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**2018**  
**INFORMATION AND**  
**COMMUNICATIONS**  
**TECHNOLOGY**  
**BENCHMARK FINDINGS**  
**REPORT**

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*Are the largest Information and  
Communications Technology  
companies in the world **doing**  
**enough to eradicate forced**  
**labor** from their supply chains?*

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# EXECUTIVE SUMMARY

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Technology companies are breaking traditional barriers and bringing the world closer together. Yet for all this progress there are concerns about what they are doing to ensure vulnerable workers are protected from exploitation in their supply chains.

KnowTheChain evaluated 40 global Information and Communications Technology (ICT) companies on their efforts to address forced labor in their supply chains. These companies represent the largest electronic hardware companies in the sector, with a combined market capitalization of \$4.7 trillion.<sup>1</sup> As such, they play an important role in helping prevent and respond to forced labor abuses in their supply chains.

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<sup>1</sup> Company selection and assessment of market capitalization is carried out by Sustainalytics.

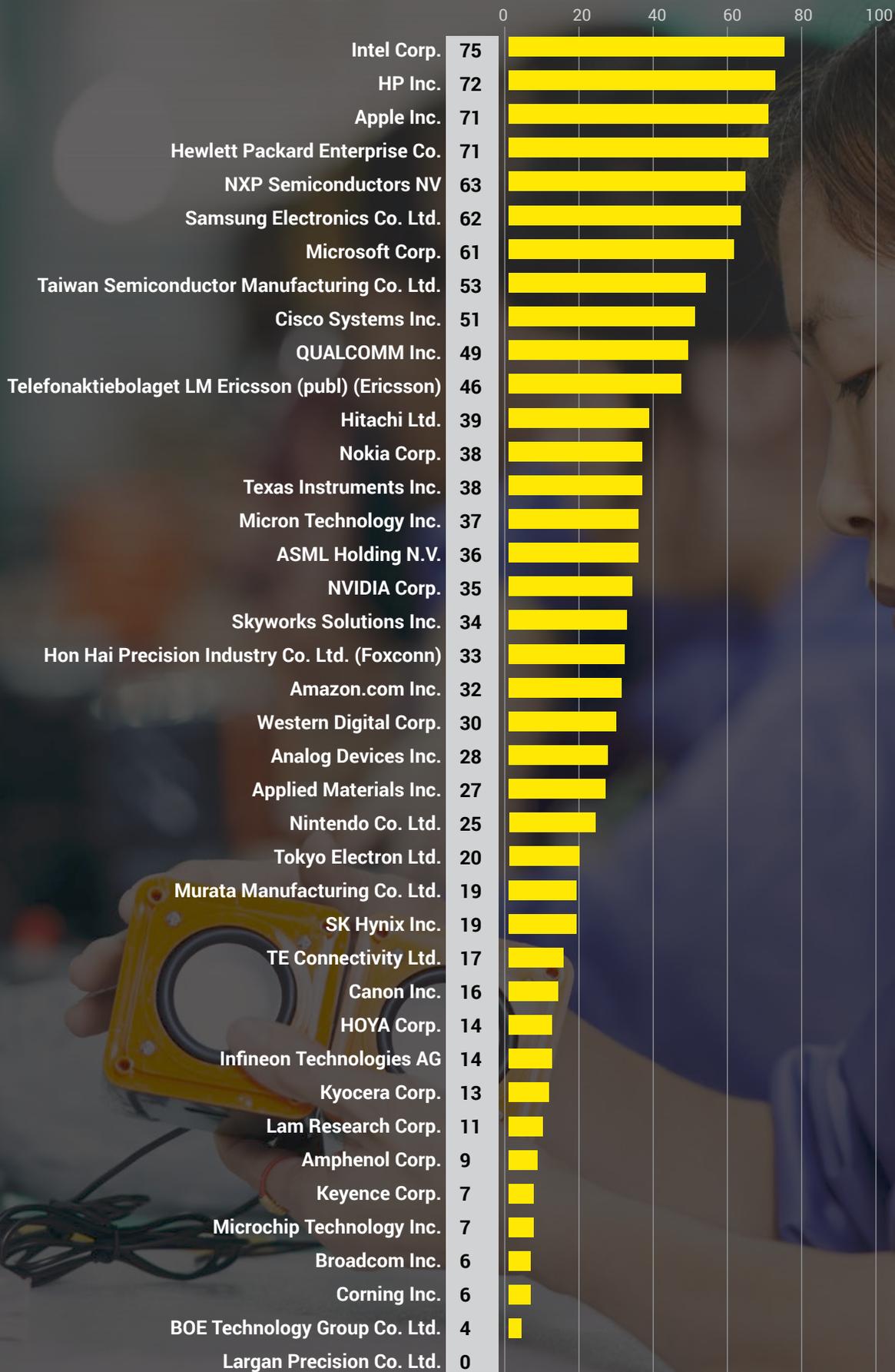
## Key findings from the benchmark include:

- The average score of the 2018 benchmark is **32 out of 100**. While 35 out of 40 companies have published a commitment to address forced labor in their supply chains, **there is often a disconnect between the policies and processes that companies have in place and the evidence that those are effectively implemented**. For example, 16 out of 40 companies say they have a grievance mechanism that is available to suppliers' workers, yet only three publish data on the usage of those mechanisms.
- **Intel, the leader of the 2018 benchmark (75/100), has overtaken both Apple and HP since 2016** by taking measures such as disclosing a supplier list, introducing unannounced audits, and disclosing evidence of reimbursement of recruitment fees to suppliers' workers. **Intel, HP, Apple, and Hewlett Packard Enterprise**, the four companies scoring above 70 out of 100 in the benchmark, demonstrate strong leadership on recruitment.
- Although larger companies tend to be among the top scorers, **Amazon**, the third largest benchmark company, is a significant outlier (32/100). In these times of greater transparency, **Broadcom has reduced its public disclosure dramatically**, resulting in an **81% reduction** in their score compared to 2016.
- **Worker voice and recruitment, the two areas that have the most direct impact on workers' lives, remain among the lowest scoring themes** in the benchmark. While 24 out of 40 companies prohibit worker-paid recruitment fees in their supply chains, only five provide evidence that fees were reimbursed to workers in their supply chains when a violation was discovered. This is particularly troubling given the impact such fees have on people's lives. For example, some Nepalese migrant workers in Malaysia were found to have been charged recruitment fees of US\$1,300 and would be charged the equivalent of three to four months' salary if they wanted to leave the job before the end of their contract.<sup>2</sup>

This report analyzes companies' disclosure and performance against seven benchmark themes and provides good practices examples and recommendations for companies. It also evaluates corporate commitments and compliance with relevant regulations and provides recommendations for investor action.

