES AND FAIR WORK

Fairwork evaluates the working conditions of platform workers in five areas: Fair Pay, Fair Conditions, Fair Contracts, Fair Management and Fair Representation. It measures these areas using the following indicators:

1. Fair Pay
    - 1.1 - Pays at least the local minimum wage after costs (one point)
    - 1.2 - Pays at least a local living wage after costs (one additional point)
2. Fair Conditions
    - 2.1 - Mitigates task-specific risks (one point)
    - 2.2 - Provides a safety net (one additional point)
3. Fair Contracts
    - 3.1 - Provides clear and transparent terms and conditions (one point)
    - 3.2 - Does not impose unfair contract terms (one additional point)
4. Fair Management
    - 4.1 - Provides due process for decisions affecting workers (one point)
    - 4.2 - Provides equity in the management process (one additional point)
5. Fair Representation
    - 5.1 - Assures freedom of association and the expression of collective worker voice (one point)
    - 5.2 - Supports democratic governance (one additional point)

As of January 2022, Fairwork has carried out evaluations in 11 countries including India (Figure 3.3). The data reveal a large gap between the best performer Flipkart, an e-commerce company majority-owned by US retailer Walmart, and the rest. Six of the 11 companies (including Amazon, Ola and Uber) that were evaluated scored one or no points.

FIGURE 3.3: FAIRWORK RATINGS FOR INDIA, 2021 (MAX SCORE = 10)



Source: Fairwork. 2021. *Fairwork 2021 Annual Report*. Oxford, United Kingdom. https://fair.work/en/fw/homepage/

3.3.1 Health and safety fundamentals (CSI 9)

Health and safety at work is essential to protect workers against injury and, in extreme cases, death. CSI 9 looks at whether a) companies publicly commit to respecting health and safety; b) disclose comprehensive quantitative health and safety information; c) require that their business relationships publicly commit to respecting health and safety; and d) monitor their business relationships' health and safety performance.

Companies headquartered in Asia (excluding China), Europe and the United States perform best on the health and safety indicator, while Chinese companies lag behind in their performance. No Chinese company meets all the four criteria specified above that are assessed under CSI 9.

On an industry level, 25 out of the 31 hardware companies (81%) meet some of the criteria included in the health and safety indicator. However, only four companies (Acer, HP, Texas Instruments and Western Digital) fully meet all criteria assessed by the indicator. Fifty-four out of 68 telecom companies (79%) partially meet the criteria under this indicator and only two companies (OTE and Singtel) fully meet all criteria. However, no IT services company meets all the health and safety fundamentals, and only 39 out of 51 IT services companies (76%) partially meet these.

3.3.2 Living wage (CSI 10)

For many workers across the globe, the reality is that having a job does not mean being provided with an adequate income to afford a decent standard of living. This is even the case in countries where there is a legal minimum wage. The concept of a living wage that provides a decent standard of living is gaining traction. The Global Living Wage Coalition (GWLC) defines the concept as: "Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs, including provision for unexpected events."[83]

CSI 10 assesses companies on: a) whether they have set targets towards paying a living wage or have achieved paying a living wage in their operations; b) what processes they use to determine living wages; and c) how they work with business relationships to further the achievement of living wages in their value chain.

No company in the benchmark meets all the criteria under the living wage indicator. One challenge is that unlike minimum wages, which are published and hence easy to compare with the actual wages, there is no comprehensive database of living wages around the world.[84] Furthermore, living wages differ by regions of a country. However, companies can play a significant role in advancing the calculation of living wages by disclosing the processes they use to determine living wages for their employees around the world. During engagement with the companies, many acknowledged that they do consider the concept of living wage an important topic that needs to be addressed.

Six companies indicate they pay a living wage to their employees. However, disclosing the underlying methodology and process for determining the living wage will provide greater transparency (Table 3.5). Despite the lack of disclosure of living wages, a number of companies do report data on their wages and some compare them to minimum wages. A number of companies also disclose the total wages and benefits they pay their employees in their financial statements. One exception are companies headquartered in the United States, out of which not a single one clearly discloses personnel expenses in their financial statements.

TABLE 3.5: COMPANIES INDICATING THEY PAY A LIVING WAGE TO THEIR EMPLOYEES

Company	Headquarters	Industry	Company statements relating to living wages
Citrix	USA	IT services	"Citrix supports fair and living wages for all employees." — Citrix code of business conduct
Cloudflare	USA	IT services	"Cloudflare frequently undergoes review and evaluation of all employees compensation to ensure that everyone is paid a living wage at minimum." — Modern Slavery Act Statement
NVIDIA	USA	Hardware	"we are committed to providing a fair and living wage to all employees." [Corporate Social Responsibility Report 2020, 41]
SoftBank	Japan	Telecom services	"(...) SoftBank Group endeavors to pay industry-competitive wages and benefits above living wages without being bound by compliance with the requirements of legal minimum wages." — Social Initiatives
TSMC	Taiwan	Hardware	"Provide fair living wage (...)" —Human Rights Policy
Vodafone	United Kingdom	Telecom services	"we work with the independent organisation, the Fair Wage Network, to assess how our pay compares to the 'living wage' in each of our markets because we are committed to providing a good standard of living for our people and their family." —Fair Pay at Vodafone

3.3.3 Working hours (CSI 11)

CSI 11 looks at three criteria: a) The company publicly states that workers shall not be required to work more than 48 hours in a regular work week or 60 hours including overtime; b) The company publicly states that all overtime work must be consensual and paid at a premium rate; and c) The company has a public expectation that its business relationships shall not require workers to work more than 48 hours in a regular work week or 60 hours including overtime.

No company in the benchmark met all of the criteria assessed under this indicator. Further, only 17 met at least one of the criteria, and two companies (Ericsson and Proximus) met two of the three criteria.

Anecdotal evidence about how much time tech employees work varies, making it difficult to assess the consequences relating to companies' performance on this indicator. One recent survey found that almost a third of the professionals from tech companies worked between three and four hours a day, while roughly another third reported working between seven and ten hours per day.[85] A survey of Chinese tech workers found many complaining about the '996' practice of working from 9 a.m. to 9 p.m. six days a week (i.e. 72 hours a week), with some workers reporting working 10-12 hours a day.[86]

3.3.4 Collective bargaining (CSI 12)

Freedom of association and collective bargaining are important in situations where worker protections are weak and the balance of power in the employment relationship is heavily skewed in the employer's favour. It is imperative that companies actively engage with union or worker representatives so that workers' opinions and concerns are integrated into business decision-making. CSI 12 assesses two criteria: a) The company discloses the proportion of its total direct operations workforce covered by collective bargaining agreements; and b) The company describes how it works to support the practices of its business relationships in relation to freedom of association and collective bargaining. Only three companies (Deutsche Telekom, NTT and TSMC) met both criteria, while 99 companies did not meet either.

TABLE 3.6: COMPANIES MEETING BOTH CRITERIA OF THE COLLECTIVE BARGAINING INDICATOR

Company	12a Proportion of company's total direct operations workforce covered by collective bargaining agreements	12b Company's description of how it works to support the practices of its business relationships in relation to freedom of association and collective bargaining.
Deutsche Telekom	46 %	In its 2020 Corporate Responsibility Report the company states that the majority of its audits are conducted within the scope of the Joint Audit Cooperation (JAC). The JAC Guidelines require, among other things, that its suppliers (...) respect the right to freedom of association and collective bargaining. Compliance with (...) these requirements is reviewed regularly during on-site audits.
NTT	79.4%*	In its Guidelines for CSR in Supply Chain 2020, the company states that "supplier[s] are requested to respect the rights of freedom of association of employees and collective bargaining." Further, the company states: "we also conduct monitoring of compliance with the freedom of association and collective bargaining rights. We assess the responses from suppliers, and designate those with a certain percentage of low-rated responses, or those with a low rating for specific items, as high sustainability risk suppliers. We visit these designated suppliers to perform additional checks, and when corrective action is necessary, we have them prepare an improvement plan and monitor its implementation."
TSMC	0%**	In its Supplier Code of Conduct 2019, the company states that "in conformance with local law, suppliers shall respect the right of all workers to form and join trade unions of their own choosing, to bargain collectively and to engage in peaceful assembly as well as respect the right of workers to refrain from such activities."

Company	12a Proportion of company's total direct operations workforce covered by collective bargaining agreements	12b Company's description of how it works to support the practices of its business relationships in relation to freedom of association and collective bargaining.
		In its Corporate Social Responsibility Report 2019, the company states that it "requires suppliers to meet the sustainability standards through the TSMC Supplier Code of Conduct, which includes workers freedom of association or group consensus, and requires Tier 1 suppliers via [a] Sustainability Self-Assessment Questionnaire to assess risks. [There is also an] Assessment by the TSMC experts, identifying serious violations and prioritizing management tasks (...) [The company also] Monitor[s] suppliers with serious violations, following their continuous improvement to reduce future risks."

Note: *Japan only. **In its Annual Report 2020, TSMC states that "The Company respects the right of all workers to form and join labour unions of their own choosing as well as the right to refrain from such activities. No employees have pursued this avenue or issued a request to form a union so far."

3.3.5 Workforce diversity disclosure (CSI 13)

Workforce diversity has been found to enhance governance, increase profits and lead to greater innovation.[87] This indicator calls for staff breakdowns by a) age group; b) gender; c) race or ethnicity; and d) an additional indicator of diversity (e.g. disability, sexual identification, marital status, etc.). Despite the innocuous nature of these breakdowns, no digital company was able to provide all of them.[88]

One challenge is that the indicator calls for disclosure by a category (e.g. by permanent and contract employees, by age, by role within the company, etc.) rather than an overall figure. Even in terms of an overall figure, 22 companies did not disclose the proportion of total women they employ, let alone provide a breakdown by an employee category. Only four companies (Mercado Libre, Qualcomm, Seagate and Western Digital) reported three of these breakdowns, Table 3.7). The remaining 27 companies did not disclose any of them.

It is clearly not impossible for companies to disclose employee data by different categories. This is demonstrated by the fact that some companies are reporting this information. The lack of disclosure prevents third parties from understanding who works for a company and creates doubt as to whether the company is managing diversity overall.

TABLE 3.7: WORKFORCE DIVERSITY INDICTORS (AS A % OF DIFFERENT CATEGORIES), 2020

Company	Employee category	Age			Gender (female)	Ethnic group	Other ***
		< 30	30-50	>50			
Mercado Libre*	Analysts & Assistants	69.5	30.2	0.2	41.5	Management: 18.4	
	Supervisors	15.5	83.9	0.6	30.6	Technical staff: 56.1	
	Managers	3.9	95.4	0.8	32.6		
	Senior Managers	0.6	99.1	0.2	28.6		
Qualcomm**	Board of Directors	0	0	100	25	8	
	Leadership	0.4	73.4	26.2	16.9	7.2	
	Technical	26.7	62.1	11.2	17.3	6.9	
Seagate**	Board	0	11.1	88.8	22.2	0	
	Management	0.50	62.7	36.7	26.2	28.7	
	Technical	16.8	66.1	17.0	18.8	41.2	
	All other employees	30.0	61.1	8.9	77.2	46.0	

Company	Employee category	Age			Gender (female)	Ethnic group	Other ***
		< 30	30-50	>50			
Western Digital**	Management	0.6	70.0	29.4	25.8	54.9	
	Technical staff	16.4	65.1	18.5	20.3	63.0	
	All other employees	28.8	66.0	5.2	63.0	73.9	

Note: The table shows age, gender and ethnic group breakdowns by the employee categories used by the companies. *Ethnic group refers to black/African American employees in Brazil. **Ethnic group refers to non-white employees in the United States. *** No company reported an additional employee breakdown or indicator of diversity.

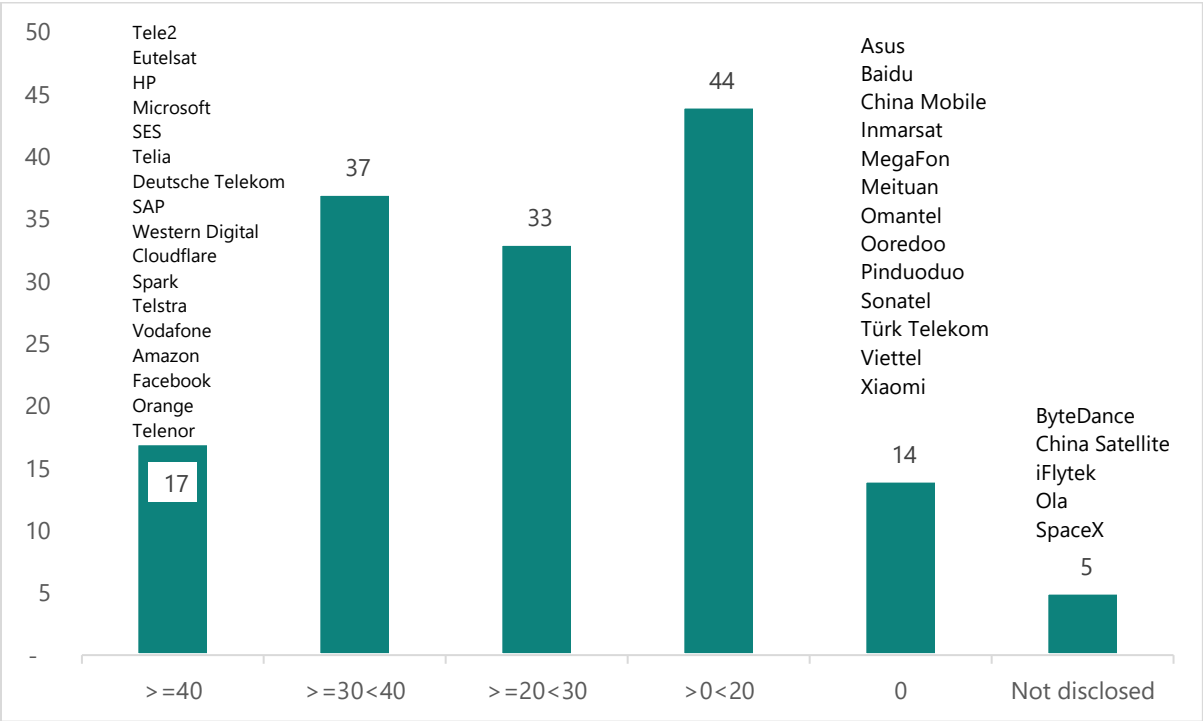
3.3.6 Gender equality and women's empowerment (CSI 14)

This indicator considers: a) whether the company has a public commitment to gender equality and women's empowerment; b) whether the company discloses one or more time-bound targets on gender equality and women's empowerment; c) whether the company has at least 30% women on the highest governance body; and d) whether the company discloses the ratio of the basic salary and remuneration of women to men in its total direct operations workforce for each employee category, by significant locations of operation.

Gender diversity in the company's highest governance body (typically the Board of Directors) is one of the few elements in the benchmark that almost all companies (147 out of 150) demonstrated (Figure 3.4). The indicator considered if at least 30% of the company's highest governance body was comprised of women. This was the case for 54 companies, the vast majority of which are headquartered in Europe and the United States. Swedish-headquartered telecommunications operator Tele2 is notable as the only company where over half the board consists of women (four out of seven or 57%). The Tele2 Board is also geographically diverse with three non-Swedish directors.

However, almost two-thirds of the companies do not meet the 30% target. A little over a dozen companies had no women on their board. These companies are mainly headquartered in the Middle East and East Asia, suggesting possible cultural barriers to women's participation in company governance in these regions.

FIGURE 3.4: NUMBER OF COMPANIES BY SHARE OF WOMEN IN THE HIGHEST GOVERNANCE BODY (%)



3.4 Act ethically (CSI 15-18)

Similar to the measurement area of providing and promoting decent work, the gap between the leading and lagging performers within the measurement area of acting ethically is also narrow. However, hardware companies still lead in this area, with telecom and IT services companies respectively trailing behind. All companies, across industries and regions, showed the best performance in this area in relation to anti-corruption and anti-bribery (CSI 17).

3.4.1 Personal data protection (CSI 15)

This topic is also covered in the previous benchmark findings and discussed in section 2.3.3.

3.4.2 Responsible tax practices (CSI 16)

In order to reduce tax payments, some multinational companies use complex accounting methods to transfer profits to low tax jurisdictions where they have few, if any, physical assets. One study refers to these transfers as "phantom investments" passing through "empty corporate shells" with no tangible business activities.[89] Ten jurisdictions across the world account for 85% of global phantom investments. These jurisdictions include Luxembourg, the Netherlands, Hong Kong SAR, the British Virgin Islands, Bermuda, Singapore, the Cayman Islands, Switzerland, Ireland, and Mauritius. The study concludes that more clarity is needed to understand where, by whom and why these phantom investments occur. In the case of digital companies, the problem is magnified by the ability of some companies to generate profits in a country despite having no physical presence there, thus making it difficult to tax them.

CSI 16 is aimed at enhancing transparency surrounding corporate taxes. It consists of three criteria: a) The company has a publicly available global tax strategy, which is approved by the highest governance body; b) A governance body or executive-level position is tasked with accountability for compliance with the company's global tax strategy; and c) The company clearly discloses the amount of corporate income tax paid for each tax jurisdiction where the company is a resident for tax purposes.

Only ten companies meet all three criteria. All of these are telecommunications operators and two (América Móvil and MTN (Box 3.3)) are not headquartered in a high-income country. At the other end of the spectrum, 88 companies did not meet any of the criteria under this indicator.[90]

BOX 3.3: MTN: DISCLOSURE OF A GLOBAL TAX APPROACH AND TAX PAYMENTS ON A COUNTRY-BY-COUNTRY BASIS

MTN, a South African telecommunications company, published its *Tax Report 2020*, which outlines its tax approach, including its risk management framework, governance structure and guiding principles. According to the report, the MTN Group Board is accountable for all risks, including tax, that potentially affect achievement of the Group's strategic priorities. In addition, its tax risk management reporting is embedded within the Group's governance structures, including the Group Audit Committee, Executive Committee and Group Board. The Group Board and Group Audit Committee also provide oversight of the tax risk management framework.

In the report, MTN also discloses the amount of corporate income tax paid in each tax jurisdiction where the company is a resident for tax purposes. Although MTN met all of WBA's fundamental expectations relating to tax (as assessed under CSI 16), the company has previously come under scrutiny in Nigeria for its tax practices. A request for the company to pay a USD 2.8 billion tax bill was recently withdrawn by the Nigerian government. MTN's example shows how corporate tax transparency is critical for minimising the risk of unethical business conduct and is a growing area of interest for stakeholders, particularly the investor community.

Source: World Benchmarking Alliance (WBA). 2022. *Social Transformation Baseline Assessment*. https://www.worldbenchmarkingalliance.org/research/2022-social-transformation-baseline-assessment/

Only 14 companies meet the spirit of country-by-country disclosure, by disclosing taxes paid in their markets of operation (Table 3.8). All of these are telecommunications services operators. Some disclosed this information through a dedicated tax report while others included a specific table with this information in their financial or environmental, social and governance (ESG) report.

TABLE 3.8: DIGITAL COMPANIES REPORTING COUNTRY-BY-COUNTRY TAX PAYMENTS

	Company	Headquarters	Industry	Company's reference to its tax reporting
1	América Móvil**	Mexico	Telecom services	"Taxes paid by country"*
2	Axiata	Malaysia	Telecom services	"Our Impact to ASEAN and South Asia"*
3	BT**	UK	Telecom services	"Tax Strategy 2021"
4	Deutsche Telekom **	Germany	Telecom services	"Further Relevant Information Related to Deutsche Telekom Footprint"
5	Liberty Global**	UK	Telecom services	"Income taxes" †
6	MTN**	South Africa	Telecom services	"Tax report for the year ended 31 December 2020"
7	MTS	Russia	Telecom services	"Paid income tax by the MTS Group"*
8	Orange**	France	Telecom services	"Orange's tax transparency report"
9	Sonatel	Senegal	Telecom services	"Corporation tax charge by country"†
10	Telecom Italia**	Italy	Telecom services	"Country-by-country reporting"*
11	Telefónica**	Spain	Telecom services	"Country-by-Country Report"†
12	Telenor	Norway	Telecom services	"Country-by-Country Reporting"†
13	Telia	Sweden	Telecom services	"Corporate income taxes paid" [by country]†
14	Vodafone**	UK	Telecom services	"Tax and Economic Contribution 2019-20"

Note: All links valid as of February 2022. The table excludes companies operating primarily in one country. **Met all three elements under indicator (CSI 16). *Table in 2020 Sustainability Report. †Table in 2020 Annual Report.

In October 2021, a new global tax agreement was introduced and signed by most participants of the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS).[91] The agreement has two pillars. The first, particularly relevant for many digital companies, proposes taxing large multinationals (with some conditions) according to where their goods or services are used or consumed, regardless of whether firms have a physical presence there. The second pillar establishes a minimum tax rate of 15% for multinationals.

The first pillar applies to multinationals with a minimum revenue threshold of €20 billion (USD 23 billion) and return on profit (i.e. profit before taxes divided by revenue) of at least 10%. This could impact almost a third of the digital companies, given that in 2020, 45 of these companies had revenues greater than €20 billion.

The top 20 digital companies – which account for 60% of the 150 companies' revenue – reported USD 73 billion in tax payments in 2020 (Table 3.9). While most companies provide a breakdown of their tax payments in the country of their headquarters and the rest of the world, only one company (Deutsche Telekom) provides a country-by-country breakdown. This group of top 20 digital companies reported USD 434 billion in profits with an average tax rate of 17%. Pillar one of the tax agreement would be applicable to a dozen of these companies, whose return on profit is at least 10%, while pillar two would apply to the seven whose tax rate is less than 15%. Of these companies, Apple, Deutsche Telekom and Microsoft are notable for making more than half their tax payments outside the country of their headquarters.

It remains to be seen if the tax agreement results in more transparent tax reporting. As noted, only 14 multinational digital companies currently report their country-by-country tax payments. Moreover, no hardware or IT services multinationals disclose this information, nor do any of the companies headquartered in the United States.

TABLE 3.9: TAX PAYMENTS OF THE 20 LARGEST DIGITAL COMPANIES BY REVENUE, 2020

Company	Headquarters	Industry	Revenue (USD in millions)	Profit before tax (USD in millions)	Return on profit	Income taxes (USD in millions)	Of which paid to foreign countries %	Tax rate
Amazon	USA	IT Services	386,064	24,178	6%	2,863	26%	12%
Apple	USA	Hardware	274,515	67,091	24%	9,680	67%	14%
Samsung	Korea (Rep.)	Hardware	200,637	30,794	15%	8,419	27%	27%
Alphabet	USA	IT Services	182,527	48,082	26%	7,813	19%	16%
Foxconn	Taiwan	Hardware	181,116	4,917	3%	1,053	-	21%
AT&T	USA	Telecom services	171,760	(2,856)		965	37%	
Microsoft	USA	IT Services	143,015	53,036	37%	8,755	50%	17%
Huawei	China	Hardware	129,169	10,478	8%	1,109	-	11%
Verizon	USA	Telecom services	128,292	23,967	19%	5,619	3%	23%
Deutsche Telekom	Germany	Telecom services	115,361	9,911	9%	2,203	72%	22%
NTT*	Japan	Telecom services	116,829	21,060	18%	4,103	9%	19%
China Mobile	China	Telecom services	111,302	20,629	19%	4,959	1%	24%
JD.com	China	IT Services	108,075	7,364	7%	215	-	3%
Alibaba	China	IT Services	103,943	23,994	23%	4,243	-	18%
Comcast	USA	Telecom services	103,564	14,065	14%	3,364	-	24%
Dell	USA	Hardware	94,224	3,670	4%	165	-	4%
Facebook	USA	IT Services	85,965	33,180	39%	4,034	30%	12%
Sony	Japan	Hardware	84,284	11,167	13%	9	-	0%
Intel	USA	Hardware	77,867	25,078	32%	4,179	39%	17%
IBM	USA	IT Services	73,620	4,637	6%	(864)	-	
Total / Average			**2,872,129**	**434,443**	**15%**	**72,886**	**27%**	**17%**

Note: Converted to USD using IMF annual average exchange rate. The "-" indicates that it was not possible to calculate the percentage due to: net loss,, domestic/foreign tax credit, or no breakdown was available by domestic/foreign tax payments.
Source: DIB 2021 (A4).

3.4.3 Anti-bribery and anti-corruption (CSI 17)

Often incentivised by legislation, companies are investing considerable sums in their anti-corruption compliance programmes. The key to making these programmes successful, however, is having procedures in place to prevent corruption from taking place. This indicator looks at whether the company: a) Has a publicly available policy statement prohibiting bribery and corruption; b) Has a process to identify bribery and corruption; c) Includes anti-bribery and anti-corruption clauses in its contracts with business relationships; and d) Has a grievance mechanism for stakeholders to raise bribery and corruption concerns and complaints.

There are 31 companies who fully meet the elements assessed under this indicator. Of these companies, over half are headquartered in Europe (12) and the United States (7). The majority of companies (108) have some anti-bribery and corruption elements in place. However, 89 of these companies fail to disclose a process to identify their bribery and corruption risks and impacts, which is key to ultimately preventing bribery and corruption. Only 11 companies (headquartered in different regions except Europe) do not meet any of the elements under this indicator. Anti corruption is a very high scoring core social indicator, likely reflecting the fact that of all of the issues covered, it has the most amount of legislation - including extra-territorial legislation - driving company compliance.

Shortcomings in anti-bribery and anti-corruption processes can result in incidents that cause companies significant financial and reputational damage. In 2014, Swedish telecommunications operator Telia was fined USD 965 million by the United States and the Netherlands authorities for violating corruption laws relating to its Uzbek subsidiary.[92] Undoubtedly, this was one factor that drove Telia to implement industry-leading anti-bribery and corruption processes (Table 3.10).

TABLE 3.10: TELIA'S ANTI-BRIBERY AND CORRUPTION PROCEDURES

Indicator element	Company statement
17a. The company has a publicly available policy statement prohibiting bribery and corruption	In its Group Policy - Anti-Bribery and Corruption, Telia states that "the purpose of this Group Policy is to set common standards for all Telia Company business regarding compliance with our zero-tolerance policy towards any form of bribery and corruption, and in compliance with local laws of the countries where Telia Company operates."
17b. The company describes the process(es) to identify its bribery and corruption risks and impacts in specific locations or activities covering its own operations	In its Annual and Sustainability Report 2020 [p. 78-79], Telia states that "(...) employees and partners comply with our anti-bribery and corruption (ABC) requirements (...)" Additionally, the company states that "the ABC program is implemented and continuously developed using a risk-based approach through: regular ABC risk assessments to identify and manage key risks, annual maturity assessments to follow up on progress and set annual objectives, implementation and testing of process controls to effectively prevent corruption, training to ensure awareness of ABC risks, supply chain risk management by screening, monitoring and auditing suppliers." Further, it states that "the Special Investigations Office (SIO), which is part of the Group Ethics and Compliance Office, handles special investigations related to potential corruption, fraud and other significant related risks such as retaliation."
17c. The company includes anti-bribery and anti-corruption clauses in its contracts with business relationships	In its Supplier Code of Conduct, Telia states that "(...) supplier commits to work against corruption in all its forms and to commit to conduct its business operations in an ethical manner by maintaining a culture of integrity, transparency, openness and compliance." Further, the company states that suppliers should "(...) have a clear policy against corruption in all its forms, including but not limited to extortion, solicitation, bribery of public officials, private sector bribery, negligent financing of corruption, facilitation payments, nepotism, fraud and money laundering. Not offer, promise, give, request, agree to accept, receive payments, gifts, any kind of undue benefits, charitable or political donations, directly or indirectly, to obtain or retain personal or business advantage from any public official, individual, employees of business partners, including Telia Company itself." Further, the company states that "in the event of supplier's material breach of the requirements of the Supplier Code, Telia shall have the right to immediately terminate its agreement(s) with supplier, without prejudice to any other rights and remedies available."
17d. The company indicates that it has a confidential and anonymous channel/mechanism accessible to all stakeholders to raise bribery and corruption concerns and complaints without fear of reprisals	In its Code of Responsible Business Conduct, Telia states: "We provide a safe, secure and confidential way to express concerns and questions when the usual ways are unavailable or inappropriate." Further, it states that "(...)the Speak-Up Line is an easy, secure and confidential channel where you can raise a concern or report possible wrongdoing. You can make a report anytime, 24/7 without fear of retaliation. You have the option to remain anonymous but if you choose to disclose your identity, feel assured that your report will remain confidential." Telia also has a website for reporting grievances: www.speakupline.ethicspoint.com available in all the languages of its countries of operation. All stakeholders can use the mechanism to file a report, and the complainant has a choice to either remain anonymous or identify themselves.

3.4.4 Responsible lobbying and political engagement (CSI 18)

Companies can use a range of tools to influence political processes, decision-making and ultimately legislation. They can lobby through public relations firms; trade associations; by making contributions to political parties, candidates and campaigns; and through think tanks.[93] The lobbying influence exercised by digital companies is significant: these companies have the second largest expenditures in the United States by sector (after pharmaceuticals) [94] and the largest in the European Union (Box 3.4).

CSI 18 assesses companies for responsible lobbying fundamentals. These cover whether the company: (a) has a publicly available statement of policy that sets out its lobbying and political engagement approach; (b) has a publicly available statement of policy that specifies that it does not make political contributions;

(c) discloses its expenditures on lobbying activities globally; and (d) requires third party lobbyists to comply with its lobbying and political engagement policy.

All companies, across industries and regions, perform poorly on this indicator, scoring the lowest compared to the other indicators relating to acting ethically. Not a single one of the companies meets all of the responsible lobbying fundamentals, and just 31% (46) meet at least one of the fundamentals. Of the 150 companies, only 32 companies have a policy statement regarding lobbying and political engagement. Further, only 39 companies state they do not make political contributions, and just seven companies require third party lobbyists to comply with their lobbying and engagement policy. Moreover, just 8 out of 150 companies (AIS, América Móvil, Deutsche Telekom, SK Telecom, Softbank, Telecom Italia, Telefónica and Telkom Indonesia) provide information on their lobbying expenditures for their global operations.

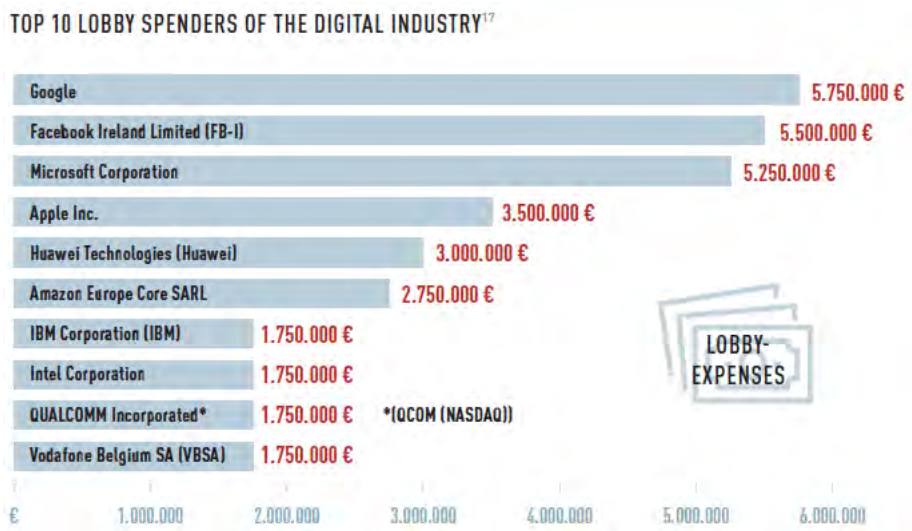
Some companies provide lobbying expenditures for their domestic market, often because this information is disclosed by the respective government authorities anyway. Only four companies meet the majority of the indicator criteria (namely a, b and c): Deutsche Telekom, SK Telecom, Telecom Italia and Telefónica. These four companies can serve as an example for other companies on how to increase transparency in their approach to lobbying and political engagement.

BOX 3.4: 'BIG TECH' LOBBYING IN THE EU

According to a recent study by the Corporate Europe Observatory and LobbyControl, most of the lobbying by tech companies in the European Union (EU) concerns key legislation to regulate digital platforms.[95] Lobbying is focused on the Digital Markets Act and the Digital Services Act, two policies that could impact the business model of big tech firms. The study finds that: "In recent years these firms started embracing regulation in public, yet continue pushing back against behind closed doors."

Over 600 companies lobby the EU on digital topics, spending almost €100 million per year. They are the biggest lobbying sector in the EU by spending, ahead of pharmaceuticals, fossil fuels, finance, and chemicals. Just ten companies, of which eight are headquartered in the United States, are responsible for almost a third of the total tech lobby spending in the EU: Alphabet (parent of Google), Amazon, Apple, IBM, Intel, Huawei, Meta (parent of Facebook), Microsoft, Qualcomm, Vodafone. These companies spent more than €32 million on lobbying activities with EU institutions.

None of these companies provides information on their global lobbying expenditures. All the companies headquartered in the United States are obliged to disclose the political contributions they make in that country but not worldwide**.** Interestingly, even though their EU lobbying expenditures can be accessed via an official EU website,[96] only IBM publicly discloses this information.



[73] World Benchmarking Alliance (WBA). 2022. *Social Transformation Baseline Assessment*. https://www.worldbenchmarkingalliance.org/research/2022-social-transformation-baseline-assessment/
[74] A complete break-down of scores per company, industry and region at the indicator level can be found in the CSI data-sheet at: https://assets.worldbenchmarkingalliance.org/app/uploads/2021/11/Digital-Inclusion-Benchmak-Core-Social-Indicators-detailed-scoring-sheet-2021.xlsx
[75] Microsoft. 2020. *Human Rights Annual Report*. https://www.microsoft.com/en-us/corporate-responsibility/human-rights.
[76] UN Human Rights Council. 2018. *The promotion, protection and enjoyment of human rights on the Internet*. https://digitallibrary.un.org/record/1639840?ln=en
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[78] UN Human Rights Council. 2018. *Report of the detailed findings of the Independent International Fact-Finding Mission on Myanmar*. https://www.ohchr.org/EN/HRBodies/HRC/Pages/NewsDetail.aspx?NewsID=23575&LangID=E
[79] "An Independent Assessment of the Human Rights Impact of Facebook in Myanmar" https://about.fb.com/news/2018/11/myanmar-hria/
[80] See "B-Tech Project" at: https://www.ohchr.org/EN/Issues/Business/Pages/B-TechProject.aspx
[81] The Danish Institute for Human Rights. 2020. *Human rights impact assessment of digital activities*. https://www.humanrights.dk/publications/human-rights-impact-assessment-digital-activities
[82] Apple. 2021. *2020 Statement on Efforts to Combat Human Trafficking and Slavery in Our Business and Supply Chains*. https://www.apple.com/supplier-responsibility/pdf/Apple-Combat-Human-Trafficking-and-Slavery-in-Supply-Chain-2020.pdf
[83] See "The Anker Methodology for Estimating a Living Wage" at: https://www.globallivingwage.org/about/anker-methodology/
[84] GLWC has compiled living wages for 37 countries: https://www.globallivingwage.org
[85] Lydia Dishman. 2021. "Report: One-third of tech workers admit to working only 3 to 4 hours a day." *Fast Company*, 25 January. https://www.fastcompany.com/90597677/report-one-third-of-tech-workers-admit-to-working-only-3-4-hours-a-day
[86] Josh Horwitz. 2021. "Chinese tech workers disclose working hours in criticism of '996'." *Reuters*, 14 October. https://www.reuters.com/world/china/chinese-tech-workers-disclose-working-hours-criticism-996-2021-10-14/
[87] Vijay Eswaran. 2019. "The business case for diversity in the workplace is now overwhelming." *World Economic Forum*, 29 April. https://www.weforum.org/agenda/2019/04/business-case-for-diversity-in-the-workplace/
[88] Another issue is that not all companies are forthcoming about disclosing diversity statistics. See: Jamillah Bowman Williams. 2019. "Why Companies Shouldn't Be Allowed to Treat Their Diversity Numbers as Trade Secrets". *Harvard Business Review*, 15 February. https://hbr.org/2019/02/why-companies-shouldnt-be-allowed-to-treat-their-diversity-numbers-as-trade-secrets
[89] Jannick Damgaard, Thomas Elkjaer and Niels Johannesen. 2019. "The Rise of Phantom Investments." *Finance & Development*, 2019. https://www.imf.org/external/pubs/ft/fandd/2019/09/the-rise-of-phantom-FDI-in-tax-havens-damgaard.htm
[90] This needs to be placed in the context of company presence. Thirty-one of the companies have been identified as operating primarily in the country of their headquarters, where foreign tax obligations are minimal if not zero. Therefore, a global tax strategy or country-by-country reporting may not be so relevant for these companies.
[91] OECD. "International community strikes a ground-breaking tax deal for the digital age." 8 October 2021. https://www.oecd.org/tax/beps/international-community-strikes-a-ground-breaking-tax-deal-for-the-digital-age.htm
[92] "Telia Company reaches a global settlement with the authorities regarding Uzbekistan investigation." *Press Release*, 21 September 2017. https://www.teliacompany.com/en/news/press-releases/2017/9/telia-company-reaches-a-global-settlement-with-the-authorities-regarding-uzbekistan-investigation/
[93] OECD. 2021. *Lobbying in the 21st Century: Transparency, Integrity and Access*. https://doi.org/10.1787/c6d8eff8-en.
[94] See "Open Secrets, Industries" at: https://www.opensecrets.org/federal-lobbying/industries
[95] Corporate Europe Observatory and LobbyControl e.V. 2021. *The Lobby Network: Big Tech's Web of Influence In the EU*. https://corporateeurope.org/en/2021/08/big-tech-takes-eu-lobby-spending-all-time-high
[96] See "Transparency Register" at: https://ec.europa.eu/transparencyregister/public/homePage.do?redir=false&locale=en

4 Annex tables

The annex tables provide additional information on the 2021 Digital Inclusion Benchmark, including the list of companies, benchmark results and selected supplementary tables. The tables present the values for certain indicator criteria, which not only indicates whether the company discloses the information, but also provides the actual figure.

All numerical data refer to the 2020 reporting year. As companies have different reporting periods, the period that covers the most months in 2020 is used. For companies whose fiscal year ends on 30 June, the year ending 2020 is used. The table titled 'Company indicators' shows the reporting period for each company. Conversions to United States dollars are based on the annual average exchange rate from the International Monetary Fund (IMF).

Company indicators. This table presents the full corporate name of the company, location of headquarters, the broad industry it is classified in, reporting period, year the company was founded and 2020 revenue and employees. The 150 companies had a total revenue of USD 4,711 billion and 10.7 million employees in the 2020 reporting year.

Digital Inclusion Benchmark (DIB) results. This table shows the results of the benchmark by measurement area and indicator. It is also available as a spreadsheet at: https://www.worldbenchmarkingalliance.org/research/digital-inclusion-benchmark-2021-data-set/

Core social indicator (CSI) results. This table shows the companies' performance on the CSIs by measurement area and indicator. It is also available as a spreadsheet at: https://assets.worldbenchmarkingalliance.org/app/uploads/2021/11/Digital-Inclusion-Benchmak-Core-Social-Indicators-detailed-scoring-sheet-2021.xlsx

Gender indicators. This table shows the proportion of the company's board members that are female, the proportion of total staff that are female, the proportion of women engaged in technical roles as well as company definitions of technical roles. Median values for the 150 companies for these gender indicators were 25% for women on the board, 33% for women as a share of total employees and 22% for women in technical roles.