<sup>2</sup> The Guardian (2016), "[Samsung and Panasonic accused over supply chain labor abuses in Malaysia](#)". Accessed 30 April 2018.

2018 KnowTheChain ICT Benchmark



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## KEY FINDINGS

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**Intel** ranks first in our 2018 benchmark with a score of 75 out of 100. Compared to 2016, it has overtaken both **Apple** and **HP** by taking measures such as introducing unannounced audits, disclosing a list of their suppliers and providing evidence that any recruitment fees suppliers' workers paid were reimbursed. **Intel, HP, Apple, and Hewlett Packard Enterprise**, the four companies scoring more than 70 out of 100 in the benchmark, demonstrate strong leadership on recruitment.

The research found that companies with a market capitalization of more than US\$200 billion are within the top ten scoring companies, indicating a strong correlation between size and capacity to take action on forced labor, with a few notable exceptions. **Amazon** ranks at 20 out of 40, despite being the third largest company in the benchmark. Conversely, **Hewlett Packard Enterprise, HP, and NXP Semiconductors**, despite having a market capitalization of less than US\$50 billion, rank in the top five scoring companies.

**Largan Precision** comes in at the bottom of the benchmark with a score of 0 out of 100 as no relevant information was publically accessible or provided under the KTC methodology.

There are six additional companies scoring less than 10 out of 100: **Amphenol, Keyence, Microchip Technology, Corning, Broadcom,** and **BOE**. Readers may not recognize the names of the lowest scoring companies, yet they are the backbone of the ICT industry, whose products can be found in most household electronics brands. These companies supply the largest companies in the benchmark with camera lenses, display glass for consumer electronics, and semiconductors. This indicates that while the top scoring companies have strong practices in place regarding their first-tier suppliers, first-tier suppliers take limited efforts to cascade those standards to lower-tier suppliers.

### What does the average company look like?

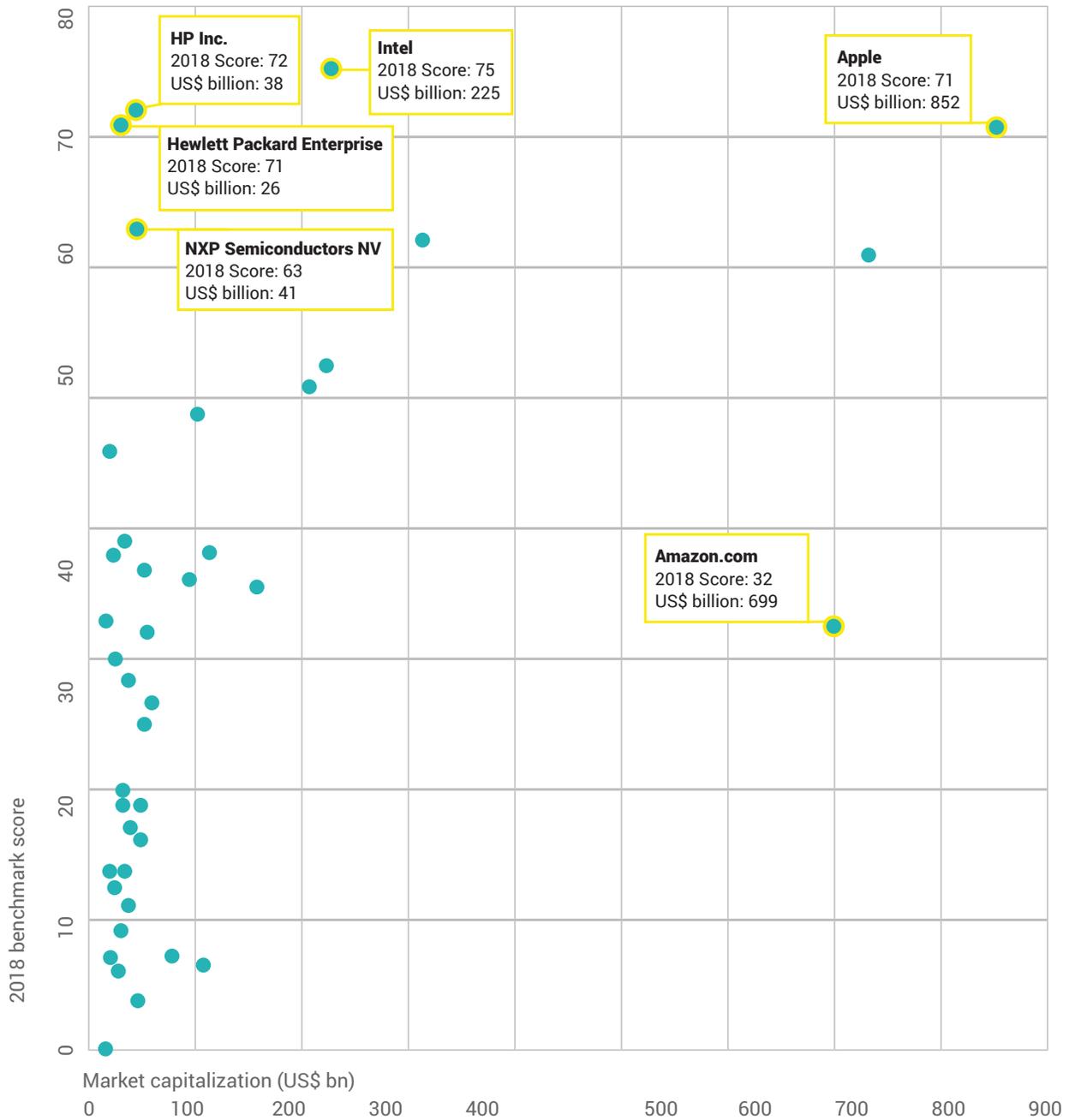
The average company in the benchmark gets a score of **32 out of 100**. That means that it is likely to disclose:

- A Supplier Code of Conduct that incorporates international standards prohibiting forced labor.
- A process for cascading that Code further down its supply chains.
- Employee training on forced labor.
- A policy prohibiting worker-paid recruitment fees in its supply chains.
- An audit process to assesses suppliers for incidences of forced labor.