Geographic indicators. This table shows the World Bank income group and the region of the company's headquarters, the proportion of employees working in the country of headquarters, the number of countries the company has employees in and the proportion of these countries that are low and middle-income nations. Across the group of 150 companies, 58% of company employees work in the country of headquarters. Further, there are 3,470 unique company-country combinations and 40% of these locations are in low- and middle-income nations.

Data breaches. This table shows whether companies refer to GRI 418-1 or SASB TC-XX-230a.1 in relation to data breaches, whether the companies actually disclose their number of data breaches, whether they consider disclosure of the information confidential and the company text and number of data breaches. Companies show a high degree of opaqueness in reporting on this indicator. While 85 companies refer to one of the global reporting standards in reference to data breaches, only 55 actually disclose specific information on their data breaches. For the companies that disclose the number of data breaches, there were 1,142 incidents in the reporting year 2020.

Economic value distribution. This table is based on GRI 201-1 and is also a World Economic Forum (WEF) Stakeholder Capitalism indicator. The table shows how the value the company generates is distributed among its different stakeholders. It shows if companies make a reference to GRI 201-1 and whether they disclose their economic value distribution. Here, there is a notable discrepancy between the number of companies (69) that claim to disclose GRI 201-1 and those that actually do so (21). The table further looks

at the value of community investment, its share of company net income and the term used by the company to describe community investment.

SDGs. This table shows whether the company supports the SDGs, uses the SDGs as a reporting framework, and discloses SDG targets 7.2.1 and 9.4.1. Of the 150 companies in the benchmark, 97 claimed support for the SDGs, 77 used them as a reporting framework, 72 disclosed SDG target 7.2.1, and 125 disclosed the data needed to calculate SDG target 9.4.1.

TABLE 4.1: DIGITAL INCLUSION BENCHMARK (DIB) 2021 COMPANIES

Company	Corporate name	Headquarters	Industry	Year founded	Fiscal year	Revenue FY2020 (USD in millions)	Employees FY2020 (in thousands)
Acer	Acer Incorporated	Taiwan	Hardware	1976	Ending 31.12	9,367	7.5
Adobe	Adobe, Inc.	USA	IT services	1982	Ending on Friday nearest 30 Nov.	12,868	22.5
Airbnb	Airbnb, Inc.	USA	IT services	2008	Ending 31.12	3,378	5.6
AIS	Advanced Info Service Plc	Thailand	Telecom services	1986	Ending 31.12	5,525	14.1
Akamai	Akamai Technologies Inc	USA	IT services	1998	Ending 31.12	3,198	8.4
Alibaba	Alibaba Group Holding Ltd	China	IT services	1999	Beginning 01.04	103,943	251.5
Alphabet	Alphabet Inc.	USA	IT services	1998	Ending 31.12	182,527	135.3
Altice**	Altice Europe N.V.	Netherlands	Telecom services	2001	Ending 31.12	17,149	23.7
Amazon	Amazon.Com, Inc.	USA	IT services	1994	Ending 31.12	386,064	1,298.0
AMD	Advanced Micro Devices, Inc.	USA	Hardware	1969	Ending last Saturday in Dec.	9,763	12.6
América Móvil	América Móvil, S.A.B. De C.V.	Mexico	Telecom services	2000	Ending 31.12	47,329	186.9
Ant†	Ant Group Co., Ltd.	China	IT services	2014	Ending 31.12	17,456 §	16.7
Apple	Apple Inc.	USA	Hardware	1980	Ending last Saturday in Sep.	274,515	147.0
ASUS	AsusTek Computer Inc.	Taiwan	Hardware	1990	Ending 31.12	13,953	14.7
AT&T	AT&T Inc.	USA	Telecom services	1889	Ending 31.12	171,760	230.8
Axiata	Axiata Group Berhad	Malaysia	Telecom services	1992	Ending 31.12	5,758	12.6
Baidu	Baidu, Inc.	China	IT services	2000	Ending 31.12	15,516	41.0
BCE	BCE Inc.	Canada	Telecom services	1983	Ending 31.12	17,062	50.7
Bharti Airtel	Bharti Airtel Limited	India	Telecom services	1995	Beginning 01.04	13,578	18.0
Booking Holdings	Booking Holdings Inc.	USA	IT services	1997	Ending 31.12	6,796	20.3
Broadcom	Broadcom Inc.	USA	Hardware	1961	Ending on Sunday closest to Oct. 31	23,888	21.0
BT	BT Group plc	United Kingdom	Telecom services	1980	Beginning 01.04	27,347	102.6
ByteDance†	ByteDance Ltd	China	IT services	2012			60.0 §
China Mobile	China Mobile Limited	China	Telecom services	1997	Ending 31.12	111,302	454.3
China Satellite††	China Satellite Communications Co., Ltd.	China	Telecom services	2001			
China Telecom	China Telecom Corporation Limited	China	Telecom services	1995	Ending 31.12	57,031	281.2
China Unicom	China Unicom (Hong Kong) Limited	China	Telecom services	2000	Ending 31.12	44,030	242.1
Chunghwa Telecom	Chunghwa Telecom Co., Ltd.	Taiwan	Telecom services	1996	Ending 31.12	7,018	32.2
Cisco	Cisco Systems, Inc.	USA	Hardware	1984	Ending last Saturday in July	49,301	77.5
Citrix	Citrix Systems, Inc.	USA	IT services	1989	Ending 31.12	3,237	9.0

Company	Corporate name	Headquarters	Industry	Year founded	Fiscal year	Revenue FY2020 (USD in millions)	Employees FY2020 (in thousands)
Cloudflare	Cloudflare, Inc.	USA	IT services	2009	Ending 31.12	431	1.8
Cogent	Cogent Communications Holdings, Inc.	USA	Telecom services	1999	Ending 31.12	568	1.1
Comcast	Comcast	USA	Telecom services	2001	Ending 31.12	103,564	168.0
Delivery Hero	Delivery Hero Group	Germany	IT services	2011	Ending 31.12	2,823	29.0
Dell	Dell Technologies Inc.	USA	Hardware	1984	Beginning after last Friday in Jan.	94,224	158.0
Deutsche Telekom	Deutsche Telekom AG	Germany	Telecom services	1995	Ending 31.12	115,361	226.3
Digicel†	Digicel Group Ltd.	Jamaica	Telecom services	2001	Beginning 01.04	2,300 §§	6.1 §
Digital Realty Trust	Digital Realty Trust, Inc.	USA	IT services	2004	Ending 31.12	3,904	2.9
eBay	eBay Inc.	USA	IT services	1998	Ending 31.12	10,271	12.7
EchoStar	EchoStar Corporation	USA	Hardware	2007	Ending 31.12	1,888	2.4
Elisa	Elisa Corporation	Finland	Telecom services	1882	Ending 31.12	2,164	5.7
Equinix	Equinix, Inc.	USA	IT services	1998	Ending 31.12	5,999	10.0
Ericsson	Telefonaktiebolaget LM Ericsson	Sweden	Hardware	1876	Ending 31.12	25,232	100.8
Etisalat	Emirates Telecommunications Group Company PJSC	UAE	Telecom services	1976	Ending 31.12	14,080	5.9 §§§
Eutelsat	Eutelsat Communications	France	Telecom services	1977	Ending 30.06	1,460	1.0
Facebook*	Facebook, Inc.	USA	IT services	2004	Ending 31.12	85,965	58.6
Foxconn	Hon Hai Precision Industry Co., Ltd	Taiwan	Hardware	1974	Ending 31.12	181,116	969.7
GlobalFoundries	GlobalFoundries Inc.	USA	Hardware	2009	Ending 31.12	4,851	15.0
Globe	Globe Telecom, Inc.	Philippines	Telecom services	1934	Ending 31.12	3,235	8.3
Gojek†	PT GoTo Gojek Tokopedia	Indonesia	IT services	2010	Ending 31.12		5.3
Grab	Grab Holdings Inc.	Singapore	IT services	2012	Ending 31.12	868	6.6
GTT	GTT Communications, Inc.	USA	Telecom services	2005	Ending 31.12	1,728 §	3.1 §
HCL	HCL Technologies Ltd.	India	IT services	1991	Beginning 01.04	10,173	168.0
HP	HP Inc.	USA	Hardware	1947	Ending 31.10	56,639	53.0
Huawei†††	Huawei Investment & Holding Co., Ltd.	China	Hardware	1987	Ending 31.12	129,169	197.0
IBM	International Business Machines Corporation	USA	IT services	1911	Ending 31.12	73,620	345.9
iFlytek	Iflytek Co., Ltd.	China	IT services	1999	Ending 31.12	1,197 §§	10.0
Iliad	iliad S.A.	France	Telecom services	1991	Ending 31.12	6,706	14.7
Infosys	Infosys Limited	India	IT services	1981	Beginning 01.04	13,561	259.6
Inmarsat	Inmarsat Global Limited	United Kingdom	Telecom services	1979	Ending 31.12	1,272	1.7
Intel	Intel Corporation	USA	Hardware	1968	Ending last Saturday in Dec.	77,867	110.6
JD.com	JD.com, Inc.	China	IT services	2004	Ending 31.12	108,075	314.9

Company	Corporate name	Headquarters	Industry	Year founded	Fiscal year	Revenue FY2020 (USD in millions)	Employees FY2020 (in thousands)
Jio	Reliance Jio Infocomm Limited	India	Telecom services	2016	Beginning 01.04	9,432	
Jumia	Jumia Technologies AG	Nigeria	IT services	2012	Ending 31.12	159	4.1
KDDI	KDDI Corporation	Japan	Telecom services	1953	Beginning 01.04	49,755	47.3
KPN	Koninklijke KPN N.V.	Netherlands	Telecom services	1989	Ending 31.12	6,057	10.1
KT	KT Corporation	Korea (Rep.)	Telecom services	1981	Ending 31.12	20,264	22.7
Lenovo	Lenovo Group Limited	Hong Kong	Hardware	1984	Beginning 01.04	60,742	71.5
LG	LG Electronics, Inc.	Korea (Rep.)	Hardware	1958	Ending 31.12	53,599	75.9
Liberty Global	Liberty Global plc	United Kingdom	Telecom services	2005	Ending 31.12	11,980	23.0
Logitech	Logitech International S.A.	Switzerland	Hardware	1981	Beginning 01.04	5,252	9.0
Lumen	Lumen Technologies, Inc.	USA	Telecom services	1968	Ending 31.12	20,712	39.0
MegaFon	JSC MegaFon	Russia	Telecom services	1993	Ending 31.12	4,607	36.7
Meituan	Meituan Dianping	China	IT services	2010	Ending 31.12	16,635	69.2
Mercado Libre	Mercado Libre, Inc.	Argentina	IT services	1999	Ending 31.12	3,974	15.5
Microsoft	Microsoft Corporation	USA	IT services	1986	Ending 30.06	143,015	163.0
Millicom	Millicom International Cellular S.A.	Luxembourg	Telecom services	1990	Ending 31.12	4,171	21.4
MTN	MTN Group Limited	South Africa	Telecom services	1994	Ending 31.12	10,897	19.3
MTS	Mobile Telesystems Public Joint Stock Company	Russia	Telecom services	1993	Ending 31.12	6,864	60.6
Naspers	Naspers Limited	South Africa	IT services	1915	Beginning 01.04	5,934	28.4
NAVER	NAVER Corporation	Korea (Rep.)	IT services	1999	Ending 31.12	4,494	4.1
NEC	NEC Corporation	Japan	IT services	1899	Beginning 01.04	28,040	114.7
NetEase	NETEASE, INC.	China	IT services	1997	Ending 31.12	10,675	28.2
Netflix	Netflix, Inc.	USA	IT services	2002	Ending 31.12	24,996	9.4
Nintendo	Nintendo Co., Ltd.	Japan	Hardware	1947	Beginning 01.04	16,473	6.6
Nokia	Nokia Corporation	Finland	Hardware	1865	Ending 31.12	24,959	90.0
NTT	Nippon Telegraph and Telephone Corporation	Japan	Telecom services	1869	Beginning 01.04	111,862	324.7
NVIDIA	Nvidia Corporation	USA	Hardware	1993	Beginning after last Sunday in Jan.	16,675	19.0
Ola†	ANI Technologies Private Limited	India	IT services	2010			
Omantel	Oman Telecommunications Company (S.A.O.G)	Oman	Telecom services	1996	Ending 31.12	1,386	2.5
Ooredoo	Ooredoo Q.P.S.C.	Qatar	Telecom services	1987	Ending 31.12	7,930	16.0
Oracle	Oracle Corporation	USA	IT services	1977	Beginning 01.06	40,479	132.0
Orange	Orange SA	France	Telecom services	1941	Ending 31.12	48,281	142.2
OTE	Hellenic Telecommunications Organization S.A.	Greece	Telecom services	1949	Ending 31.12	3,722	12.2

Company	Corporate name	Headquarters	Industry	Year founded	Fiscal year	Revenue FY2020 (USD in millions)	Employees FY2020 (in thousands)
Palantir	Palantir Technologies Inc.	USA	IT services	2003	Ending 31.12	1,093	2.4
PayPal	PayPal Holdings, Inc.	USA	IT services	1998	Ending 31.12	21,454	26.5
PCCW	PCCW Limited	Hong Kong	Telecom services	1925	Ending 31.12	4,905	22.9
Pinduoduo	Pinduoduo Inc.	China	IT services	2015	Ending 31.12	8,621	8.0
PLDT	PLDT Inc.	Philippines	Telecom services	1928	Ending 31.12	3,648	18.8
Proximus	Proximus Group	Belgium	Telecom services	1994	Ending 31.12	6,258	10.5
Qualcomm	QUALCOMM Incorporated	USA	Hardware	1985	Ending last Sunday in Sep.	23,531	41.0
Rakuten	Rakuten, Inc.	Japan	IT services	1997	Ending 31.12	13,632	23.8
Rogers	Rogers Communications Inc.	Canada	Telecom services	1960	Ending 31.12	10,376	23.5
Safaricom	Safaricom PLC	Kenya	Telecom services	1997	Beginning 01.04	2,352	6.2
Salesforce	salesforce.com, inc.	USA	IT services	1999	Beginning 02.01	21,252	56.6
Samsung	Samsung Electronics Co., Ltd.	Korea (Rep.)	Hardware	1969	Ending 31.12	200,637	267.9
SAP	SAP SE	Germany	IT services	1972	Ending 31.12	31,225	102.4
Seagate	Seagate Technology Public Limited Company	Ireland	Hardware	1978	Typically from end of June	10,509	42.0
ServiceNow	ServiceNow, Inc.	USA	IT services	2004	Ending 31.12	4,519	13.1
SES	SES S.A.	Luxembourg	Telecom services	1985	Ending 31.12	2,143	2.1
Sina†	SINA Corporation	China	IT services	1999	Ending 31.12	2,163 §	8.3 §
Singtel	Singapore Telecommunications Limited	Singapore	Telecom services	1992	Beginning 01.04	11,338	22.9
SK hynix	SK hynix Inc.	Korea (Rep.)	Hardware	1983	Ending 31.12	27,028	36.9
SK Telecom	SK Telecom Co., Ltd.	Korea (Rep.)	Telecom services	1984	Ending 31.12	15,780	5.3
SoftBank	SoftBank Group Corp.	Japan	Telecom services	1981	Beginning 01.04	52,711	58.8
Sonatel	Groupe Sonatel	Senegal	Telecom services	1985	Ending 31.12	2,095	3.2
Sony	Sony Corporation	Japan	Hardware	1946	Beginning 01.04	84,284	109.7
SpaceX†	Space Exploration Technologies Corp.	USA	Hardware	2002			
Spark	Spark New Zealand Limited	New Zealand	Telecom services	1987	Ending 30.06	2,349	5.2
Spotify	Spotify Technology S.A.	Sweden	IT services	2006	Ending 31.12	9,001	5.6
stc	Saudi Telecom Company	Saudi Arabia	Telecom services	1998	Ending 31.12	15,721	13.7
Swisscom	Swisscom Ltd	Switzerland	Telecom services	1997	Ending 31.12	11,823	19.1
Tata Communications	Tata Communications Limited	India	Telecom services	1986	Beginning 01.04	2,308	12.2
Tele2	Tele2 AB	Sweden	Telecom services	1993	Ending 31.12	2,883	4.5
Telecom Egypt	Telecom Egypt Company SAE	Egypt	Telecom services	1998	Ending 30.06	2,025	48.2 §§
Telecom Italia	Telecom Italia S.P.A.	Italy	Telecom services	1994	Ending 31.12	18,052	52.3

Company	Corporate name	Headquarters	Industry	Year founded	Fiscal year	Revenue FY2020 (USD in millions)	Employees FY2020 (in thousands)
Telefónica	Telefónica, S.A.	Spain	Telecom services	1924	Ending 31.12	49,201	112.3
Telenor	Telenor ASA	Norway	Telecom services	1855	Ending 31.12	13,043	17.9
Telia	Telia Company AB	Sweden	Telecom services	1853	Ending 31.12	9,684	20.5
Telkom	Telkom SA SOC Ltd	South Africa	Telecom services	1991	Beginning 01.04	2,626	12.0
Telkom Indonesia	Telecommunications Indonesia	Indonesia	Telecom services	1991	Ending 31.12	9,357	25.3
Telstra	Telstra Corporation Limited	Australia	Telecom services	1975	Ending 30.06	18,004	29.8
Tencent	Tencent Holdings Limited	China	IT services	1998	Ending 31.12	69,857	51.4
Texas Instruments	Texas Instruments Incorporated	USA	Hardware	1930	Ending 31.12	14,461	30.0
TSMC	Taiwan Semiconductor Manufacturing Company Limited	Taiwan	Hardware	1987	Ending 31.12	45,271	56.8
Türk Telekom	Turk Telekomunikasyon AS	Turkey	Telecom services	1994	Ending 31.12	4,036	34.7
Twilio	Twilio Inc.	USA	IT services	2008	Ending 31.12	1,762	4.6
Twitter	Twitter, Inc.	USA	IT services	2006	Ending 31.12	3,716	5.5
Uber	Uber Technologies, Inc.	USA	IT services	2009	Ending 31.12	11,139	22.8
VEON	VEON Ltd.	Netherlands	Telecom services	1992	Ending 31.12	7,980	43.6
Verizon	Verizon Communications Inc	USA	Telecom services	2000	Ending 31.12	128,292	132.2
Viettel†††	Viettel Group	Vietnam	Telecom services	1989	Ending 31.12	6,383	39.8
Vodafone	Vodafone Group Plc	UK	Telecom services	1991	Beginning 01.04	56,165	105.0
Western Digital	Western Digital Corporation	USA	Hardware	1970	Ending on Friday nearest 30 June	16,736	63.8
Xiaomi	Xiaomi Corporation	China	Hardware	2010	Ending 31.12	35,629	22.1
Yandex	Yandex NV	Russia	IT services	2000	Ending 31.12	3,028	11.9
Yunji	Yunji Inc.	China	IT services	2015	Ending 31.12	801	1.0
Zain	Mobile Telecommunications Company K.S.C.P.	Kuwait	Telecom services	1983	Ending 31.12	5,313	7.0
Zoom	Zoom Video Communications, Inc.	USA	IT services	2011	Beginning 01.02	2,651	4.4
ZTE	ZTE Corporation	China	Hardware	1985	Ending 31.12	14,701	73.7
TOTAL						**4,710,545**	**10,692**

Note: †Privately-held. ††Fully state-owned. †††Employee owned. *Rebranded as Meta Platforms, Inc. in October 2021. **Altice Europe was delisted in January 2021. §2019. §§2018. §§§UAE only.