However, the average company typically does not:

- Assess forced labor risks across its supply chains.
- Provide training to suppliers on forced labor risks.
- Go beyond policies and work towards responsible recruitment practices.
- Support and empower workers' voices, for example by providing effective grievance mechanisms.
- Disclose a remedy process.

### 2018 KnowTheChain ICT Benchmark



## Companies' policies and processes were assessed against seven themes:

- **Commitment and Governance:** This was the highest scoring theme. Most companies publish strong statements of commitment to address forced labor in their supply chains (35 out of 40) and train their employees on forced labor risks (31 out of 40). However, only eight companies disclose any engagement on the issue forced labor with stakeholders such as policy-makers or workers' rights organizations in countries in which their suppliers operate.
- **Traceability and Risk Assessment:** Although companies generally have traceability mechanisms in place, few publish details on their first-tier supply chain, or on the countries of below-tier suppliers. Less than half of the companies state that they conduct forced labor risk assessments on their supply chains (13 out of 40).
- **Purchasing Practices:** Companies typically do not disclose how they adapt their purchasing practices to mitigate risks of forced labor, though there is greater disclosure on inclusion of forced labor standards in supplier contracts and most companies have provisions in place to push supply chain standards to lower-tier suppliers.
- **Recruitment:** More than half of the companies (24 out of 40) disclose a policy that prohibits recruitment fees, but only five of them provide evidence that fees are reimbursed to workers in their supply chains when violations are discovered.
- **Worker Voice:** This was the lowest scoring theme. Although 16 out of 40 companies disclose a grievance mechanism that is available to suppliers' workers and other external stakeholders, only three publish data on the operation of that mechanism. Only six out of 40 companies disclose how they engage with workers in their supply chains.
- **Monitoring:** Roughly half of the companies disclose that their audit programs include worker interviews (22 out of 40) and visits to associated production facilities (20 out of 40). Only 12 out of 40 companies say that they conduct, or may conduct, unannounced audits of their suppliers.
- **Remedy:** The majority of companies say they have a process in place to develop corrective action plans with suppliers. However, only seven out of 40 companies disclose a remedy process for responding to issues and none outline adequate information on how their remedy process works, such as the timeframes for responding and approval procedures.



**Recruitment and worker voice** remain among the lowest scoring themes of the benchmark.

Therefore, all benchmarked companies need to take further action. **If a company were to adopt the practices of the highest scoring company in each of the seven themes, they would get a score of 92/100.** With the average benchmark score at 32 out of 100, and the highest score at 75 out of 100, this demonstrates that while good practices have been identified across themes, they are not systematically implemented by any of the companies.

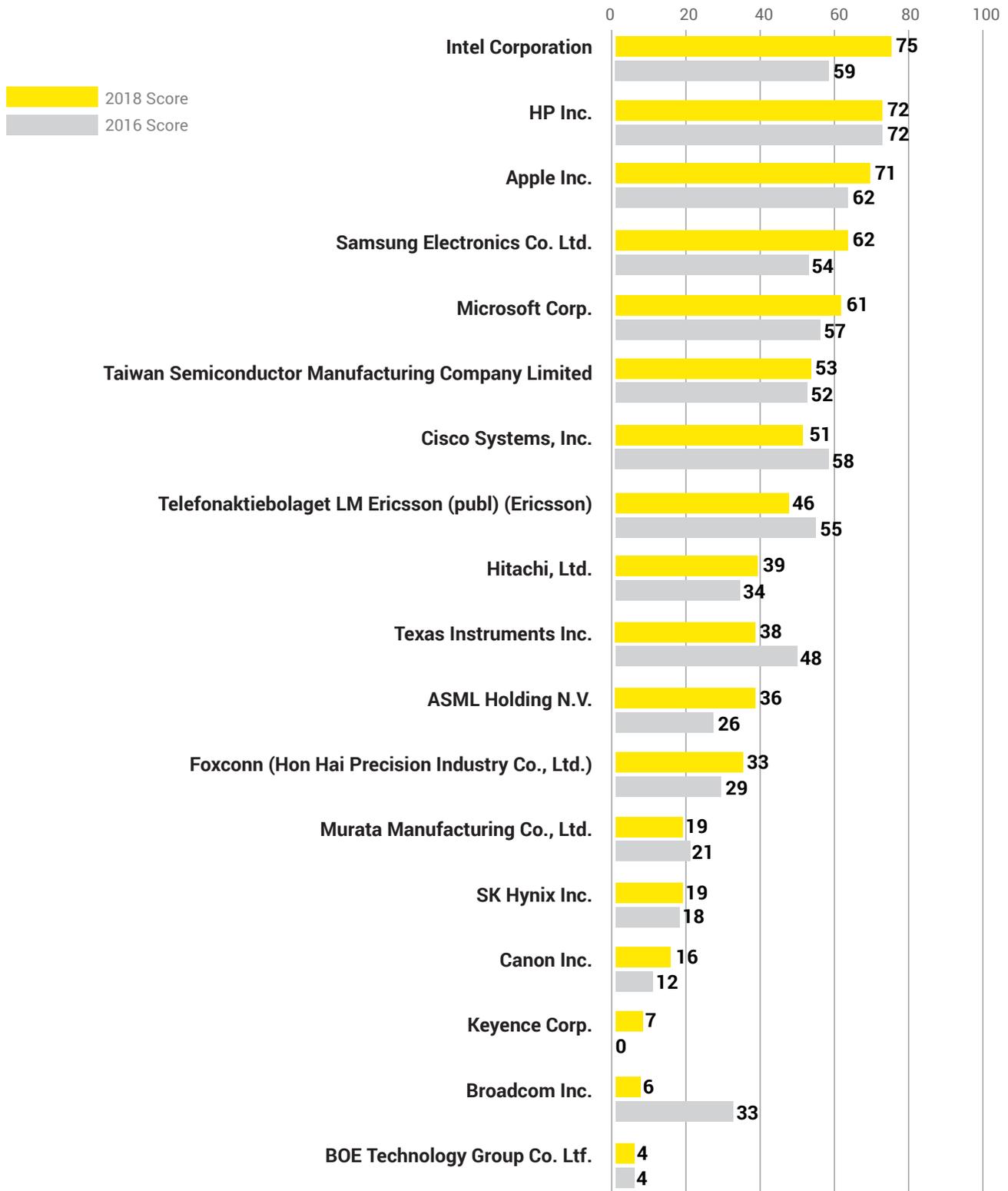
### Changes in the benchmark scores since 2016<sup>3</sup>

- The average score of the companies that were assessed in both 2016 and 2018 has increased slightly, from 39 out of 100 to 40 out of 100. This is positive given that there have been methodological changes which make it more difficult to get a higher score, although the improvement is much slower than stakeholders had hoped.
- The biggest increases in scores between 2016 and 2018 were achieved by **Intel** (59/100 to 75/100) and **ASML Holding**, a semiconductor equipment company (26/100 to 36/100).
- There are examples of high-scoring, middle-scoring and low-scoring companies that have significantly improved their practices since 2016. For example, **Apple** (62/100 to 71/100) has undertaken supply chain risk assessments that include forced labor, engaged stakeholders on forced labor, and integrated forced labor standards into its supplier contracts. **Hitachi** (34/100 to 39/100) has started delivering training to suppliers on modern slavery, requiring first-tier suppliers to cascade its standards to next-tier suppliers, and prohibiting worker-paid recruitment fees. **Keyence** (0/100 to 7/100) has adopted a Supplier Code of Conduct that prohibits forced labor, published a commitment to addressing forced labor in its supply chains, and published a statement under the UK Modern Slavery Act.
- The biggest decrease in score between 2016 and 2018 was for **Broadcom** (33/100 to 6/100), a supplier of semiconductors to companies such as Apple, HP and Hewlett Packard Enterprise. Broadcom recently redomiciled from Singapore to the US and is now the third-lowest company in the ranking. At the time of research, the company no longer discloses a slavery and human trafficking statement, Human Rights Policy or Sustainability Report, and is no longer a member of the Responsible Business Alliance. Yet the company is more than twice as large as any of the remaining 20 companies in the lower half of the benchmark.

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<sup>3</sup> Note that the benchmark methodology has been strengthened since 2016 and therefore comparisons are best made at the individual indicator level or by looking at the change in score of one company. For more details, see Appendix 2.

## Changes in scores of companies that were assessed in 2016 and 2018



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# INTRODUCTION:

## Forced Labor Risks in Electronics Supply Chains

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According to the International Labour Organization (ILO), an estimated 24.9 million people are victims of forced labor around the world. The ILO defines forced labor as “situations in which persons are coerced to work through the use of violence or intimidation, or by more subtle means such as accumulated debt, retention of identity papers, or threats of denunciation to immigration authorities.”<sup>4</sup>

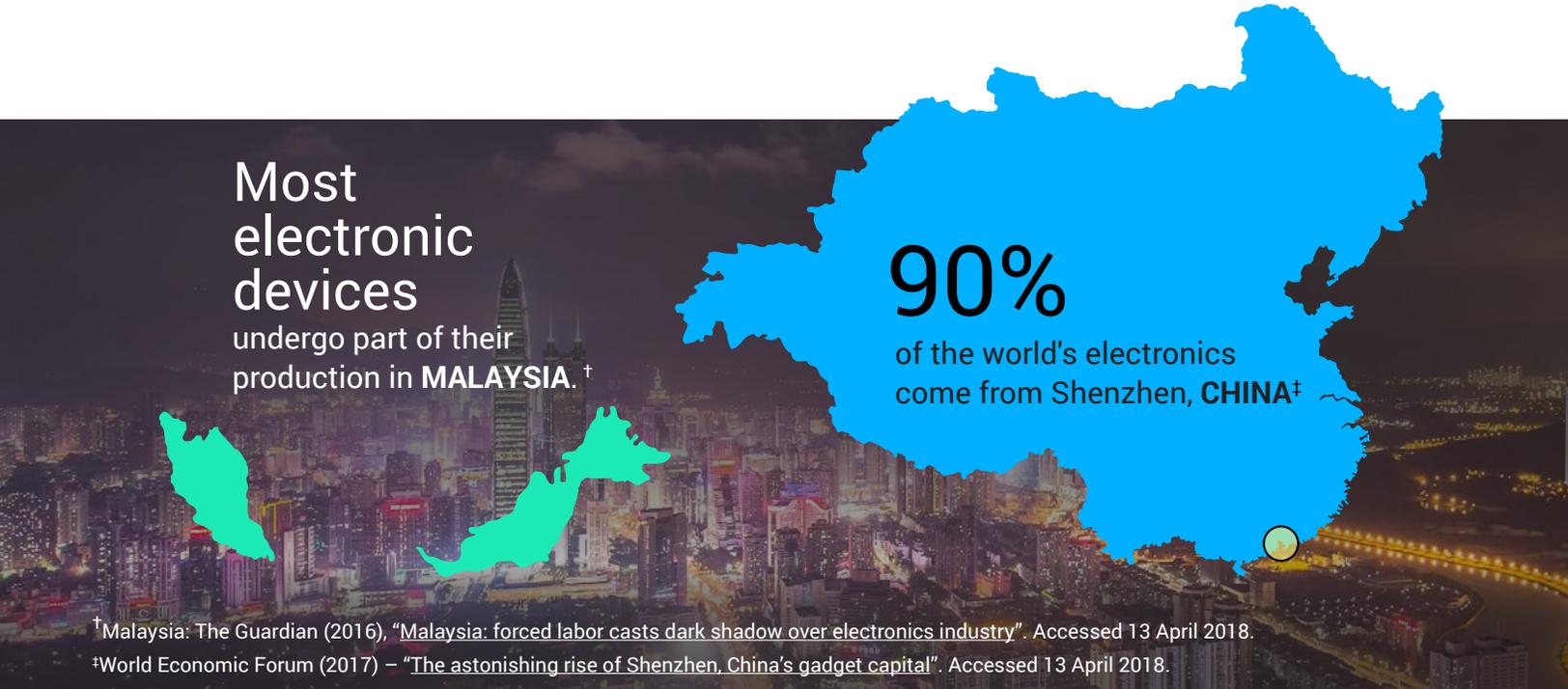
Ravin, a Nepalese national, is an example of a worker who had his passport taken when he joined an electronics company in Malaysia. When he requested his passport, the agency said it would cost him the equivalent of US\$1,082 to retrieve it. As a result, he was unable to visit family in Nepal in the seven years that he worked for the company.<sup>5</sup>