TABLE 4.2: DIGITAL INCLUSION BENCHMARK (DIB) 2021 RESULTS

Company	Score (0-100)	Access	Skills	Use	Inno-vation	DIB score (0-2)	Rank	A1	A2	A3	A4	S1	S2	S3	S4	U1	U2	U3	U4	I1	I2	I3	I4	Engaged *
Acer	43	0.71	0.47	1.00	1.22	0.85	45	0.00	1.00	0.60	1.25	1.25	0.00	0.00	0.63	1.00	2.00	0.50	0.50	1.50	0.75	2.00	0.63	Yes
Adobe	51	0.78	0.41	1.56	1.28	1.01	25	0.00	1.25	1.60	0.25	0.25	0.00	1.38	0.00	0.75	1.75	2.00	1.75	2.00	0.25	1.25	1.60	Yes
Airbnb	15	0.20	0.34	0.19	0.41	0.29	124	0.00	0.00	0.80	0.00	0.00	1.38	0.00	0.00	0.00	0.00	0.75	0.00	1.00	0.00	0.00	0.63	Yes
AIS	43	0.89	0.31	1.25	0.99	0.86	44	1.00	0.00	0.80	1.75	1.25	0.00	0.00	0.00	1.75	1.75	0.75	0.75	1.00	0.75	2.00	0.23	
Akamai	19	0.13	0.28	0.38	0.72	0.38	114	0.00	0.25	0.00	0.25	1.00	0.00	0.00	0.13	0.25	1.00	0.00	0.25	1.50	0.00	1.25	0.13	
Alibaba	16	0.00	0.13	0.41	0.72	0.32	123	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.25	1.40	0.00	0.00	1.50	0.25	0.50	0.63	
Alphabet	65	1.19	0.94	1.23	1.78	1.29	7	1.25	1.25	2.00	0.25	1.50	1.50	0.00	0.75	1.25	1.40	0.75	1.50	2.00	2.00	1.25	1.85	Yes
Altice	19	0.71	0.34	0.16	0.31	0.38	114	1.25	0.75	0.60	0.25	0.75	0.63	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.25	1.00	0.00	Yes
Amazon	42	0.35	0.72	1.04	1.22	0.83	50	0.00	0.75	0.40	0.25	1.25	0.00	1.00	0.63	0.25	1.40	0.75	1.75	2.00	1.00	1.75	0.13	Yes
AMD	24	0.13	0.28	0.38	1.09	0.47	92	0.00	0.25	0.00	0.25	1.13	0.00	0.00	0.00	1.00	0.50	0.00	0.00	1.50	0.50	1.75	0.63	Yes
América Móvil	54	1.05	1.06	1.19	0.99	1.07	20	1.25	1.00	1.20	0.75	1.50	1.50	0.00	1.25	0.75	1.25	1.50	1.25	0.50	0.75	2.00	0.73	Yes
Ant	20	0.61	0.25	0.06	0.63	0.39	113	0.00	1.25	1.20	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	1.50	0.00	1.00	0.00	Yes
Apple	66	0.99	1.28	1.48	1.51	1.32	4	0.75	1.50	1.20	0.50	1.50	0.00	1.63	2.00	1.00	1.40	2.00	1.50	2.00	2.00	1.25	0.78	Yes
Asus	34	0.49	0.44	0.88	0.91	0.68	68	1.50	0.00	0.20	0.25	1.75	0.00	0.00	0.00	0.50	1.75	1.00	0.25	1.50	0.25	1.75	0.13	
AT&T	53	0.91	0.88	1.23	1.22	1.06	22	1.00	1.00	1.40	0.25	1.00	0.00	0.75	1.75	0.75	1.15	1.00	2.00	2.00	1.00	1.25	0.63	Yes
Axiata	49	1.14	0.94	0.94	0.87	0.97	28	1.00	1.00	0.80	1.75	1.63	0.75	0.75	0.63	1.75	1.25	0.75	0.00	0.50	1.50	1.25	0.23	Yes
Baidu	54	0.65	1.06	1.31	1.31	1.08	18	0.00	0.75	1.60	0.25	1.00	0.50	1.25	1.50	2.00	1.75	1.00	0.50	2.00	0.25	1.50	1.50	Yes
BCE	42	0.95	0.38	1.23	0.78	0.84	47	1.00	0.00	1.80	1.00	0.50	0.00	0.00	1.00	2.00	0.65	0.75	1.50	1.00	0.50	1.50	0.13	Yes
Bharti Airtel	22	0.49	0.09	0.60	0.59	0.44	99	0.63	0.38	0.20	0.75	0.00	0.00	0.00	0.38	0.75	0.65	0.25	0.75	0.50	0.25	1.50	0.13	Yes
Booking Holdings	20	0.39	0.09	0.50	0.62	0.40	109	0.00	0.75	0.80	0.00	0.00	0.00	0.00	0.38	1.25	0.50	0.25	0.00	0.00	0.75	1.00	0.73	
Broadcom	19	0.39	0.31	0.41	0.41	0.38	114	0.00	0.50	0.80	0.25	0.63	0.00	0.50	0.13	0.50	0.65	0.50	0.00	0.50	0.50	0.50	0.13	
BT	49	1.06	0.81	0.79	1.23	0.97	28	0.75	0.50	2.00	1.00	0.88	1.75	0.00	0.63	0.25	0.65	1.00	1.25	2.00	0.00	2.00	0.90	Yes
ByteDance	18	0.49	0.00	0.81	0.13	0.36	120	0.00	0.38	1.60	0.00	0.00	0.00	0.00	0.00	0.50	0.75	0.00	2.00	0.50	0.00	0.00	0.00	
China Mobile	32	0.86	0.31	0.63	0.72	0.63	73	1.25	0.00	1.20	1.00	0.00	0.00	0.00	1.25	0.25	1.75	0.25	0.25	1.00	0.25	1.50	0.13	
China Satellite	2	0.00	0.00	0.00	0.13	0.03	145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	
China Telecom	13	0.60	0.00	0.10	0.28	0.25	129	1.50	0.00	0.40	0.50	0.00	0.00	0.00	0.00	0.00	0.15	0.25	0.00	0.50	0.00	0.50	0.13	
China Unicom	21	0.74	0.34	0.06	0.53	0.42	105	1.00	0.00	1.20	0.75	1.00	0.00	0.00	0.38	0.00	0.00	0.25	0.00	1.50	0.00	0.50	0.13	
Chunghwa Telecom	44	1.00	0.31	1.38	0.78	0.87	43	1.25	0.00	1.00	1.75	0.75	0.00	0.00	0.50	2.00	1.75	1.50	0.25	1.00	0.25	1.25	0.63	
Cisco	66	1.08	1.28	1.19	1.71	1.32	4	1.50	1.38	1.20	0.25	1.25	0.50	1.88	1.50	0.75	2.00	1.25	0.75	2.00	1.50	2.00	1.35	Yes
Citrix	23	0.33	0.13	0.81	0.56	0.46	96	0.00	0.25	0.80	0.25	0.00	0.00	0.00	0.50	1.75	1.25	0.25	0.00	0.50	0.00	1.00	0.75	
Cloudflare	13	0.13	0.00	0.44	0.44	0.25	129	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.25	1.00	0.50	0.50	0.75	0.00	

Company	Score (0-100)	Access	Skills	Use	Inno-vation	DIB score (0-2)	Rank	A1	A2	A3	A4	S1	S2	S3	S4	U1	U2	U3	U4	I1	I2	I3	I4	Engaged *
Cogent	1	0.00	0.00	0.00	0.03	0.01	149	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	
Comcast	42	1.05	0.75	0.41	1.09	0.83	50	2.00	0.75	1.20	0.25	1.00	0.00	1.00	1.00	0.50	0.15	0.25	0.75	2.00	1.50	0.75	0.13	Yes
Delivery Hero	10	0.11	0.00	0.34	0.31	0.19	136	0.00	0.00	0.20	0.25	0.00	0.00	0.00	0.00	0.00	1.10	0.25	0.00	0.50	0.25	0.50	0.00	
Dell	46	0.98	0.75	0.54	1.38	0.91	37	1.00	1.25	1.40	0.25	1.00	0.00	1.00	1.00	0.25	1.40	0.50	0.00	1.00	1.50	1.75	1.25	Yes
Deutsche Telekom	65	0.96	1.00	1.66	1.53	1.29	7	0.75	1.00	1.60	0.50	1.00	1.00	0.50	1.50	1.75	1.40	1.75	1.75	2.00	1.00	2.00	1.10	Yes
Digicel	7	0.10	0.19	0.13	0.13	0.14	139	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.75	0.25	0.00	0.25	0.00	0.50	0.00	0.00	0.00	
Digital Realty Trust	20	0.10	0.00	0.90	0.59	0.40	109	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	1.50	1.60	0.50	0.00	0.50	0.00	1.75	0.13	
eBay	21	0.43	0.00	0.34	0.87	0.41	107	0.00	0.00	1.20	0.50	0.00	0.00	0.00	0.00	0.25	0.60	0.50	0.00	1.00	0.25	1.50	0.73	Yes
EchoStar	5	0.00	0.00	0.28	0.13	0.10	142	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.60	0.00	0.25	0.50	0.00	0.00	0.00	Yes
Elisa	38	0.61	0.50	0.81	1.09	0.75	61	0.00	0.00	1.20	1.25	1.50	0.50	0.00	0.00	0.75	1.00	0.50	1.00	1.00	0.75	2.00	0.63	Yes
Equinix	30	0.38	0.75	0.48	0.78	0.60	77	0.00	1.25	0.00	0.25	1.75	1.25	0.00	0.00	0.25	1.15	0.50	0.00	1.00	0.25	1.75	0.13	Yes
Ericsson	49	0.41	1.06	0.91	1.50	0.97	28	0.00	1.38	0.00	0.25	1.00	1.63	0.00	1.63	1.00	1.90	0.50	0.25	1.50	1.00	2.00	1.50	Yes
Etisalat	22	0.10	0.28	0.75	0.62	0.44	99	0.00	0.00	0.40	0.00	0.00	1.00	0.00	0.13	0.75	1.25	0.25	0.75	0.50	1.25	0.50	0.23	
Eutelsat	24	0.71	0.44	0.38	0.34	0.47	92	1.00	1.00	0.60	0.25	0.75	0.00	0.00	1.00	0.25	1.00	0.25	0.00	0.50	0.00	0.75	0.13	Yes
Facebook	45	0.83	0.75	0.79	1.19	0.89	40	0.00	1.25	1.80	0.25	0.00	1.50	0.75	0.75	0.00	0.65	1.00	1.50	2.00	0.25	1.75	0.75	Yes
Foxconn	19	0.15	0.31	0.59	0.41	0.37	119	0.00	0.00	0.60	0.00	0.38	0.50	0.38	0.00	0.25	1.60	0.50	0.00	0.00	0.00	1.50	0.13	
GlobalFoundries	11	0.03	0.00	0.19	0.65	0.22	133	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.50	0.00	0.75	1.35	
Globe	43	0.31	1.00	1.31	0.78	0.85	45	1.00	0.00	0.00	0.25	1.50	1.25	0.00	1.25	0.75	2.00	1.25	1.25	0.50	1.00	1.50	0.13	Yes
Gojek	42	0.73	0.66	0.81	1.16	0.84	47	0.00	0.88	1.80	0.25	0.75	1.25	0.00	0.63	0.50	2.00	0.75	0.00	1.00	1.00	2.00	0.63	Yes
Grab	26	0.40	0.50	0.54	0.65	0.52	89	0.00	0.00	1.60	0.00	1.50	0.50	0.00	0.00	0.00	1.15	1.00	0.00	0.00	0.50	1.25	0.85	Yes
GTT	2	0.00	0.00	0.13	0.00	0.03	145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	
HCL	19	0.21	0.63	0.25	0.44	0.38	114	0.00	0.00	0.60	0.25	0.50	0.00	0.25	1.75	0.25	0.75	0.00	0.00	1.00	0.25	0.25	0.25	
HP	65	1.01	1.38	1.29	1.46	1.29	7	0.75	1.00	1.80	0.50	1.50	1.25	1.25	1.50	1.75	1.90	1.25	0.25	1.50	1.00	2.00	1.35	Yes
Huawei	46	0.90	0.84	0.91	1.03	0.92	34	0.75	1.25	1.60	0.00	1.75	0.00	1.25	0.38	1.75	1.40	0.25	0.25	2.00	0.25	1.50	0.35	Yes
IBM	46	0.63	0.63	0.85	1.56	0.92	34	0.00	1.25	1.00	0.25	0.00	0.75	1.75	0.00	0.50	1.40	1.00	0.50	2.00	0.25	2.00	2.00	
iFlytek	11	0.41	0.16	0.13	0.13	0.21	134	1.25	0.00	0.40	0.00	0.00	0.00	0.00	0.63	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.00	
Iliad	24	0.78	0.00	0.31	0.78	0.47	92	0.75	0.00	1.60	0.75	0.00	0.00	0.00	0.00	0.50	0.00	0.25	0.50	1.00	0.50	1.25	0.35	
Infosys	41	0.71	1.03	0.94	0.59	0.82	52	0.00	0.00	1.60	1.25	1.00	1.25	1.00	0.88	2.00	1.50	0.25	0.00	0.50	0.50	1.25	0.13	Yes
Inmarsat	22	0.53	0.00	0.69	0.53	0.44	99	0.00	0.00	0.60	1.50	0.00	0.00	0.00	0.00	1.25	1.00	0.50	0.00	0.50	0.25	1.25	0.13	
Intel	57	1.09	1.06	0.85	1.56	1.14	15	1.00	1.25	1.60	0.50	1.63	1.00	0.75	0.88	1.75	0.65	0.25	0.75	2.00	1.50	1.75	1.00	Yes
JD.com	20	0.23	0.41	0.25	0.72	0.40	109	0.00	0.00	0.40	0.50	0.75	0.00	0.00	0.88	0.25	0.50	0.25	0.00	1.00	0.25	1.50	0.13	
Jio	9	0.13	0.25	0.13	0.21	0.18	138	0.00	0.50	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.50	0.00	0.00	0.50	0.25	0.00	0.10	

Company	Score (0-100)	Access	Skills	Use	Inno-vation	DIB score (0-2)	Rank	A1	A2	A3	A4	S1	S2	S3	S4	U1	U2	U3	U4	I1	I2	I3	I4	Engaged *
Jumia	4	0.10	0.00	0.00	0.19	0.07	143	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	Yes
KDDI	47	0.84	0.78	0.94	1.21	0.94	33	1.00	0.00	1.60	0.75	1.63	0.00	0.00	1.50	0.25	1.75	0.25	1.50	1.00	1.00	2.00	0.85	Yes
KPN	39	0.37	0.38	1.16	1.16	0.77	59	0.13	0.00	0.60	0.75	0.50	0.00	0.00	1.00	0.75	1.65	1.00	1.25	1.50	1.00	2.00	0.13	Yes
KT	34	0.78	0.38	0.56	0.97	0.67	69	1.25	0.00	0.60	1.25	1.50	0.00	0.00	0.00	0.00	0.75	0.75	0.75	1.00	1.00	1.75	0.13	
Lenovo	34	0.62	0.28	0.60	1.19	0.67	69	0.63	0.00	1.60	0.25	0.00	0.00	0.00	1.13	0.50	1.15	0.50	0.25	1.00	0.25	2.00	1.50	
LG	37	1.08	0.41	0.38	1.09	0.74	62	1.25	0.00	1.80	1.25	1.25	0.00	0.00	0.38	0.00	1.25	0.25	0.00	2.00	0.50	1.75	0.13	
Liberty Global	32	0.74	0.38	0.66	0.72	0.63	73	1.25	0.00	1.20	0.50	0.88	0.00	0.00	0.63	0.00	1.15	0.25	1.25	0.50	1.00	1.25	0.13	
Logitech	30	0.43	0.19	0.71	1.06	0.60	77	0.25	0.25	1.20	0.00	0.75	0.00	0.00	0.00	1.50	1.10	0.25	0.00	1.00	0.25	1.75	1.25	Yes
Lumen	19	0.35	0.56	0.25	0.37	0.38	114	1.00	0.00	0.40	0.00	1.00	0.00	0.00	1.25	0.50	0.50	0.00	0.00	0.00	0.00	0.75	0.73	
MegaFon	11	0.36	0.00	0.06	0.41	0.21	134	0.38	0.00	0.80	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	1.00	0.00	0.50	0.13	
Meituan	20	0.23	0.56	0.35	0.47	0.40	109	0.00	0.00	0.40	0.50	0.75	1.50	0.00	0.00	0.25	1.15	0.00	0.00	0.50	0.50	0.75	0.13	
Mercado Libre	29	0.68	0.50	0.31	0.78	0.57	80	0.00	0.75	0.20	1.75	0.00	1.25	0.75	0.00	0.25	0.50	0.50	0.00	0.00	1.00	0.75	1.35	Yes
Microsoft	65	0.91	0.66	1.60	2.00	1.29	7	0.00	1.63	2.00	0.00	0.00	1.63	0.50	0.50	1.25	1.15	2.00	2.00	2.00	2.00	2.00	2.00	Yes
Millicom	45	0.76	0.88	1.25	0.68	0.89	40	0.13	1.50	0.40	1.00	0.50	1.75	0.00	1.25	1.75	1.00	0.50	1.75	1.00	0.25	1.25	0.23	Yes
MTN	46	0.71	0.88	1.23	0.87	0.92	34	0.75	0.00	0.60	1.50	1.25	1.25	0.00	1.00	1.00	0.15	2.00	1.75	1.00	0.75	1.50	0.23	Yes
MTS	31	0.73	0.28	0.48	0.93	0.61	75	1.38	0.00	0.80	0.75	0.75	0.00	0.00	0.38	0.00	1.15	0.25	0.50	1.00	1.00	1.50	0.23	
Naspers	45	0.33	0.81	1.00	1.44	0.90	39	0.00	0.00	0.80	0.50	1.00	0.00	1.75	0.50	1.75	1.00	1.25	0.00	1.00	2.00	1.75	1.00	Yes
NAVER	33	0.59	0.53	1.00	0.53	0.66	71	0.13	0.00	1.00	1.25	0.00	1.00	0.75	0.38	1.00	1.75	0.50	0.75	0.00	0.25	1.75	0.13	
NEC	50	0.71	0.50	1.25	1.54	1.00	27	0.00	0.25	1.60	1.00	1.75	0.00	0.00	0.25	2.00	1.75	0.25	1.00	1.50	0.75	2.00	1.90	Yes
NetEase	18	0.00	0.31	0.63	0.46	0.35	121	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.63	1.00	0.50	0.25	0.75	0.50	0.00	0.50	0.85	
Netflix	14	0.20	0.00	0.29	0.59	0.27	126	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.25	0.65	0.00	0.25	0.50	0.00	1.25	0.63	
Nintendo	24	0.39	0.13	0.88	0.53	0.48	90	0.38	0.13	0.80	0.25	0.50	0.00	0.00	0.00	1.75	0.00	0.25	1.50	0.50	0.00	0.75	0.85	Yes
Nokia	53	1.18	1.00	0.63	1.44	1.06	22	1.75	1.25	0.20	1.50	1.25	0.00	1.00	1.75	0.00	1.75	0.75	0.00	2.00	0.50	2.00	1.25	Yes
NTT	55	1.15	0.44	1.31	1.44	1.09	17	0.88	1.63	1.60	0.50	1.75	0.00	0.00	0.00	2.00	2.00	0.25	1.00	1.50	0.50	1.75	2.00	Yes
NVIDIA	27	0.30	0.31	0.50	1.04	0.54	83	0.00	0.75	0.20	0.25	1.25	0.00	0.00	0.00	0.50	1.25	0.25	0.00	1.00	0.50	1.75	0.90	Yes
Ola	1	0.00	0.00	0.00	0.06	0.02	148	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	
Omantel	13	0.25	0.25	0.06	0.47	0.26	128	0.50	0.00	0.00	0.50	0.63	0.00	0.00	0.38	0.25	0.00	0.00	0.00	1.00	0.25	0.50	0.13	
Ooredoo	27	0.66	0.25	0.69	0.53	0.53	87	1.00	0.50	0.40	0.75	1.00	0.00	0.00	0.00	1.00	1.50	0.25	0.00	0.50	0.50	1.00	0.13	
Oracle	40	0.55	0.81	0.66	1.13	0.79	55	0.00	0.75	1.20	0.25	0.75	0.00	1.75	0.75	1.00	1.15	0.25	0.25	2.00	0.25	1.50	0.75	Yes
Orange	80	1.63	1.53	1.35	1.84	1.59	2	1.00	1.50	2.00	2.00	1.75	1.25	1.88	1.25	2.00	1.15	0.50	1.75	2.00	1.50	2.00	1.85	Yes
OTE	39	0.53	0.63	1.31	0.66	0.78	58	1.00	0.00	0.60	0.50	1.00	0.50	0.00	1.00	0.50	1.50	1.75	1.50	1.00	0.25	1.25	0.13	
Palantir	10	0.25	0.00	0.38	0.13	0.19	136	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.50	0.50	0.00	0.00	0.00	

Company	Score (0-100)	Access	Skills	Use	Inno-vation	DIB score (0-2)	Rank	A1	A2	A3	A4	S1	S2	S3	S4	U1	U2	U3	U4	I1	I2	I3	I4	Engaged *
Paypal	54	0.83	0.84	0.91	1.75	1.08	18	0.38	1.50	1.20	0.25	1.25	1.63	0.00	0.50	1.50	1.15	0.25	0.75	1.50	2.00	2.00	1.50	Yes
PCCW	23	0.78	0.31	0.38	0.34	0.45	97	1.00	0.00	1.60	0.50	0.38	0.00	0.00	0.88	0.50	0.50	0.25	0.25	0.00	0.75	0.50	0.13	
Pinduoduo	12	0.00	0.31	0.13	0.47	0.23	131	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.50	0.00	0.00	0.50	0.25	1.00	0.13	
PLDT	60	0.70	1.56	1.35	1.19	1.20	12	0.00	1.25	0.80	0.75	1.75	1.50	1.25	1.75	0.75	1.65	1.25	1.75	1.00	1.00	2.00	0.78	Yes
Proximus	46	0.61	1.19	0.85	0.97	0.91	37	0.75	0.00	1.20	0.50	1.50	1.50	1.75	0.00	0.25	1.65	0.50	1.00	1.50	0.25	2.00	0.13	Yes
Qualcomm	53	0.79	1.03	1.00	1.40	1.06	22	1.00	1.50	0.40	0.25	1.50	1.00	0.00	1.63	1.75	1.25	1.00	0.00	2.00	1.00	1.75	0.85	Yes
Rakuten	29	0.51	0.22	0.60	0.94	0.57	80	0.00	0.38	1.40	0.25	0.75	0.00	0.00	0.13	0.75	1.15	0.25	0.25	1.50	0.50	1.00	0.75	Yes
Rogers	28	1.09	0.06	0.63	0.43	0.55	82	1.50	0.25	0.60	2.00	0.25	0.00	0.00	0.00	1.25	0.00	0.50	0.75	0.50	0.00	1.00	0.23	
Safaricom	48	1.09	0.72	1.23	0.81	0.96	31	0.75	1.25	1.60	0.75	1.00	1.13	0.00	0.75	1.50	1.15	1.00	1.25	0.50	0.25	1.75	0.73	Yes
Salesforce	40	0.78	0.00	0.73	1.63	0.79	55	0.25	1.00	1.60	0.25	0.00	0.00	0.00	0.00	1.50	1.15	0.25	0.00	1.50	1.50	1.75	1.75	
Samsung	66	1.25	1.41	1.04	1.56	1.32	4	0.00	1.50	2.00	1.50	1.25	1.25	1.63	1.50	1.50	0.65	0.50	1.50	2.00	1.00	1.50	1.75	Yes
SAP	37	0.54	0.72	0.54	1.15	0.74	62	0.00	0.88	0.80	0.50	1.13	1.00	0.00	0.75	0.50	1.40	0.25	0.00	1.00	1.50	1.25	0.85	Yes
Seagate	12	0.06	0.00	0.31	0.56	0.23	131	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.75	0.25	0.00	0.50	0.00	0.50	1.25	
ServiceNow	32	0.29	0.72	0.88	0.68	0.64	72	0.00	0.50	0.40	0.25	0.00	1.38	1.25	0.25	1.75	0.75	1.00	0.00	0.00	0.75	1.25	0.73	
SES	18	0.41	0.00	0.44	0.53	0.35	121	1.50	0.13	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.50	0.00	0.00	1.00	0.00	0.50	0.63	Yes
Sina	0	0.00	0.00	0.00	0.00	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Singtel	54	1.35	0.53	1.19	1.19	1.07	20	1.50	0.75	1.40	1.75	1.50	0.00	0.00	0.63	1.75	1.75	0.25	1.00	1.00	1.00	2.00	0.75	Yes
SK hynix	27	0.56	0.44	0.34	0.81	0.54	83	0.25	0.00	1.00	1.00	1.50	0.00	0.00	0.25	0.25	1.10	0.00	0.00	0.00	0.50	1.50	1.25	
SK Telecom	48	1.13	0.75	0.46	1.47	0.95	32	1.25	0.50	1.00	1.75	1.00	0.75	0.00	1.25	0.25	1.10	0.50	0.00	2.00	1.50	1.75	0.63	
SoftBank	40	0.55	0.50	1.04	1.12	0.80	54	0.75	0.00	1.20	0.25	0.75	0.00	0.00	1.25	1.75	1.40	0.00	1.00	0.50	1.75	1.50	0.73	Yes
Sonatel	37	0.90	1.09	0.31	0.62	0.73	64	0.25	1.00	0.60	1.75	1.00	1.00	1.13	1.25	0.00	1.00	0.25	0.00	0.50	0.75	0.50	0.73	
SONY	37	0.69	0.13	0.73	1.38	0.73	64	0.00	0.50	2.00	0.25	0.50	0.00	0.00	0.00	1.75	0.65	0.25	0.25	1.50	1.00	1.75	1.25	Yes
SpaceX	2	0.00	0.00	0.00	0.13	0.03	145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	
Spark	51	0.79	0.97	1.48	0.78	1.01	25	1.25	0.75	0.40	0.75	1.50	0.38	0.75	1.25	0.75	1.65	2.00	1.50	0.50	1.25	1.00	0.38	Yes
Spotify	27	0.46	0.34	0.44	0.90	0.54	83	0.00	1.00	0.60	0.25	0.00	1.38	0.00	0.00	1.00	0.50	0.00	0.25	2.00	0.00	0.75	0.85	
stc	22	0.42	0.03	0.48	0.84	0.44	99	0.38	0.00	0.80	0.50	0.00	0.00	0.00	0.13	0.25	0.65	0.25	0.75	1.00	1.00	1.25	0.13	Yes
Swisscom	31	0.69	0.31	0.66	0.78	0.61	75	0.00	0.38	1.40	1.00	1.25	0.00	0.00	0.00	0.00	1.40	0.25	1.00	1.00	0.50	1.50	0.13	
Tata Communications	42	0.94	1.16	0.59	0.66	0.84	47	0.00	1.88	0.40	1.50	0.00	1.88	1.25	1.50	0.25	1.60	0.50	0.00	1.00	0.00	1.50	0.13	
Tele2	37	0.73	0.25	1.04	0.91	0.73	64	1.00	1.00	0.40	0.50	0.00	0.00	1.00	0.00	0.25	1.65	0.25	2.00	0.50	1.00	2.00	0.13	Yes
Telecom Egypt	6	0.10	0.13	0.00	0.19	0.11	141	0.00	0.00	0.40	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.25	0.00	
Telecom Italia	41	0.83	0.25	1.15	1.03	0.82	52	0.75	0.00	0.80	1.75	1.00	0.00	0.00	0.00	0.75	1.60	0.75	1.50	1.50	1.00	1.50	0.13	
Telefónica	90	1.54	1.72	2.00	1.88	1.79	1	1.50	1.63	1.80	1.25	1.50	1.75	1.63	2.00	2.00	2.00	2.00	2.00	1.50	2.00	2.00	2.00	Yes

Company	Score (0-100)	Access	Skills	Use	Inno-vation	DIB score (0-2)	Rank	A1	A2	A3	A4	S1	S2	S3	S4	U1	U2	U3	U4	I1	I2	I3	I4	Engaged *
Telenor	56	1.14	0.63	1.56	1.09	1.11	16	1.75	1.00	0.80	1.00	0.75	1.00	0.00	0.75	1.25	2.00	1.25	1.75	1.50	0.50	1.75	0.63	Yes
Telia	64	1.08	0.91	1.66	1.44	1.27	11	0.75	1.63	1.20	0.75	1.75	1.00	0.13	0.75	1.00	1.65	2.00	2.00	2.00	0.50	2.00	1.28	Yes
Telkom	24	0.36	0.19	0.38	0.93	0.47	92	0.25	0.00	0.20	1.00	0.00	0.00	0.00	0.75	0.50	0.75	0.25	0.00	1.00	1.50	1.00	0.23	
Telkom Indonesia	21	0.54	0.56	0.13	0.41	0.41	107	1.00	0.00	0.40	0.75	1.00	1.25	0.00	0.00	0.00	0.50	0.00	0.00	0.50	1.00	0.00	0.13	
Telstra	69	1.35	1.25	1.16	1.75	1.38	3	1.50	1.50	1.40	1.00	1.88	0.00	1.63	1.50	0.25	1.90	0.50	2.00	1.50	1.50	2.00	2.00	Yes
Tencent	27	0.26	0.19	0.98	0.72	0.54	83	0.00	0.00	0.80	0.25	0.00	0.00	0.75	0.00	1.25	1.15	0.25	1.25	2.00	0.25	0.50	0.13	Yes
Texas Instruments	22	0.39	0.06	0.23	1.03	0.43	103	0.00	0.50	0.80	0.25	0.00	0.00	0.00	0.25	0.25	0.65	0.00	0.00	1.50	0.50	0.75	1.35	
TSMC	27	0.37	0.22	0.50	1.03	0.53	87	0.00	0.38	0.60	0.50	0.38	0.00	0.00	0.50	1.50	0.50	0.00	0.00	0.50	0.50	1.75	1.35	
Türk Telekom	35	0.61	0.88	0.54	0.78	0.70	67	0.00	1.25	1.20	0.00	0.00	1.25	1.00	1.25	0.75	1.15	0.00	0.25	1.00	0.50	1.25	0.35	
Twilio	15	0.19	0.06	0.63	0.28	0.29	124	0.00	0.50	0.00	0.25	0.00	0.00	0.25	0.00	0.75	1.00	0.75	0.00	0.50	0.50	0.00	0.13	Yes
Twitter	23	0.00	0.03	0.75	1.03	0.45	97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.50	0.00	1.00	1.50	2.00	0.75	0.75	0.63	
Uber	21	0.30	0.00	0.40	0.99	0.42	105	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.25	1.10	0.25	0.00	1.50	0.00	1.75	0.73	
VEON	38	0.72	0.91	0.63	0.78	0.76	60	0.63	1.00	1.00	0.25	1.25	1.38	0.00	1.00	0.25	1.00	0.75	0.50	0.50	1.50	1.00	0.13	Yes
Verizon	60	0.95	0.97	1.29	1.56	1.19	13	0.75	1.25	1.80	0.00	1.25	1.00	0.00	1.63	1.75	1.15	0.75	1.50	2.00	1.50	2.00	0.75	Yes
Viettel	2	0.00	0.00	0.04	0.13	0.04	144	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.50	0.00	0.00	0.00	
Vodafone	58	0.97	0.63	1.66	1.34	1.15	14	0.38	1.50	1.00	1.00	1.00	0.00	0.00	1.50	2.00	1.90	0.75	2.00	1.50	0.75	2.00	1.13	Yes
Western Digital	14	0.00	0.00	0.13	0.94	0.27	126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	1.00	1.00	0.50	1.25	
Xiaomi	30	0.67	0.25	1.04	0.44	0.60	77	0.38	0.00	1.80	0.50	0.38	0.00	0.00	0.63	1.50	1.40	1.00	0.25	0.50	0.00	1.00	0.25	
Yandex	40	0.78	0.91	0.69	0.78	0.79	55	0.75	0.00	1.60	0.75	1.25	0.00	1.25	1.13	0.50	1.00	0.75	0.50	1.00	0.00	1.50	0.63	
Yunji	7	0.13	0.00	0.38	0.00	0.13	140	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	Yes
Zain	45	1.41	0.66	0.78	0.72	0.89	40	1.50	1.25	1.40	1.50	1.25	1.00	0.00	0.38	1.00	0.60	0.25	1.25	0.50	1.00	1.25	0.13	
Zoom	24	0.49	0.31	0.69	0.41	0.48	90	0.75	0.00	1.20	0.00	0.00	0.63	0.00	0.63	0.75	0.50	0.50	1.00	1.00	0.00	0.00	0.63	Yes
ZTE	22	0.13	0.00	0.85	0.72	0.43	103	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.75	1.15	0.50	0.00	1.50	0.00	1.25	0.13	

Note: See Table 1-1 for indicator names. *Company engaged with the benchmark by reviewing data and participating in company calls.

TABLE 4.3: CORE SOCIAL INDICATOR (CSI) RESULTS

Company	CSI score (0-20)	Respect human rights score (0/10)	Provide & promote decent work score (0/6)	Act ethically score (0/4)	CSI 1	CSI 2	CSI 3	CSI 4	CSI 5	CSI 6	CSI 7	CSI 8	CSI 9	CSI 10	CSI 11	CSI 12	CSI 13	CSI 14	CSI 15	CSI 16	CSI 17	CSI 18	Rank
Acer	13	8.5	2.0	2.5	1	0	0.5	2	2	1	1	1	1	0	0	0	0.5	0.5	0.5	0.5	1	0.5	7
Adobe	7	3.5	1.5	2.0	1	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	53
Airbnb	4	2.0	1.5	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0	104
AIS	10	6.0	1.5	2.5	1	0	1	2	2	0	0	0	0.5	0	0	0.5	0.5	0	0.5	0.5	1	0.5	25
Akamai	7.5	4.0	1.5	2.0	1	1	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	45
Alibaba	4.5	2.0	1.0	1.5	0	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0	0.5	0.5	0.5	0	94
Alphabet	5	3.0	1.5	0.5	1	0	1	0	0	0	1	0	0.5	0	0	0	0.5	0.5	0	0	0.5	0	88
Altice	2	0.0	1.0	1.0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0.5	0.5	0	0.5	0	124
Amazon	9.5	7.5	1.5	0.5	1	0.5	1	2	0	1	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0	30
AMD	9.5	6.0	2.5	1.0	1	1	0.5	0	1	0.5	1	1	0.5	0	0	0.5	1	0.5	0.5	0	0.5	0	30
América Móvil	7.5	3.5	2.0	2.0	1	0.5	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	45
Ant	3	2.0	0.5	0.5	0	0	0	0	0	0	1	1	0	0	0	0	0	0.5	0	0	0.5	0	116
Apple	12	7.5	2.5	2.0	1	1	0.5	0	2	1	1	1	0.5	0	0.5	0.5	0.5	0.5	1	0	0.5	0.5	13
Asus	4	2.0	1.0	1.0	1	0.5	0.5	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0.5	0.5	0	104
AT&T	4.5	1.5	2.0	1.0	1	0.5	0	0	0	0	0	0	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0.5	94
Axiata	6	2.5	1.5	2.0	0	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	1	0.5	71
Baidu	6.5	3.5	1.5	1.5	1	0	0	0	0	0.5	1	1	0.5	0	0	0.5	0.5	0	0.5	0	1	0	60
BCE	6.5	3.0	2.5	1.0	1	0	0	0	0	0	1	1	0.5	0	0.5	0.5	0.5	0.5	0	0.5	0.5	0	60
Bharti Airtel	11	7.0	2.0	2.0	1	0.5	1	0	2	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0.5	1	0.5	0	19
Booking Holdings	7	4.5	1.5	1.0	1	0.5	0.5	0	0	0.5	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0	53
Broadcom	9	6.0	1.5	1.5	1	0.5	0.5	2	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	35
BT	10	6.0	2.0	2.0	1	0.5	0	0	2	0.5	1	1	0.5	0	0.5	0	0.5	0.5	0.5	0.5	0.5	0.5	25
ByteDance	2.5	1.0	0.5	1.0	0	1	0	0	0	0	0	0	0.5	0	0	0	0	0	0.5	0	0.5	0	120
China Mobile	1	0.0	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	137
China Satellite	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
China Telecom	2	0.0	1.0	1.0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0.5	0	0.5	0	124
China Unicom	2.5	1.0	1.0	0.5	0	0	0	0	0	0	1	0	0	0	0	0.5	0.5	0	0	0	0.5	0	120
Chunghwa Telecom	11.5	8.0	2.0	1.5	1	0.5	1	2	2	0.5	1	0	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0	17
Cisco	12	9.0	1.5	1.5	1	1	1	2	2	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0	13
Citrix	5	2.0	1.5	1.5	0	0	0	0	0	0	1	1	0.5	0.5	0	0	0.5	0	0.5	0.5	0.5	0	88

Company	CSI score (0-20)	Respect human rights score (0/10)	Provide & promote decent work score (0/6)	Act ethically score (0/4)	CSI 1	CSI 2	CSI 3	CSI 4	CSI 5	CSI 6	CSI 7	CSI 8	CSI 9	CSI 10	CSI 11	CSI 12	CSI 13	CSI 14	CSI 15	CSI 16	CSI 17	CSI 18	Rank
Cloudflare	2.5	0.0	2.0	0.5	0	0	0	0	0	0	0	0	0.5	0.5	0	0	0.5	0.5	0	0	0.5	0	120
Cogent	2	0.5	1.0	0.5	0	0.5	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0	0.5	0	124
Comcast	6	3.0	1.5	1.5	1	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	71
Delivery Hero	6.5	3.5	2.0	1.0	1	0.5	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0	0.5	0	60
Dell	7	3.5	2.0	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0.5	0	0.5	0.5	0	0.5	0.5	0.5	53
Deutsche Telekom	14	8.0	3.0	3.0	1	1	0	2	2	0	1	1	0.5	0	0.5	1	0.5	0.5	1	0.5	1	0.5	5
Digicel	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Digital Realty Trust	5	2.0	1.5	1.5	1	1	0	0	0	0	0	0	0.5	0	0	0.5	0.5	0	0	0.5	0.5	0.5	88
eBay	6.5	3.0	1.5	2.0	0	0.5	0	0	0	0.5	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	60
EchoStar	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Elisa	5.5	2.0	2.0	1.5	1	0.5	0	0	0	0.5	0	0	0.5	0	0	0.5	0.5	0.5	1	0	0.5	0	81
Equinix	6.5	3.5	1.5	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0.5	0.5	0.5	60
Ericsson	15	9.5	3.0	2.5	1	1	1	2	2	0.5	1	1	0.5	0	0.5	0.5	1	0.5	1	0	1	0.5	2
Etisalat	3	0.0	1.5	1.5	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0.5	0.5	0	1	0	116
Eutelsat	4.5	1.5	1.5	1.5	1	0.5	0	0	0	0	0	0	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	94
Facebook	9.5	6.0	1.5	2.0	1	1	0.5	2	0	0.5	1	0	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	30
Foxconn	3.5	2.0	0.5	1.0	1	1	0	0	0	0	0	0	0.5	0	0	0	0	0	0.5	0	0.5	0	112
GlobalFoundries	7	3.0	2.5	1.5	1	0	0	0	0	0	1	1	0.5	0	0.5	0.5	0.5	0.5	0.5	0	1	0	53
Globe	5	2.0	2.0	1.0	0	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0.5	0.5	0	88
Gojek	2	0.0	1.0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	0.5	0	0.5	0	124
Grab	4	2.0	1.0	1.0	0	0	0	0	0	0	1	1	0.5	0	0	0	0	0.5	0.5	0	0.5	0	104
GTT	1.5	1.0	0.0	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.5	0	133
HCL	4	1.0	1.5	1.5	0	0	0	0	0	0	1	0	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	104
HP	15.5	9.5	3.0	3.0	1	1	1	2	2	0.5	1	1	1	0	0.5	0.5	0.5	0.5	1	0.5	1	0.5	1
Huawei	3.5	1.0	1.5	1.0	1	0	0	0	0	0	0	0	0.5	0	0.5	0	0.5	0	0	0	0.5	0.5	112
IBM	4.5	1.0	1.5	2.0	1	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	94
iFlytek	0.5	0.0	0.0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	143
Iliad	4.5	3.0	1.0	0.5	1	1	0	0	0	0	1	0	0.5	0	0	0	0	0.5	0	0	0.5	0	94
Infosys	8.5	4.0	2.0	2.5	1	0.5	0	0	0	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0.5	1	0.5	41
Inmarsat	5.5	2.0	1.5	2.0	1	1	0	0	0	0	0	0	0.5	0	0	0	0.5	0.5	0	0.5	1	0.5	81
Intel	9.5	6.5	1.5	1.5	1	0	1	0	2	0.5	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	30
JD.com	1.5	0.0	1.0	0.5	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0	0.5	0	133