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<sup>4</sup> International Labour Organization, “Forced labour, modern slavery and human trafficking”. Accessed 13 April 2018.

<sup>5</sup> Verité (2014), “Forced labor in the production of electronic goods in Malaysia”, p. 123.

Ravin's story is not unusual for the information and communications technology (ICT) sector; forced labor risks in electronics supply chains are well-known. For example, in Malaysia, a study by Verité in 2014 found that nearly a third of migrant workers in Malaysia's electronics sector are in situations of forced labor;<sup>6</sup> the US Department of State has also highlighted that migrant workers in the electronics industry are at risk of forced labor;<sup>7</sup> and the ILO has emphasized the risks associated with working conditions, and employment and recruitment practices of migrant workers in Malaysia's electronics sector.<sup>8</sup> These risks are not exclusive to Malaysia, but significantly impact ICT companies since it is widely reported the majority of electronic brands source at least some components from Malaysia.<sup>9</sup> In addition to Malaysia, the US Department of Labor lists China as a country where electronics may be produced using forced labor.<sup>10</sup>



**Most electronic devices** undergo part of their production in **MALAYSIA**.<sup>†</sup>

**90%** of the world's electronics come from Shenzhen, **CHINA**.<sup>‡</sup>

<sup>†</sup> Malaysia: The Guardian (2016), "[Malaysia: forced labor casts dark shadow over electronics industry](#)". Accessed 13 April 2018.

<sup>‡</sup> World Economic Forum (2017) – "[The astonishing rise of Shenzhen, China's gadget capital](#)". Accessed 13 April 2018.

<sup>6</sup> Verité (2014).

<sup>7</sup> US Department of State (2017), "[Trafficking in Persons Report](#)", p. 267.

<sup>8</sup> ILO, [ILO statement on the VERITE report concerning working conditions in Malaysia's electronics sector](#). Accessed 13 April 2018.

<sup>9</sup> The Guardian (2016), "[Malaysia: forced labor casts dark shadow over electronics industry](#)". Accessed 13 April 2018. Lexis Nexis Modern-day slavery widespread in Malaysia's electronics industry September 23rd, 2014

<sup>10</sup> US Department of Labor (2016), [List of Goods Produced by Child Labor or Forced Labor](#). Accessed 4 May 2018.

These risks are also widely recognized by the industry. The Responsible Business Alliance, a coalition of more than 110 electronics and other companies, seeks to combat human trafficking and forced labor in electronics supply chains, and points to risks of forced labor in electronics manufacturing, including debt bondage and document retention.<sup>11</sup>

Workers hired by labor agencies that demand agency fees may end up working in situations of bonded labor due to the large sums of debt they incur. Verité found that recruitment fees charged to migrant workers in Southeast Asia ranged from US\$500 to US\$1,200.<sup>12</sup> Additionally, as Ravin's story demonstrates, employers or labor agencies may withhold workers' passports or identification documents, limiting workers' freedom of movement.

Recruitment practices such as these render migrant workers vulnerable to exploitative working conditions. However, other factors also place migrant workers at risk, as they may not be familiar with the culture and language of the country in which they are working and may not be aware of or able to exercise their labor rights.<sup>13</sup> Other prominent groups of vulnerable workers in ICT supply chains include student and intern workers, who may be coerced into working on a production line not relevant to their subject of study, under threat of not graduating.<sup>14</sup>

Risks of forced labor in the electronics sector also exist deeper within supply chains, in the sourcing of raw materials. The US Department of Labor reports that raw materials used in electronics products – including tin, tungsten (wolframite), tantalum (coltan), and gold – may be produced with forced labor.<sup>15</sup>

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<sup>11</sup> Responsible Business Alliance (2014), "[Working to eradicate forced labor in the electronics supply chain](#)", p. 1.

<sup>12</sup> "Electronics and Electrical," Verité, "Responsible Sourcing Tool," <https://www.responsiblesourcingtool.org/visualizerisk>. Accessed 13 April 2018.

<sup>13</sup> Verité, "Responsible Sourcing Tool".

<sup>14</sup> See, for example, Good Electronics and Danwatch (2015), "[Servants of servers: rights violations and forced labor in the supply chain of ICT equipment in European universities](#)".

<sup>15</sup> US Department of Labor (2016), [List of Goods Produced by Child Labor or Forced Labor](#). Accessed 4 May 2018.

## Raw materials which may be produced with forced labor\*



**80%**  
of electronics companies **do not know** the countries of origin of the raw materials they source\*\*

\* US Department of Labor (2016), [List of Goods Produced by Child Labor or Forced Labor](#). Accessed 4 May 2018.

\*\* Harvard Business Review (5 January 2017) – [“80% of Companies Don’t Know If Their Products Contain Conflict Minerals.”](#) Accessed 11 May 2018.

The 40 ICT companies benchmarked by KnowTheChain for this report have a combined market capitalization of US\$4.7 trillion, which is larger than the US government’s federal budget for 2018 at US\$4.1 trillion.<sup>16</sup>

**The size of these companies brings with it a responsibility to use the significant resources at their disposal to mitigate these risks and drive changes in practice in the sector to improve the lives of millions of workers.**

<sup>16</sup>U.S. Government Publishing Office (2017) [“Budget of the U.S. Government, A New Foundation for American Greatness, Fiscal Year 2018”](#), see outlays detailed on p. 25

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# COMMITMENTS AND COMPLIANCE

## with Regulatory Transparency Requirements

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This section looks at whether companies make specific, time-bound commitments to address forced labor in their supply chains, including, where relevant, whether they comply with the minimum requirements of the UK Modern Slavery Act and the California Transparency in Supply Chains Act. This assessment was not taken into account in the benchmark scores. This information is intended to provide context for what additional steps a company is taking and the degree to which the company is complying with relevant laws.

Companies that made clear statements of commitment were among the higher-scoring companies in the benchmark. Fourteen out of 40 companies made commitments to address forced labor in their supply chains of which nine were time-bound. For example, **Ericsson** discloses that in 2018, it plans to develop its online supplier code of conduct training to include issues around modern slavery and human trafficking, as well as provide focused human trafficking and modern slavery training targeted at sourcing personnel in selected markets, and for specific functions. **NXP Semiconductors** discloses that it is working with Singapore Polytechnic to develop a game-based training for its supply chains, targeting small and medium suppliers. The training presents situations where the supplier will have to make decisions regarding the hiring of foreign workers. The company states that the game will teach that choosing the no-cost option will lead to modern slavery, and will have severe business implications and additional long-term costs.

As part of assessing company disclosure, companies have been looked at to see if they are required to report under the UK Modern Slavery Act and the California Transparency in Supply Chains Act. Both these pieces of legislation require companies to publish a statement outlining the steps they are taking to address slavery and human trafficking in their supply chains.

## The UK Modern Slavery Act

The UK Modern Slavery Act has three minimum requirements:

- A link on the company's homepage.
- A director's signature.
- Board approval.

We identified 36 out of 40 companies in the benchmark that are required to publish a statement under the UK Modern Slavery Act. Thirty-three of these companies have published a statement; **Broadcom**, **SK Hynix**, and **Tokyo Electron** are the exceptions. By our assessment, only five of the published statements are fully compliant with the three minimum requirements of the legislation (**Ericsson**,

**Hewlett Packard Enterprise, Nintendo, NXP, and Qualcomm**). Typically, statements had been signed by a director or equivalent, however, board approval was often not explicit, as required by the law. Only some companies post a link to the statement on their homepage.

## The California Transparency in Supply Chains Act

The California legislation requires companies to:

- Place a conspicuous link to the statement on the homepage.
- Cover five areas of disclosure: verification, audits, certification, internal accountability, and training.

We identified 24 out of 40 companies that are required to report under the California Transparency in Supply Chains Act. Nineteen of these companies have published a statement. However, compliance with the requirements of the legislation follows a similar pattern to statements made under the UK Act: by our assessment, only five of these statements (**Cisco, Intel, Lam Research, Hewlett Packard Enterprise, and NXP Semiconductors**) are compliant with the requirements of the California Act. Most of the statements covered the five areas of disclosure required, but companies more often failed to place a conspicuous link to the statement on their homepage.

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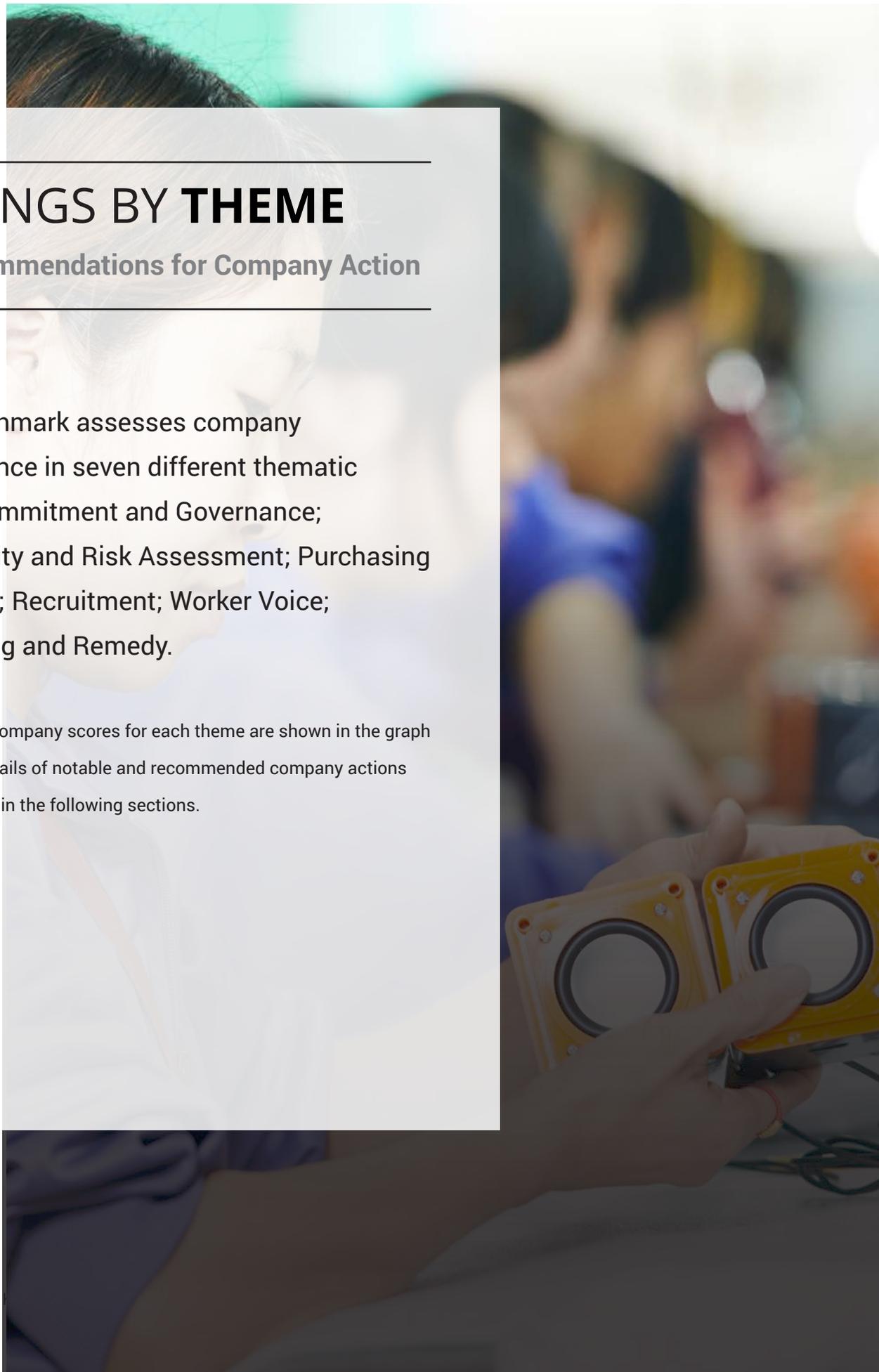
# FINDINGS BY **THEME**

## and Recommendations for Company Action

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The benchmark assesses company performance in seven different thematic areas: Commitment and Governance; Traceability and Risk Assessment; Purchasing Practices; Recruitment; Worker Voice; Monitoring and Remedy.