Company	CSI score (0-20)	Respect human rights score (0/10)	Provide & promote decent work score (0/6)	Act ethically score (0/4)	CSI 1	CSI 2	CSI 3	CSI 4	CSI 5	CSI 6	CSI 7	CSI 8	CSI 9	CSI 10	CSI 11	CSI 12	CSI 13	CSI 14	CSI 15	CSI 16	CSI 17	CSI 18	Rank
Jio	4	2.0	1.0	1.0	1	0	0	0	0	0	1	0	0.5	0	0	0	0	0.5	0.5	0	0.5	0	104
Jumia	2	0.5	1.5	0.0	0	0.5	0	0	0	0	0	0	0.5	0	0	0.5	0	0.5	0	0	0	0	124
KDDI	13	9.0	2.5	1.5	1	1	1	2	2	0	1	1	0.5	0.5	0	0.5	0.5	0.5	0.5	0.5	0.5	0	7
KPN	7	3.5	2.0	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0.5	0.5	0.5	53
KT	12	9.0	1.5	1.5	1	0.5	1	2	2	0.5	1	1	0.5	0	0	0.5	0.5	0	0	0.5	0.5	0.5	13
Lenovo	6.5	3.0	2.0	1.5	1	0	0	0	0	0	1	1	0.5	0	0.5	0	0.5	0.5	0.5	0	0.5	0.5	60
LG	5.5	3.5	1.0	1.0	1	0.5	0	0	0	0	1	1	0.5	0	0	0.5	0	0	0	0.5	0.5	0	81
Liberty Global	7.5	4.0	1.5	2.0	1	0.5	0.5	0	0	0	1	1	0.5	0	0	0.5	0.5	0	0.5	0.5	0.5	0.5	45
Logitech	6.5	3.0	2.0	1.5	1	0	0	0	0	0	1	1	0.5	0	0	0	1	0.5	0.5	0.5	0.5	0	60
Lumen	7.5	4.0	2.0	1.5	1	1	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0	0.5	0.5	45
MegaFon	3.5	2.0	0.5	1.0	0	0	0	0	0	0	1	1	0	0	0	0	0.5	0	0	0	0.5	0.5	112
Meituan	1	0.0	0.5	0.5	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0.5	0	137
Mercado Libre	6	3.0	2.0	1.0	1	0	0	0	0	0	1	1	0.5	0	0	0.5	1	0	0	0	1	0	71
Microsoft	13	10.0	1.5	1.5	1	1	1	2	2	1	1	1	0.5	0	0	0	0.5	0.5	0	0	1	0.5	7
Millicom	9	6.5	1.5	1.0	1	0	1	2	0	0.5	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0.5	35
MTN	10	5.5	1.5	3.0	1	0	0.5	0	2	0	1	1	0.5	0	0	0	0.5	0.5	1	1	0.5	0.5	25
MTS	6	3.5	1.0	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0	0	0	1	0.5	71
Naspers	7	4.0	1.5	1.5	1	1	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0	53
NAVER	6	4.0	0.5	1.5	1	0.5	0	0	0	0.5	1	1	0	0	0	0	0.5	0	0.5	0.5	0.5	0	71
NEC	11.5	8.0	1.5	2.0	1	1	1	2	2	1	0	0	0.5	0	0	0	0.5	0.5	0.5	0.5	1	0	17
NetEase	2	1.0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0.5	0	0	0	0.5	0	124
Netflix	2	1.0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0.5	0	0	0	0.5	0	124
Nintendo	2.5	2.0	0.5	0.0	1	1	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	120
Nokia	9	4.5	2.0	2.5	1	1	0.5	0	0	0	1	1	0.5	0	0.5	0	0.5	0.5	0.5	0.5	1	0.5	35
NTT	10.5	6.5	2.5	1.5	1	1	0.5	2	2	0	0	0	0.5	0	0	1	0.5	0.5	0.5	0.5	0.5	0	22
NVIDIA	6	3.0	1.5	1.5	1	0	0	0	0	0	1	1	0.5	0.5	0	0	0.5	0	0.5	0	0.5	0.5	71
Ola	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Omantel	1	0.0	1.0	0.0	0	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0	0	0	137
Ooredoo	4	2.0	1.5	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0	104
Oracle	7	4.0	1.5	1.5	1	1	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	1	0	53
Orange	11	6.5	2.0	2.5	0	1	1	2	0	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0.5	1	0.5	0.5	19
OTE	6.5	3.5	2.0	1.0	1	0.5	0	0	0	0	1	1	1	0	0	0.5	0.5	0	0.5	0	0.5	0	60

Company	CSI score (0-20)	Respect human rights score (0/10)	Provide & promote decent work score (0/6)	Act ethically score (0/4)	CSI 1	CSI 2	CSI 3	CSI 4	CSI 5	CSI 6	CSI 7	CSI 8	CSI 9	CSI 10	CSI 11	CSI 12	CSI 13	CSI 14	CSI 15	CSI 16	CSI 17	CSI 18	Rank
Palantir	1	0.0	0.0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0.5	0	137
Paypal	9	6.0	1.5	1.5	1	0	1	2	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0.5	0.5	0.5	35
PCCW	5.5	3.0	1.0	1.5	1	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0	0.5	0.5	0.5	0	81
Pinduoduo	1.5	0.0	0.5	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0.5	0	133
PLDT	2	0.0	1.0	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	0	0.5	0.5	0	124
Proximus	6	2.0	2.5	1.5	1	1	0	0	0	0	0	0	0.5	0	0.5	0.5	0.5	0.5	0.5	0	0.5	0.5	71
Qualcomm	7.5	4.0	1.5	2.0	1	0.5	0.5	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	1	0.5	45
Rakuten	10.5	7.5	1.0	2.0	1	1	1	2	2	0.5	0	0	0.5	0	0	0	0.5	0	1	0.5	0.5	0	22
Rogers	4.5	2.0	2.0	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0	94
Safaricom	4	2.0	1.5	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0	104
Salesforce	6.5	3.0	2.0	1.5	1	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0	60
Samsung	13	7.5	3.0	2.5	1	1	1	0	2	0.5	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	7
SAP	7.5	4.0	1.5	2.0	1	0.5	0.5	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0.5	1	0.5	45
Seagate	8	4.0	2.0	2.0	1	0.5	0	0	0	0.5	1	1	0.5	0	0	0	1	0.5	0.5	0	1	0.5	42
ServiceNow	6.5	3.5	1.5	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0	60
SES	4.5	2.5	1.0	1.0	0	0.5	0	0	0	0	1	1	0	0	0	0	0.5	0.5	0.5	0	0.5	0	94
Sina	1	0.0	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0	137
Singtel	5.5	2.5	2.0	1.0	0	0.5	0	0	0	0	1	1	1	0	0	0	0.5	0.5	0	0.5	0.5	0	81
SK hynix	12.5	8.5	1.5	2.5	1	0.5	1	2	2	0	1	1	0.5	0	0	0.5	0.5	0	1	0.5	0.5	0.5	11
SK Telecom	13.5	9.5	2.0	2.0	1	1	1	2	2	0.5	1	1	0.5	0	0.5	0.5	0.5	0	0.5	0.5	0.5	0.5	6
SoftBank	8	4.0	1.5	2.5	1	1	0	0	0	0	1	1	0.5	0.5	0	0	0.5	0	0.5	0.5	1	0.5	42
Sonatel	1.5	0.0	0.5	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0.5	0	133
SONY	8	5.0	1.5	1.5	1	0	1	2	0	0	1	0	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0	42
SpaceX	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Spark	4.5	2.0	2.0	0.5	1	0	0	0	0	0	1	0	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0	94
Spotify	4.5	2.0	2.0	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0	94
stc	3	0.0	2.0	1.0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0.5	0.5	0.5	0	0.5	0	116
Swisscom	6	3.5	1.0	1.5	1	0	0.5	0	0	0	1	1	0.5	0	0	0	0	0.5	0	0	1	0.5	71
Tata Communications	9	5.0	2.0	2.0	1	0.5	1	0	0	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	35
Tele2	7.5	4.0	2.0	1.5	1	1	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0	1	0.5	45
Telecom Egypt	1	0.0	1.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	0	0	0	0	137
Telecom Italia	11	6.5	1.5	3.0	1	1	0.5	2	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	1	1	0.5	19

Company	CSI score (0-20)	Respect human rights score (0/10)	Provide & promote decent work score (0/6)	Act ethically score (0/4)	CSI 1	CSI 2	CSI 3	CSI 4	CSI 5	CSI 6	CSI 7	CSI 8	CSI 9	CSI 10	CSI 11	CSI 12	CSI 13	CSI 14	CSI 15	CSI 16	CSI 17	CSI 18	Rank
Telefónica	14.5	9.5	2.5	2.5	1	1	1	2	2	0.5	1	1	0.5	0	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	3
Telenor	10.5	7.0	1.5	2.0	1	1	1	0	2	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	22
Telia	14.5	9.0	3.0	2.5	1	1	0.5	2	2	0.5	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	3
Telkom	4	2.5	0.5	1.0	1	0.5	0	0	0	0	1	0	0	0	0	0	0.5	0	0.5	0	0.5	0	104
Telkom Indonesia	3	1.0	1.0	1.0	1	0	0	0	0	0	0	0	0.5	0	0	0	0.5	0	0	0	0.5	0.5	116
Telstra	10	6.5	2.0	1.5	1	0.5	0.5	0	2	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0	25
Tencent	2	1.0	0.5	0.5	0	0	0	0	0	0	1	0	0	0	0	0	0.5	0	0	0	0.5	0	124
Texas Instruments	7.5	3.0	2.0	2.5	1	0	0	0	0	0	1	1	1	0	0	0	0.5	0.5	0.5	0.5	1	0.5	45
TSMC	9.5	5.0	3.0	1.5	1	0	0	0	2	0	1	1	0.5	0.5	0	1	0.5	0.5	0	0.5	1	0	30
Türk Telekom	5.5	2.5	1.5	1.5	1	1	0	0	0	0.5	0	0	0.5	0	0	0.5	0	0.5	0.5	0	0.5	0.5	81
Twilio	5.5	3.0	1.5	1.0	1	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0	81
Twitter	4.5	2.5	1.5	0.5	0	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0	0	0.5	0	94
Uber	6.5	3.5	1.5	1.5	1	0.5	0	0	0	0	1	1	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	60
VEON	6	3.0	2.0	1.0	1	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0.5	71
Verizon	12	9.0	2.0	1.0	1	0.5	1	2	2	0.5	1	1	0.5	0	0	0.5	0.5	0.5	0	0	0.5	0.5	13
Viettel	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Vodafone	9	3.5	2.5	3.0	1	0.5	0	0	0	0	1	1	0.5	0.5	0	0.5	0.5	0.5	0.5	1	1	0.5	35
Western Digital	12.5	8.5	2.5	1.5	1	0.5	1	2	2	0	1	1	1	0	0	0	1	0.5	0.5	0	1	0	11
Xiaomi	3.5	2.0	1.0	0.5	0	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0	0	0	0.5	0	112
Yandex	5	3.0	1.5	0.5	1	0	0	0	0	0	1	1	0.5	0	0	0.5	0.5	0	0	0	0.5	0	88
Yunji	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
Zain	10	7.0	1.5	1.5	1	1	0.5	2	2	0.5	0	0	0.5	0	0	0	0.5	0.5	0.5	0	0.5	0.5	25
Zoom	5	3.0	1.0	1.0	1	0	0	0	0	0	1	1	0.5	0	0	0.5	0	0	0.5	0	0.5	0	88
ZTE	6	3.0	1.0	2.0	1	0	0	0	0	0	1	1	0.5	0	0	0	0.5	0	0.5	0	1	0.5	71

TABLE 4.4: GENDER INDICATORS

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Acer	14	2.9	37		26		Technical staff
Adobe	36	7.5	34		26	25	Technical occupations in computing and information technology that require deep technical specialisation and knowledge, as well as managers, directors, and executives who oversee technical employees and the development and delivery of technical products. Reference: AnitaB.org
Airbnb	33	1.2	47		28	25	Technical includes employees in engineering, data science (analytics) and information technology teams, not including Executive Assistants and Team Coordinators.
AIS	9	5.6	40				
Akamai	33	2.2	26				
Alibaba	18						
Alphabet	27	44.0	33		25	24	Tech roles
Altice	13						
Amazon	40	579.8	45				
AMD	25	3.0	24		19	19	Engineering
América Móvil	8	74.4	39		16		Women in engineering, IT and operating positions. Figures exclude information from Europe.
Ant	25						
Apple	38	50.0	34		24	24	All technical roles across the company, such as engineering roles and Apple Store Geniuses.
Asus	0	5.7	39				
AT&T	25	77.9	34				
Axiata	22	3.9	31				
Baidu	0	13.2	42		33	33	Technical/engineering roles
BCE	33	17.2	34				
Bharti Airtel	20	1.3	9	India only			
Booking Holdings	33	10.2	50		22		Tech roles
Broadcom	33	4.2	21			17	
BT	38	20.5	25	UK only			
ByteDance							
China Mobile	0	242.2	53				
China Satellite							
China Telecom	20	90.3	32				
China Unicom	13	95.3	39				

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Chunghwa Telecom	8	9.5	29		22		R&D institute
Cisco	36	20.9	27		17	17	Technical workforce
Citrix	18	2.3	26				
Cloudflare	43						
Cogent	29	0.3	25				
Comcast	30	58.8	35	U.S. only, 2019			
Delivery Hero	33						
Dell	29	50.2	32		21	20	Tech roles
Deutsche Telekom	45	80.3	36				
Digicel	29						
Digital Realty Trust	27	0.7	25				
eBay	38	5.1	40		24	24	Tech roles
EchoStar	13						
Elisa	38	1.5	33				
Equinix	33	2.2	24				
Ericsson	27	25.2	25				
Etisalat	8	0.9	22	UAE only			
Eutelsat	45	0.3	31				
Facebook	40	21.7	37		25	24	Positions that require specialisation and knowledge needed to accomplish mathematical, engineering, or scientific related duties
Foxconn	11	358.8	37				
GlobalFoundries	10	3.7	25		22		Engineering roles
Globe	9	3.8	46				
GoJek	17	1.8	34		36		Engineering data and product groups
Grab	33	2.7	41				
GTT	8						
HCL	25	46.0	27				
HP	45	19.6	37		22	22	IT and engineering
Huawei	18	39.8	20				
IBM	17	117.0	34		28		Includes distinguished engineers, designers, IBM Fellows, etc.
iFlytek							
Iliad	36	4.3	29				
Infosys	22	100.3	39				

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Inmarsat	0	0.5	30				
Intel	30	31.0	28		25	25	Based on internal job codes and reflects technical job requirements
JD.com	20	72.1	23				
Jio	14						
Jumia	29	1.4	35				
KDDI	5	2.6	23	Excluding subsidiaries			
KPN	38	2.3	21				
KT	9	4.0	18				
Lenovo	10	25.8	36		26	27	Global Technical
LG	14	15.2	20				
Liberty Global	11	7.1	32				
Logitech	33	2.3	36		19		STEM-related positions
Lumen	25				19		[Global Technical]
MegaFon	0	19.4	54				
Meituan	0						
Mercado Libre	13	6.1	39		17	40	Technical staff
Microsoft	45	49.2	30		24	21	Engineering, research, hardware engineering, hardware manufacturing engineering, evangelism, IT operations or services
Millicom	33	8.1	38				
MTN	33	7.3	38				
MTS	22	27.5	43				
Naspers	35	12.2	43				
NAVER	14	1.5	36				
NEC	9	30.1	26		12		STEM-related positions
NetEase	17	10.6	37				
Netflix	25	4.4	47		35	35	Tech roles
Nintendo	11	1.3	28	Japan & main subsidiaries			
Nokia	38	19.8	22				
NTT	23	62.7	19		15	12	NTT Labs
Nvidia	23	3.6	19		14	14	Tech roles
Ola							
Omantel	0	0.5	22	Oman only			
Ooredoo	0	4.2	28				

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Oracle	29	40.0	30			24	
Orange	40	51.2	36		20	22	Technical/engineering fields
OTE	22	4.9	40				
Palantir	29						
PayPal	36	11.4	43		27	28	Tech roles
PCCW	13	9.0	40	Excl. PCPD employees			
Pinduoduo	0	2.6	33				
PLDT	23	6.3	36		13	21	Technical/engineering fields
Proximus	36	3.3	31				
Qualcomm	29	9.1	22		17	16	Tech roles
Rakuten	8	3.6	40				
Rogers	36	9.0	38				
Safaricom	36	2.2	50		25	24	Technology
Salesforce	27	19.1	34		24	24	
Samsung	18	99.9	37		18	18	Product development
SAP	44	34.4	34			24	
Seagate	18	24.4	59		19		Technical
ServiceNow	30	3.8	29		23		Technical
SES	45	0.5	24		14		Technology
Sina	30						
Singtel	27	6.8	34				
SK hynix	11	10.3	36	Korea (Rep.)	16		Korea, STEM-related positions
SK Telecom	13	1.0	19		19		STEM knowledge for their work
SoftBank	11	8.8	32	Softbank + major subsidiaries	14		Softbank + major subsidiaries, STEM
Sonatel	0	1.7	38		43		Senegal; Senior Technicians & middle managers
Sony	33	38.9	35				
SpaceX							
Spark	43	1.8	35				
Spotify	36	2.9	44			27	
STC	18	0.7	5	Saudi Arabia only			
Swisscom	33	3.3	22	Switzerland			

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Tata Communications	25	3.7	19				
Tele2	57	2.0	44				
Telecom Egypt	8						
Telecom Italia	38	19.7	38			22	
Telefónica	26	42.7	38		21		
Telenor	40	6.8	38				
Telia	45	7.7	37		20		
Telkom	15	3.7	31				
Telkom Indonesia	11	7.6	30				
Telstra	42	8.1	28		18	18	Defined by the Australian Workforce Gender Equality Agency
Tencent	13	14.7	29				
Texas Instruments	36	11.4	38		18		Tech roles
TSMC	10	18.9	39		77	78	Production line technicians
Türk Telekom	0	13.6	39				
Twilio	33	1.8	39				
Twitter	20	2.5	45		27	24	Tech roles
Uber	36	9.6	42		23	22	Excludes executives and senior management and includes all other employees on the technical job ladder
Veon	17	19.2	44				
Verizon	33	44.6	34				
Viettel	0						
Vodafone	42	41.9	40		23	21	Engineering
Western Digital	44	38.2	58		20	20	Technical staff
Xiaomi	0	7.5	34				
Yandex	10	5.7	36		22		Technical and related roles, such as developers, testers, data analysts, designers, and product and project managers
Yunji	20						
Zain	0	1.6	23				
Zoom	20						
ZTE	22	17.3	23				
Average (w)	**24**	**3,524**	**35**				
Average (u)	**23**		**33**		**23 (24*)**	**24 (25*)**	

Company	% of women in the highest governance body, 2020 (CSI 14c)	Women employees (I41a)			Women in technical roles (I41b)		
		Women total (0in thousands), 2020	Women as % of total employees	Note	2020	2019	Note
Median	**25**		**33**		**22 (24*)**	**24 (24*)**	

Note: (w) = weighted. (u) = unweighted. *Among those benchmarked both years.

TABLE 4.5: GEOGRAPHIC INDICATORS

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
Acer	Taiwan	High income	East Asia & Pacific	42	32	38
Adobe	USA	High income	North America	52	26	19
Airbnb	USA	High income	North America	56	14	21
AIS	Thailand	Upper middle income	East Asia & Pacific	100	1	100
Akamai	USA	High income	North America	42	29	24
Alibaba	China	Upper middle income	East Asia & Pacific		19	32
Alphabet	USA	High income	North America	68	53	34
Altice	Netherlands	High income	Europe & Central Asia		5	20
Amazon	USA	High income	North America	71	39	23
AMD	USA	High income	North America	55	24	42
América Móvil	Mexico	Upper middle income	Latin America & Caribbean	48	25	68
Ant	China	Upper middle income	East Asia & Pacific		15	13
Apple	USA	High income	North America	65	32	22
ASUS	Taiwan	High income	East Asia & Pacific	47	28	39
AT&T	USA	High income	North America	69	57	35
Axiata	Malaysia	Upper middle income	East Asia & Pacific	19	11	100
Baidu	China	Upper middle income	East Asia & Pacific	99	9	56
BCE	Canada	High income	North America	100	2	0
Bharti Airtel	India	Lower middle income	South Asia	79	18	83
Booking Holdings	USA	High income	North America	17	5	20
Broadcom	USA	High income	North America	49	26	19
BT	United Kingdom	High income	Europe & Central Asia	81	84	42
ByteDance	China	Upper middle income	East Asia & Pacific		27	52
China Mobile	China	Upper middle income	East Asia & Pacific	99	27	56
China Satellite	China	Upper middle income	East Asia & Pacific		1	100

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
China Telecom	China	Upper middle income	East Asia & Pacific		10	20
China Unicom	China	Upper middle income	East Asia & Pacific	99.6	28	54
Chunghwa Telecom	Taiwan	High income	East Asia & Pacific	99	1	0
Cisco	USA	High income	North America	50	103	49
Citrix	USA	High income	North America	46	42	33
Cloudflare	USA	High income	North America	63	10	10
Cogent	USA	High income	North America	82	10	0
Comcast	USA	High income	North America	75	12	33
Delivery Hero	Germany	High income	Europe & Central Asia	6	51	51
Dell	USA	High income	North America	36	68	41
Deutsche Telekom	Germany	High income	Europe & Central Asia	39	45	29
Digicel	Jamaica	Upper middle income	Latin America & Caribbean		26	54
Digital Realty Trust	USA	High income	North America	46	25	12
eBay	USA	High income	North America	47	28	29
EchoStar	USA	High income	North America	75	9	44
Elisa	Finland	High income	Europe & Central Asia	77	8	13
Equinix	USA	High income	North America		29	28
Ericsson	Sweden	High income	Europe & Central Asia	13	114	55
Etisalat	UAE	High income	Middle East & North Africa		16	88
Eutelsat	France	High income	Europe & Central Asia	55	13	31
Facebook	USA	High income	North America	78	37	32
Foxconn	Taiwan	High income	East Asia & Pacific	0.4	11	45
GlobalFoundries	USA	High income	North America	44	11	27
Globe	Philippines	Lower middle income	East Asia & Pacific	100	1	100
Gojek	Indonesia	Lower middle income	East Asia & Pacific		5	80
Grab	Singapore	High income	East Asia & Pacific		13	69

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
GTT	USA	High income	North America		18	17
HCL	India	Lower middle income	South Asia		43	30
HP	USA	High income	North America	32	58	36
Huawei	China	Upper middle income	East Asia & Pacific		32	38
IBM	USA	High income	North America		65	38
iFlytek	China	Upper middle income	East Asia & Pacific		1	100
Iliad	France	High income	Europe & Central Asia	62	4	25
Infosys	India	Lower middle income	South Asia	84	41	27
Inmarsat	United Kingdom	High income	Europe & Central Asia	53	20	15
Intel	USA	High income	North America	47	47	38
JD.com	China	Upper middle income	East Asia & Pacific		3	33
Jio	India	Lower middle income	South Asia		1	100
Jumia	Nigeria	Lower middle income	Sub-Saharan Africa		13	77
KDDI	Japan	High income	East Asia & Pacific	90	28	50
KPN	Netherlands	High income	Europe & Central Asia	100	2	0
KT	Korea (Rep.)	High income	East Asia & Pacific		15	73
Lenovo	Hong Kong	High income	East Asia & Pacific	69	48	33
LG	Korea (Rep.)	High income	East Asia & Pacific	52	53	47
Liberty Global	United Kingdom	High income	Europe & Central Asia	50	8	0
Logitech	Switzerland	High income	Europe & Central Asia		25	36
Lumen	USA	High income	North America	82	35	37
MegaFon	Russian Federation	Upper middle income	Europe & Central Asia		2	100
Meituan	China	Upper middle income	East Asia & Pacific	100	1	100
Mercado Libre	Argentina	Upper middle income	Latin America & Caribbean	45	8	75
Microsoft	USA	High income	North America	59	95	46
Millicom	Luxembourg	High income	Europe & Central Asia		13	69

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
MTN	South Africa	Upper middle income	Sub-Saharan Africa	31	21	100
MTS	Russian Federation	Upper middle income	Europe & Central Asia	93	6	83
Naspers	South Africa	Upper middle income	Sub-Saharan Africa		19	37
NAVER	Korea (Rep.)	High income	East Asia & Pacific	55	12	33
NEC	Japan	High income	East Asia & Pacific	66	53	55
NetEase	China	Upper middle income	East Asia & Pacific		1	100
Netflix	USA	High income	North America	81	20	35
Nintendo	Japan	High income	East Asia & Pacific	38	11	27
Nokia	Finland	High income	Europe & Central Asia	7	70	43
NTT	Japan	High income	East Asia & Pacific		41	37
NVIDIA	USA	High income	North America	41	30	23
Ola	India	Lower middle income	South Asia		4	25
Omantel	Oman	High income	Middle East & North Africa	100	3	0
Ooredoo	Qatar	High income	Middle East & North Africa	8	12	67
Oracle	USA	High income	North America	34	69	41
Orange	France	High income	Europe & Central Asia	57	27	67
OTE	Greece	High income	Europe & Central Asia	92	2	0
Palantir	USA	High income	North America	63	14	7
PayPal	USA	High income	North America	46	27	26
PCCW	Hong Kong	High income	East Asia & Pacific	64	14	29
Pinduoduo	China	Upper middle income	East Asia & Pacific		2	50
PLDT	Philippines	Lower middle income	East Asia & Pacific	100	1	100
Proximus	Belgium	High income	Europe & Central Asia	84	3	0
Qualcomm	USA	High income	North America	37	28	29
Rakuten	Japan	High income	East Asia & Pacific	76	9	11
Rogers	Canada	High income	North America	100	1	0

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
Safaricom	Kenya	Lower middle income	Sub-Saharan Africa	100	1	100
Salesforce	USA	High income	North America	58	27	22
Samsung	Korea (Rep.)	High income	East Asia & Pacific	40	46	57
SAP	Germany	High income	Europe & Central Asia		82	40
Seagate	Ireland	High income	Europe & Central Asia		20	35
ServiceNow	USA	High income	North America	54	28	14
SES	Luxembourg	High income	Europe & Central Asia		24	46
Sina	China	Upper middle income	East Asia & Pacific		4	25
Singtel	Singapore	High income	East Asia & Pacific	54	12	33
SK hynix	Korea (Rep.)	High income	East Asia & Pacific	79	17	29
SK Telecom	Korea (Rep.)	High income	East Asia & Pacific	99	5	40
SoftBank	Japan	High income	East Asia & Pacific	97	22	32
Sonatel	Senegal	Lower middle income	Sub-Saharan Africa	58	6	100
Sony	Japan	High income	East Asia & Pacific	50	29	28
SpaceX	USA	High income	North America		1	0
Spark	New Zealand	High income	East Asia & Pacific	100	1	0
Spotify	Sweden	High income	Europe & Central Asia	30	26	27
stc	Saudi Arabia	High income	Middle East & North Africa		3	0
Swisscom	Switzerland	High income	Europe & Central Asia	84	13	0
Tata Communications	India	Lower middle income	South Asia	91	15	27
Tele2	Sweden	High income	Europe & Central Asia	65	4	0
Telecom Egypt	Egypt	Lower middle income	Middle East & North Africa		1	100
Telecom Italia	Italy	High income	Europe & Central Asia	82	30	40
Telefonica	Spain	High income	Europe & Central Asia	25	33	33
Telenor	Norway	High income	Europe & Central Asia	18	13	46
Telia	Sweden	High income	Europe & Central Asia	37	21	5

Company	Headquarters	Income group	Region	Employees in headquarter country (as % of total employees), 2020	Number of countries where company has physical presence	Company presence in low- & middle-income nations (as % of total worldwide presence of company)
Telkom	South Africa	Upper middle income	Sub-Saharan Africa	100	1	100
Telkom Indonesia	Indonesia	Lower middle income	East Asia & Pacific	99	10	40
Telstra	Australia	High income	East Asia & Pacific	82	21	33
Tencent	China	Upper middle income	East Asia & Pacific	99	23	39
Texas Instruments	USA	High income	North America		31	26
TSMC	Taiwan	High income	East Asia & Pacific	90	8	25
Türk Telekom	Turkey	Upper middle income	Europe & Central Asia	100	15	40
Twilio	USA	High income	North America	70	17	18
Twitter	USA	High income	North America		22	27
Uber	USA	High income	North America	37	40	38
VEON	Netherlands	High income	Europe & Central Asia	0.4	14	79
Verizon	USA	High income	North America	89	22	14
Viettel	Vietnam	Lower middle income	East Asia & Pacific		11	100
Vodafone	UK	High income	Europe & Central Asia	15	24	46
Western Digital	USA	High income	North America	13	34	32
Xiaomi	China	Upper middle income	East Asia & Pacific	92	21	43
Yandex	Russian Federation	Upper middle income	Europe & Central Asia	97	22	59
Yunji	China	Upper middle income	East Asia & Pacific	100	2	50
Zain	Kuwait	High income	Middle East & North Africa	24	7	57
Zoom	USA	High income	North America	60	25	20
ZTE	China	Upper middle income	East Asia & Pacific	90	102	69
TOTAL				**58**	**3470**	**40**

TABLE 4.6: DATA BREACHES

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Acer	Yes	Yes		"In 2020, we received no evidence of infringement of customer privacy or of loss of customer information."	0
Adobe	Yes	Yes		"In FY20, we had zero data security breaches that required disclosure in our public SEC filings."	0
Airbnb					
AIS	Yes	Yes		"Leaks, thefts, or losses of customer data [0]"	0
Akamai					
Alibaba					
Alphabet					
Altice					
Amazon					
AMD	Yes	No		[GRI reference does not contain the data]	
América Móvil	Yes	Yes		"During 2020, we did not have information security incidents that resulted in sanctions in any of our operations. However, there was an incident of email identity theft in AMCO and another incident of ransomware in Claro Chile."	2
Ant					
Apple	Yes	No		[Links to privacy website but no information on data breaches found]	
Asus	Yes	Yes		"No complaint regarding breach of customer privacy or [loss of] data"	0
AT&T	Yes	No	Yes	"AT&T works hard to safeguard the privacy of customer and employee information. Despite our best efforts, there are occasions when unauthorized parties attempt to gain access to this information. The details associated with any such events are confidential."	
Axiata	Yes	Yes		None reported	0
Baidu	Yes	Yes		[company reports None]	0
BCE					
Bharti Airtel					
Booking Holdings					
Broadcom					
BT	Yes	No		"We report qualifying incidents to the relevant regulators (eg, the Information Commissioner's Office (ICO) in the UK) and impacted individuals, where we are legally required to do so and within the timeframes mandated. To the extent that the relevant regulators ever find fault with our data breach	

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
				management and/or data security practices, they publish their findings/sanctions – typically in their annual reports and on their websites."	
ByteDance					
China Mobile	Yes	Yes		"In 2020, no major customer information leakage occurred."	0
China Satellite					
China Telecom					
China Unicom	Yes	No		[GRI reference does not contain the data]	
Chunghwa Telecom	Yes	Yes		None	0
Cisco	Yes	Yes		"Cisco did not experience any personal data incidents that required reporting to global data protection authorities during fiscal 2020. In addition, there were no personal data protection incidents causing exposure to high risk or material harm during this period."	0
Citrix					
Cloudflare					
Cogent	Yes	No	Yes	"Except as required by law, Cogent does not disclose this information as it is proprietary and confidential."	
Comcast	Yes	No	Yes	"Except as required by law, the Company does not publicly disclose the details associated with such events."	
Delivery Hero	Yes	Yes		"Currently, there are no verified substantial complaints for 2020."	0
Dell	Yes	No		"Confidentiality constraints. Dell treats this data as confidential company information."	
Deutsche Telekom	Yes	No		[GRI reference does not contain the data]	
Digicel					
Digital Realty Trust	Yes	Yes		"In 2020, we had no substantiated complaints concerning breaches of customer privacy or losses of customer data."	0
eBay	Yes	Yes		None during the reporting period	0
EchoStar					
Elisa	Yes	No		"Elisa does not disclose data breaches."	
Equinix	Yes	No		[GRI reference does not contain the data]	
Ericsson					
Etisalat	Yes	Yes		"In 2020, the number of attempted cyber-attacks decreased by 77% compared to the previous year, while actual number of cyber-attacks and data breaches remained at zero over the past three years."	0
Eutelsat		Yes		"We didn't have any data breaches."	

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Facebook					
Foxconn		Yes		"No major incidents that impacted corporate operations or infringed upon client privacy occurred in 2020."	0
GlobalFoundries	No				
Globe	Yes	Yes		[The company reports 'None' for 'Number of breaches (from a customer safety and data security perspective)' but also mentions: "There were 23 complaints received in 2020 involving erroneous sending of communications to incorrect recipients." Further, there was one instance of "data security breach and percentage involving customers' personally identifiable information in 2021]."	1
Gojek	Yes	Yes		"As a result of our continuous efforts to set up a strong Information Security Management System, there has been no incident of breaches (identified leaks, thefts or losses) of user data and no substantiated complaints concerning breaches of user privacy during the reporting period."	0
Grab	Yes	Yes		"In 2020, we received official resolutions on three incidents of data breaches that took place between 2018 to 2020. Two incidents happened in Singapore in 2018 and 2019 and have been reported publicly. The third incident took place in the Philippines in 2020 and we have since reviewed our privacy practices and sought to work with the National Privacy Commission of the Philippines (NPC) to address its concerns."	1
GTT					
HCL					
HP	Yes	Yes		Privacy-related complaints, breaches, and requests	28
Huawei	Yes	No		[GRI reference does not contain the data]	
IBM	Yes	No		[GRI reference does not contain the data]	
iFlytek					
Iliad					
Infosys	Yes	Yes		"In fiscal [year] 2021, there were 43 incidents involving customer data and none of them had any substantial material impact. There were no substantiated complaints received concerning breaches of customer privacy from outside parties and regulatory authorities."	43
Inmarsat	Yes	No		[Although GRI 418-1 reference indicates it is full reported, no evidence was found]	
Intel	Yes			[GRI reference does not contain the data]	
JD.com					
Jio					
Jumia					

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
KDDI	Yes	Yes		"Data security incidents: 0 [...] Data breaches, complaints, etc., that are illegal or subject to regulatory guidance"	0
KPN	Yes	Yes		"In 2020, we received 224 reported incidents concerning privacy. We reported two data leaks to the Dutch Data Protection Authority, both of which had a limited impact on customers. We recorded no complaints about significant privacy breaches."	2
KT	Yes	No		[GRI reference does not contain the data]	
Lenovo	Yes	No		[GRI reference does not contain the data]	
LG	Yes	Yes		Substantiated Complaints Concerning Breaches of Customer Privacy and Losses of Customer Data (Korea)	0
Liberty Global	Yes	No		[GRI reference does not contain the data]	
Logitech	Yes	Yes		"We gather data on product security breaches and incidents on a regular basis and we have not experienced any breaches, incidents, fines, or accrued liability in the past three years."	0
Lumen					
MegaFon	Yes				
Meituan					
Mercado Libre	Yes	Yes		"During the reporting period, we have identified 20 security incidents that involved personal data of users."	20
Microsoft					
Millicom	Yes	No	Yes	"This is confidential information that Millicom generally does not disclose unless required by law."	
MTN	Yes	No		[Disclosure not found in the GRI reference]	
MTS	Yes	No		[Report number of appeals received and processed but not data breaches]	
Naspers	Yes	Yes		"5 incidents reported to group compliance 2 substantiated incidents (requiring remediation) 1 unsubstantiated incidents 2 cases ongoing"	5
NAVER	Yes	Yes		[mentions leakages of user information]	0
NEC	Yes	Yes		"As a result of these efforts, in fiscal [year] 2020 there were no incidents involving the loss, outflow or leak, etc., of personal information."	0
NetEase	Yes	No		To be disclosed	
Netflix					
Nintendo					
Nokia	Yes	Yes		"There were no substantiated complaints regarding breaches of customer data in 2020."	0
NTT	Yes	Yes		[chart; no leaks]	0

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Nvidia	Yes	Yes		"There were no substantiated complaints in FY21 that fell into this category."	0
Ola					
Omantel					
Ooredoo		Yes		[Lists the number of substantiated complaints concerning breaches of customer privacy and losses of customer data per country]	2
Oracle	Yes	No		[Disclosure not found in the GRI reference]	
Orange					
OTE	Yes	Yes		"In 2020, OTE and COSMOTE reported 49 incidents to the DPA and the ADAE, by adhering to GDPR and L.3471/2011 for the protection of personal data and privacy in the electronic telecommunications sctor"	49
Palantir					
PayPal		No			
PCCW					
Pinduoduo					
PLDT	Yes	Yes		"In 2020, nine (9) customer complaints were classified as identified leaks, thefts, or losses of customer data"	9
Proximus	Yes	Yes		"In 2020, Proximus reported 4 personal data incidents to the Belgian Data Protection Authorities"	4
Qualcomm	Yes	Yes		"We did not receive any substantiated complaints regarding breaches of customer privacy or data in 2020 or in the three years prior."	0
Rakuten					
Rogers					
Safaricom					
Salesforce	Yes	No		[Disclosure not found in the GRI reference]	
Samsung	Yes	No		[Not disclosed]	
SAP		No	Yes	"We do not publicly report the total number of identified leaks, thefts, or losses of customer data. We consider this information as proprietary."	
Seagate	Yes	No		"Seagate tracks data related to this indicator, but does not disclose details due to the nature of the subject to protect our customers."	
ServiceNow	Yes	No		[Disclosure not found in the GRI reference]	
SES					
Sina					