The average company scores for each theme are shown in the graph below and details of notable and recommended company actions are presented in the following sections.



### Scores per theme - what the average company looks like



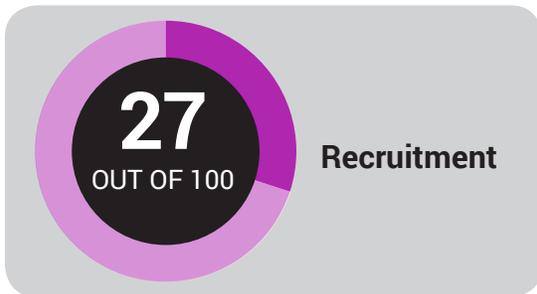
**Commitment and Governance**



**Traceability and Risk Assessment**



**Purchasing Practices**



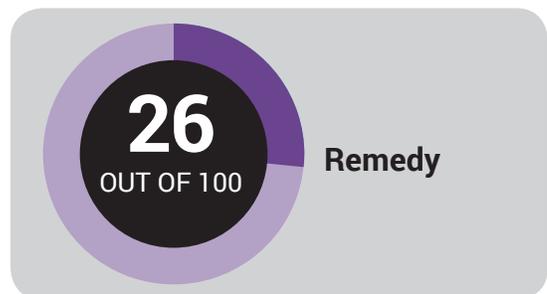
**Recruitment**



**Worker Voice**



**Monitoring**



**Remedy**

Indicates lowest scoring themes

## 1. Commitment and Governance

This theme evaluates a company's commitment to addressing forced labor, supply chain standards, management processes and board oversight, training programs, and engagement with stakeholders.

Average company score

**55/100**

Commitment and governance was the highest scoring theme of the benchmark. Companies made strong statements of commitment to address forced labor in their supply chains, with 35 out of 40 companies publishing such a commitment. Similarly, most companies engage with multi-stakeholder initiatives on forced labor and have training programs in place on forced labor risks.

Thirty-six out of 40 companies disclose having a supply chain standard that prohibits forced labor; 29 of them explain how they communicate that standard to their suppliers. These results show an improvement since KnowTheChain's 2016 ICT benchmark: **ASML, Canon, Keyence, Murata,** and **SK Hynix** have since published a supply chain standard that requires suppliers to adhere to international standards prohibiting forced labor. **Amphenol, BOE, Largan Precision,** and **Microchip Technology** have not yet disclosed a publicly available supply chain standard.

Disclosure on oversight and implementation of policies on forced labor was relatively strong. Twenty-eight out of 40 companies described a team, program, or officer that is responsible for supply chain standards on forced labor or other anti-trafficking policies. Detail on board-level oversight, however, was rarely disclosed; six out of 40 companies gave some information on a board member or committee that has oversight of policies and standards on forced labor.

The majority of companies disclose training for their employees on their policies relating to human trafficking and forced labor. More than half of companies (22 out of 40) also report delivering

training to their suppliers on their policies on forced labor. Some companies refer to training carried out in collaboration with other companies in the sector, or with expert organizations such as the human rights non-governmental organization, Shift. Only seven companies provided supplier training across different supply chain contexts (tiers or countries). Leading companies are training both suppliers and labor agents in their supply chains, in high-risk countries or where suppliers are known to hire vulnerable groups of workers such as students or migrant workers.

Disclosure on stakeholder engagement on the issue of human trafficking and forced labor was poor. Only eight out of 40 companies disclosed any engagement on the issue forced labor with stakeholders such as policy-makers, workers' rights organizations, or local non-governmental organizations in countries in which their suppliers operate. However, ICT companies more commonly reported membership of multi-stakeholder or industry initiatives which focus on forced labor, such as the Responsible Business Alliance (RBA). Twenty-six out of 40 disclosed participating in initiatives including the Responsible Labor Initiative, the Global Business Coalition against Human Trafficking and the Leadership Group for Responsible Recruitment.

## **Notable Company Action**

### **Management and Accountability**

**Ericsson** discloses that its Board of Directors is briefed at least twice a year on sustainability and corporate responsibility topics, including human rights and modern slavery.

### **Training**

**HP** discloses that it trains procurement staff on the context of forced labor and modern slavery, indicators of conditions of forced labor, the company's policies on combatting modern slavery, who to contact for help, and how to report concerns.

### **Stakeholder Engagement**

**Intel** reports that it is a founding member of the Responsible Business Alliance's (RBA) Responsible Labor Initiative and an active member of the Initiative's Steering Committee. The company further helps advance the RBA's Supplemental Validated Assessment Process program to strengthen its focus and impact on forced labor, and pilots this new audit protocol.

## Recommended Company Action

**Stakeholder Engagement:** Consult with local stakeholders such as unions, policy makers, or workers' rights organizations on the issue of forced labor in countries in which suppliers operate.

**Training:** Ensure suppliers across sourcing countries and supply chain tiers are trained on forced labor.

## 2. Traceability and Risk Assessment

This theme measures the extent to which a company demonstrates an understanding of its suppliers and their workforce by disclosing relevant information, and assesses and discloses forced labor risks across its supply chains.

Average company score

**29/100**

Although companies generally have traceability processes in place, few companies publish details on their first-tier supply chain, or on the countries of below-tier suppliers. Additionally, a disappointing number of companies carry out human rights risk assessments on their supply chains to identify risks of forced labor.