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Singtel	Yes	Yes		"In FY2021, we recorded 21 privacy incidents in Singapore...In February 2021, we reported a data breach of information comprising personal information of about 130,000 customers (...) In Australia, we track customer privacy complaints that are referred to us from customers, employees, other individuals or regulatory bodies. In FY2021, there were 114 cases categorised as privacy incidents."	135
SK hynix		Yes		"Data breach: 0 cases, Breaches of Customer Privacy: 0 cases"	0
SK Telecom	Yes	Yes		Number of Data Breaches and DDoS attacks	0
SoftBank	Yes	No		[Disclosure not found in the GRI reference]	
Sonatel					
Sony	Yes	No		[Disclosure not found in the GRI reference]	
SpaceX					
Spark	Yes	Yes		"Since launching the tool in December, Spark people have reported 72 data breaches, the vast majority of which were not deemed likely to cause serious harm.	72
Spotify		Yes		"In 2020, our Data Protection Office identified three incidents which we deemed to be reportable personal data breaches under the low threshold of GDPR Article 33 and notified our lead regulator in Sweden accordingly"	3
STC	Yes	No		[Disclosure not found in the GRI reference]	
Swisscom	Yes	Yes		"Two incidents involved substantiated complaints from external parties regarding breaches of client data protection. One incident of data loss related to client data detected."	2
Tata Communications	Yes	Yes		"We have not received any substantiated complaints regarding breaches of customer privacy in the past year."	0
Tele2	Yes	Yes		"Reported substantiated complaints received during the year, concerning breaches of customer privacy, from outside parties and substantiated by Tele2 or from regulatory bodies, as well as reported identified leaks, thefts or losses of customer data discovered by Tele2	9
Telecom Egypt					
Telecom Italia	Yes	Yes		"No complaint concerned the violation of privacy or loss of data of our customers"	0
Telefónica	Yes	Yes		[number is 0 in 2020]	0
Telenor	Yes	Yes		"Telenor is not aware of any substantiated complaints regarding breaches of customer privacy and losses of customer data in 2020."	0
Telia	Yes	Yes		"In 2020, we confirmed 701 personal data breaches across our markets. Most cases related to human errors or technical errors which caused personal data to be disclosed or accessed in an unauthorized way, for example the customer data was accidentally sent to a wrong customer. In all reported cases, the Telia Company entities cooperated with national supervisory authorities to correct inaccuracies"	701

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Telkom					
Telkom Indonesia					
Telstra	Yes	Yes		"In FY20, we had five privacy incidents requiring notification to the Office of the Australian Information Commissioner (OAIC) and one incident which was notified to the UK, French, Dutch and German privacy regulators as required. In all cases, we directly contacted the impacted customers to discuss concerns they may have and offered solutions appropriate to their situation, such as updating customer accounts, covering costs of credit check subscriptions (for customers whose credit history may be at risk) or referral to third party identity and cyber support services."	6
Tencent					
Texas Instruments	Yes	No	Yes	"Although recorded for internal review and action, we currently do not publicly report privacy complaints or breach incidents (unless required by regulation), since we consider such information confidential."	
TSMC	Yes	No			
Türk Telekom					
Twilio					
Twitter	Yes	No		"For example, in July 2020, we became aware of what we believe to be a coordinated social engineering attack by people who successfully targeted one or more of our employees with access to internal systems and tools. The attackers used this access to target a small group of accounts (130) and to gain control of a subset of these accounts and send Tweets from those accounts and access non-public information relating to at least some of those accounts. This security breach may have harmed the people and accounts affected by it. It may also impact the market perception of the effectiveness of our security measures, and people may lose trust and confidence in us, decrease the use of our products and services or stop using our products and services in their entirety. It may also result in damage to our reputation, loss of accounts, loss of content or platform partners, loss of advertisers or advertising revenue, or legal and financial exposure, including legal claims, regulatory inquiries or other proceedings."	
Uber		Yes		"Number of material cybersecurity breaches: 0"	0
Veon		Yes		"Internally identified compromises that resulted in a breach and exfiltration of data"	47
Verizon	Yes	No	Yes	"Except as required by law, Verizon does not report this information."	
Viettel					

Company	Refers to GRI or SASB standards in relation to data breaches (U23a)	Discloses number of data breaches (U23b)	Considers data breaches confidential or proprietary	Text of the company disclosure	Number of data breaches
Vodafone	Yes	Yes		"The highest severity category corresponds to a significant data breach or loss of service caused by the incident. In the past financial year, the only such incident was the ho. Mobile incident discussed above."	1
Western Digital	Yes	No		[Disclosure not found in the GRI reference]	
Xiaomi					
Yandex	Yes	Yes		"In the period from 2018 to 2020, Yandex was not subject to any fines or other sanctions for breaching personal data legislation."	0
Yunji					
Zain	Yes	Yes		"In 2020, there were no cases concerning breaches of customer privacy, data leaks, theft or loss"	0
Zoom					
ZTE	Yes	No		[Disclosure not found in the GRI reference]	
TOTAL	**85**	**55**	**7**		**1,142**

TABLE 4.7: ECONOMIC VALUE DISTRIBUTED

			Economic value distribution (%), 2020					Community investments		
Company	**Refers to GRI 201-1**	**Discloses data**	**Operating costs**	**Employees**	**Providers of capital**	**Government**	**Community investments**	**Total in 2020 (USD in millions)**	**As % of net income**	**Remarks**
Acer	Yes	Yes	57%	35%	0.004%	7.4%	0.0002%	2	1.0	CSR projects
Adobe	Yes							87	1.7	Cash and in-kind
Airbnb										
AIS	Yes	Yes	53%	5%	12%	18%	0.01%	1	0.1	Community investments
Akamai								2	0.4	Akamai Foundation
Alibaba										
Alphabet								200	0.5	Grants to non-profits and social enterprises
Altice										
Amazon										
AMD	Yes							8	0.3	Social investment
América Móvil	Yes							20	0.8	Corporate citizenship & philanthropic contributions
Ant										
Apple	Yes							250	0.4	Community investments
ASUS	Yes							1	0.1	Social Investment
AT&T	Yes							289	*	Corporate and AT&T Foundation giving
Axiata	Yes									
Baidu										
BCE	Yes							31	1.5	Community investments
Bharti Airtel	Yes							1	*	CSR projects
Booking Holdings										
Broadcom	Yes							4	0.1	Broadcom Foundation
BT	Yes							23	1.2	Cash, time volunteered & in-kind contributions
ByteDance										
China Mobile	Yes							5	0.03	Donation by China Mobile Charity Foundation
China Satellite										
China Telecom										
China Unicom	Yes							1	0.1	Total donation
Chunghwa Telecom	Yes	Yes	20%	30%	22%	5%	0.7%	36	3.1	Social investment/donations
Cisco								458	4.1	Cash and in-kind contributions

			Economic value distribution (%), 2020					Community investments		
Company	**Refers to GRI 201-1**	**Discloses data**	**Operating costs**	**Employees**	**Providers of capital**	**Government**	**Community investments**	**Total in 2020 (USD in millions)**	**As % of net income**	**Remarks**
Citrix	Yes							8	1.5	Donations
Cloudflare										
Cogent										
Comcast								496	4.6	Cash/in-kind donations invested in communities
Delivery Hero	Yes									
Dell	Yes							50	1.4	Total contributions
Deutsche Telekom	Yes									
Digicel										
Digital Realty Trust	Yes									
eBay	Yes							3	0.1	Charitable donations
EchoStar										
Elisa	Yes	Yes	56%	20%	19%	4.3%				
Equinix	Yes							3	0.8	Corporate giving donations
Ericsson										
Etisalat	Yes									
Eutelsat										
Facebook										
Foxconn	Yes									
GlobalFoundries	Yes									
Globe										
Gojek										
Grab										
GTT										
HCL								26	1.7	Contribution to CSR activities
HP	Yes							35	1.2	Social investments
Huawei	Yes									
IBM								395	7.1	Contributions
iFlytek										
Iliad								0.3	0.1	Free Foundation
Infosys	Yes	Yes	19%	54%	9%	17.0%	0.43%	59	2.2	Community investments
Inmarsat	Yes	Yes	65%	19%	14%	2.2%	0.03%	1	*	Community investments
Intel	Yes							80	0.4	Intel Foundation

			Economic value distribution (%), 2020					Community investments		
Company	**Refers to GRI 201-1**	**Discloses data**	**Operating costs**	**Employees**	**Providers of capital**	**Government**	**Community investments**	**Total in 2020 (USD in millions)**	**As % of net income**	**Remarks**
JD.com	Yes							29	0.4	Charity cash donations
Jio										
Jumia										
KDDI	Yes							9	0.1	Social contribution
KPN	Yes									
KT	Yes	Yes	71%	20%	3%	2.7%	0.10%	18	2.8	Donation
Lenovo								2	1.1	Social Investment
LG	Yes	Yes	85%	14%	1%	0.1%	0.03%	8	0.5	Donations
Liberty Global								15	*	Community investments
Logitech	Yes									
Lumen										
MegaFon	Yes							6	1.6	Charity expenses
Meituan										
Mercado Libre	Yes	Yes	72%	15%	2%	9.6%	0.04%	2	§	Community investments
Microsoft								1,900	4.3	Donated or discounted products and services
Millicom	Yes							10	§	Total cash contributions + In-kind giving
MTN	Yes	Yes	57%	6%	10%	16.9%	0.08%	10	0.9	Corporate social investment
MTS								13	1.5	Charitable & social projects
Naspers								5	0.1	Community investments
NAVER	Yes	Yes	52%	30%	2%	14.1%	1.5%	45	6.2	Including public service platform
NEC	Yes							3	0.2	Social contribution
NetEase										
Netflix										
Nintendo										
Nokia	Yes	Yes	62%	33%	1%	1.3%	0.03%	7	*	Community investments
NTT	Yes							160	1.9	Expenditure on social contribution activities
NVIDIA	Yes							5	0.1	Philanthropic giving
Ola										
Omantel										
Ooredoo								11	2.8	Contribution to sport and social fund
Oracle								19	0.1	Donations through grants and sponsorships
Orange		Yes	51%	23%	8%	10%	0.05%	22	0.4	Orange Foundation

			Economic value distribution (%), 2020					Community investments		
Company	**Refers to GRI 201-1**	**Discloses data**	**Operating costs**	**Employees**	**Providers of capital**	**Government**	**Community investments**	**Total in 2020 (USD in millions)**	**As % of net income**	**Remarks**
OTE	Yes							6	1.4	Social contribution
Palantir										
PayPal	Yes							30	0.7	Funds contributed to non-profits
PCCW								3	3.8	Monetary donations, in-kind sponsorships
Pinduoduo										
PLDT	Yes							10	2.0	Community investments
Proximus										
Qualcomm								21	0.4	Charitable Giving Contributions
Rakuten										
Rogers	Yes	Yes	48%	14%	15%	9%	0.09%	8	0.7	Community investments
Safaricom								5	0.7	Donations to Safaricom Foundation
Salesforce	Yes							70	1.7	Donations to charitable organisations
Samsung	Yes	Yes	67%	12%	8%	4.4%	0.20%	424	1.9	Social contributions
SAP								27	0.5	Donations
Seagate										
ServiceNow	Yes							4	3.2	Corporate grants
SES										
Sina										
Singtel	Yes	Yes	58%	15%	13%	1.2%	0.1%	13	3.2	Direct financial support, in-kind charitable sponsorship and staff volunteering hours
SK hynix								62	1.5	Social contribution expenditures
SK Telecom	Yes	Yes	36%	11%	25%	2.7%	0.1%	23	1.8	Cash, time volunteered & in-kind contributions
SoftBank	Yes							71	0.2	Community investments
Sonatel		Yes	38%	18%	0%	43.8%	0.4%	0.003	0.001	Foundation contributions
Sony								19	0.2	Community engagement expenditures
SpaceX										
Spark								1	0.5	Donation to Spark Foundation & other donations
Spotify										
stc	Yes							3	0.1	Community initiatives
Swisscom	Yes	Yes	33%	33%	15%	4%				
Tata Communications	Yes	Yes	74%	19%	3%	3.1%	0.1%	2	0.9	Community investments
Tele2	Yes									

			Economic value distribution (%), 2020					Community investments		
Company	**Refers to GRI 201-1**	**Discloses data**	**Operating costs**	**Employees**	**Providers of capital**	**Government**	**Community investments**	**Total in 2020 (USD in millions)**	**As % of net income**	**Remarks**
Telecom Egypt										
Telecom Italia	Yes	Yes	48%	33%	2%	4.9%	0.4%	59	0.7	Community investments
Telefonica								106	4.7	Telefonica Foundation
Telenor	Yes									
Telia										
Telkom								3	1.9	Telkom Foundation
Telkom Indonesia								27	1.3	Community empowerment and social investments
Telstra	Yes							104	8.2	Social and community investment including foregone revenue
Tencent										
Texas Instruments	Yes							26	0.5	TI & TI Foundation
TSMC	Yes							5	0.03	Cash donations
Türk Telekom										
Twilio								32	*	Grants, product credits, and discounts
Twitter										
Uber										
VEON										
Verizon								7	0.04	Verizon Foundation matching gifts
Viettel										
Vodafone	Yes							141	20.5	Donations and in-kind benefits; and cash and in-kind donations through Vodafone Foundation
Western Digital										
Xiaomi								20	0.7	Charitable donations
Yandex								21	6.5	Charitable donations & in-kind services
Yunji										
Zain	Yes									
Zoom										
ZTE	Yes							2	0.3	ZTE Foundation
AVERAGE / TOTAL	**69**	**21**	**53%**	**22%**	**9%**	**9%**	**0.2%**	**6,229**	**1.7**	
MEDIAN			**56%**	**19%**	**8%**	**5%**	**0.1%**		**0.8**	

Note: * Net loss.

TABLE 4.8: SDGS

Company	Publicly states that it supports the SDGs	Uses SDG framework for reporting goals and progress	SDG 7.2.1: Renewable energy share in the total final energy consumption	SDG 9.4.1: CO2 emission per unit of value added *
Acer	Yes	Yes		1.9
Adobe	Yes		37.5	4.7
Airbnb				
AIS	Yes	Yes	0.5	126.1
Akamai		Yes	51.0	59.7
Alibaba				40.6
Alphabet			85.1	32.3
Altice	Yes	Yes		3.5
Amazon	Yes		65.0	38.6
AMD	Yes	Yes	27.0	3.3
América Móvil	Yes	Yes	14.0	57.9
Ant	Yes			
Apple			92.2	3.4
Asus	Yes	Yes		1.5
AT&T		Yes	0.5	38.9
Axiata	Yes		0.5	239.5
Baidu	Yes		8.6	30.6
BCE	Yes			18.2
Bharti Airtel	Yes	Yes		68.0
Booking Holdings			29.0	6.5
Broadcom				10.1
BT	Yes	Yes	89.8	32.6
ByteDance				
China Mobile	Yes	Yes	6.3	163.3
China Satellite				
China Telecom				241.3
China Unicom				323.2
Chunghwa Telecom	Yes	Yes	5.3	112.6
Cisco	Yes	Yes	76.0	13.1
Citrix	Yes			6.6
Cloudflare	Yes			32.4
Cogent				
Comcast			3.9	22.1
Delivery Hero				1.6
Dell	Yes	Yes		4.3
Deutsche Telekom	Yes	Yes		43.8
Digicel				
Digital Realty Trust	Yes	Yes	48.3	767.9
eBay	Yes	Yes	61.6	15.4
EchoStar				
Elisa	Yes	Yes	87.4	27.9
Equinix	Yes	Yes	91.0	389.3

Company	Publicly states that it supports the SDGs	Uses SDG framework for reporting goals and progress	SDG 7.2.1: Renewable energy share in the total final energy consumption	SDG 9.4.1: CO2 emission per unit of value added *
Ericsson	Yes	Yes	51.6	7.8
Etisalat				40.4
Eutelsat		Yes		
Facebook	Yes	Yes		88.2
Foxconn	Yes	Yes	10.1	29.9
GlobalFoundries			0.1	484.1
Globe	Yes	Yes		143.3
GoJek	Yes	Yes	0.0	
Grab	Yes	Yes		5.8
GTT				
HCL			9.7	14.9
HP	Yes	Yes	40.0	4.5
Huawei	Yes			17.7
IBM	Yes	Yes		12.5
iFlytek				
Iliad				12.1
Infosys	Yes			5.7
Inmarsat				9.6
Intel	Yes	Yes	82.0	72.9
JD.com	Yes			9.3
Jio				381.8
Jumia				
KDDI	Yes	Yes		30.2
KPN	Yes	Yes	85.0	47.9
KT	Yes	Yes	0.1	60.3
Lenovo	Yes	Yes	2.6	3.0
LG	Yes	Yes	3.5	24.1
Liberty Global	Yes			20.5
Logitech	Yes	Yes	86.0	3.1
Lumen			5.1	100.6
MegaFon	Yes			
Meituan		Yes		2.1
Mercado Libre	Yes			50.7
Microsoft	Yes	Yes	95.2	29.4
Millicom	Yes	Yes		46.2
MTN	Yes	Yes		112.5
MTS	Yes	Yes		96.6
Naspers	Yes	Yes		5.0
NAVER	Yes	Yes	0.1	17.8
NEC	Yes	Yes	6.5	13.3
NetEase				1.9
Netflix			100.0	2.4
Nintendo			13.4	0.3

Company	Publicly states that it supports the SDGs	Uses SDG framework for reporting goals and progress	SDG 7.2.1: Renewable energy share in the total final energy consumption	SDG 9.4.1: CO2 emission per unit of value added *
Nokia	Yes	Yes	33.1	19.9
NTT	Yes	Yes	3.2	34.0
Nvidia	Yes			6.5
Ola				
Omantel	Yes			
Ooredoo	Yes	Yes		
Oracle	Yes		44.7	15.1
Orange	Yes	Yes		26.4
OTE		Yes		81.9
Palantir				
PayPal	Yes	Yes	66.0	1.2
PCCW				48.2
Pinduoduo	Yes			
PLDT	Yes	Yes	37.0	132.4
Proximus	Yes	Yes	76.7	15.4
Qualcomm	Yes	Yes	10.0	13.4
Rakuten	Yes	Yes		7.0
Rogers	Yes			14.3
Safaricom	Yes	Yes		24.3
Salesforce	Yes	Yes		13.8
Samsung	Yes	Yes	13.9	87.6
SAP	Yes	Yes	69.8	4.1
Seagate			0.0	113.3
ServiceNow			27.0	6.5
SES	Yes			14.8
Sina				
Singtel	Yes	Yes	1.0	14.5
SK hynix	Yes		0.0	279.3
SK Telecom	Yes	Yes	0.0	65.9
SoftBank	Yes			11.4
Sonatel		Yes	4.7	42.7
Sony	Yes	Yes	5.6	17.5
SpaceX				
Spark				7.8
Spotify			100.0	0.4
STC	Yes	Yes		11.4
Swisscom		Yes		5.2
Tata Communications	Yes	Yes	13.9	45.1
Tele2	Yes	Yes	84.4	16.8
Telecom Egypt				
Telecom Italia	Yes		30.0	39.5
Telefonica	Yes	Yes	71.7	32.7
Telenor	Yes	Yes	7.4	77.8

Company	Publicly states that it supports the SDGs	Uses SDG framework for reporting goals and progress	SDG 7.2.1: Renewable energy share in the total final energy consumption	SDG 9.4.1: CO2 emission per unit of value added *
Telia	Yes	Yes	93.0	13.9
Telkom	Yes	Yes	0.5	239.5
Telkom Indonesia				89.2
Telstra	Yes	Yes	100.0	65.6
Tencent				13.3
Texas Instruments			15.5	147.5
TSMC	Yes	Yes	7.3	218.9
Türk Telekom	Yes			204.5
Twilio				2.7
Twitter	Yes			
Uber	Yes	Yes	32.0	11.9
Veon	Yes	Yes		165.4
Verizon	Yes	Yes	3.0	31.9
Viettel				
Vodafone	Yes	Yes	54.1	41.2
Western Digital			7.1	59.9
Xiaomi	Yes	Yes		0.9
Yandex	Yes	Yes		69.7
Yunji				
Zain	Yes		1.4	213.0
Zoom				
ZTE	Yes		0.5	30.7
COMPANIES REPORTING	**97**	**77**	**72**	**125**

Note: Based on USD revenue.

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