Nine out of 40 companies disclose a list of their first-tier suppliers, with three of those companies – **Apple, Hewlett Packard Enterprise, and HP** disclosing both names and addresses of those suppliers. **HP** additionally publishes a list of its commodity and component suppliers. Twenty-seven out of 40 companies disclose the sourcing countries of raw materials at high risk of forced labor in their supply chains including for tantalum, tin, tungsten, and gold.

Very few companies provide details of their supply chain workforces. Three companies describe the processes they have in place to record data on their suppliers' workforce (**Intel, NXP, and Qualcomm**) including factors such as gender, age, and the number of migrant workers. HP and

**Hewlett Packard Enterprise** go further: **HP** discloses data on the number of migrant workers in its supply chains and the number of workers per final assembly factory, and **Hewlett Packard Enterprise** reports the proportion of student workforce in its supply chains.

The number of companies disclosing a risk assessment that includes forced labor, carried out on their supply chains, was surprisingly low. Thirteen out of 40 companies state that they conduct risk assessments on their supply chains which specifically cover forced labor risks. Although far fewer companies are carrying out risk assessments than expected, this does mark an improvement since 2016 when only three out of 20 companies (**Hitachi**, **HP**, and **Intel**) disclosed conducting such risk assessments. Of the companies benchmarked in 2016, **Apple**, **Ericsson**, and **Qualcomm** have since disclosed undertaking risk assessments that include forced labor for their supply chains.

Similarly, only 12 out of 40 companies detail risks identified in their supply chains. Three of these companies (**Ericsson**, **Intel**, and **Nokia**) named risks identified in multiple tiers of their supply chains. Risks identified include the sourcing and extraction of raw materials, and high rates of employment of migrant workers through labor agencies.

## Notable Company Action

### Traceability

**Hewlett Packard Enterprise** discloses a list of names, addresses and sustainability information of its final assembly suppliers; a list of smelters and refiners of tantalum, tin, tungsten and gold in its supply chains; a list of commodity and component suppliers; a list of countries where it believes minerals in its supply chains may originate from; and information on the proportion of students in its workforce supply chains.

### Risk Assessment

**Nokia** states that it has conducted risk assessments on its supply chains based on both product and geography. The risk assessments include workforce skill level and risk of informal employment. The company discloses Asia-Pacific and China as its highest risk regions and publishes a map of countries where its suppliers are located, highlighting the level of risk of modern slavery in each country. Additionally, it identifies electronic components, electromechanical procurement and electronic manufacturing services, sub-assemblies and hardware solutions as high risk in its supply chains.

## Recommended Company Action

**Risk Assessment:** Undertake risk assessments which evaluate supply chains for risks of forced labor and human rights abuses, for example on specific raw materials, regions and/or groups of workers.

**Supplier Lists:** Disclose a supplier list that includes names and addresses of suppliers and publish information on suppliers' workforce, such as the number of workers or percentage of migrant workers.

## 3. Purchasing Practices

This theme assesses to what extent a company adopts responsible purchasing practices and integrates supply chain standards into supplier selection and supplier contracts, and whether it cascades them down the supply chain.

Average company score

**40/100**

Companies typically did not disclose how they were adapting their purchasing practices to mitigate risks of forced labor, though there was greater disclosure on inclusion of standards on forced labor in supplier contracts, and most companies had provisions in place to push supply chain standards to lower-tier suppliers.

Only 12 out of 40 companies outline the steps that they are taking to source raw materials responsibly. Companies typically limit their disclosure to describe their conflict minerals due diligence, following the [OECD Due Diligence Guidance](#) for Responsible Mineral Supply Chains which includes some level of forced labor due diligence. However, only two companies (**Apple** and **Microsoft**) explicitly outline how they address forced labor risks at the raw material level. For example, **Apple** requires smelters and refiners of tin, tantalum, tungsten, gold, and cobalt to participate in independent third-party audit programs, which include assessment of forced labor risks.

Four companies disclose how they adapt purchasing practices in the first-tier of their supply chains to avoid exacerbating the risk of forced labor, for example by regularly reviewing forecasting with suppliers and analyzing suppliers' capacity to avoid excessive overtime for workers. Only three of 40 companies (**Hewlett Packard Enterprise, HP, and Intel**) describe the efforts they make to incentivize good labor practices at first-tier suppliers. The companies record suppliers' social responsibility performance, including in relation to forced labor, and tie this performance to procurement decision-making and award schemes.

Half of companies indicate that they assess suppliers for forced labor risks prior to entering into a contract with them, but only six out of 40 companies describe such a supplier selection process in detail or disclose outcomes of this process. Similarly, over half of companies (23 out of 40) disclose that they include provisions that prohibit forced labor in their contracts with suppliers. However, only seven companies publicly disclose the language of supplier contracts or the contract itself.

Twenty-seven out of 40 companies have provisions in place for cascading standards incorporated into their Supplier Code of Conduct or other standards further down their supply chains. However, the extent to which these policies are effective is not clear. For example, **Largan Precision, BOE Technology, Broadcom, Corning, Keyence** and **Amphenol Corporation** all score below 10 out of 100 in the benchmark (i.e., have limited if any provisions in place to address forced labor risks in their supply chains), but their customers include **Apple, Hewlett Packard Enterprise, HP** and **Microsoft**, all of which have provisions in place for cascading their supply chain standards.<sup>17</sup> These companies likely also supply to other big brands included in the benchmark, but it is not possible to identify who they work with as few companies publish supplier lists.

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<sup>17</sup>Note the latter also have suppliers among the higher-ranking companies of the benchmark.

## Notable Company Action

**Microsoft** states that its Responsible Sourcing of Raw Materials Policy extends all provisions of its Supplier Code of Conduct, which covers human and labor rights, to all of its raw material supply chains. It also partners with organizations that address human rights in the upstream mining and smelter industries to improve conditions for workers in raw material supply chains.

**HP** discloses that it has multi-year agreements in place with major manufacturing suppliers. The company notes that longer-term contracts and relationships allow it to build awareness and capability to meet supply chain responsibility expectations, including the implementation of policies and processes addressing the risks of modern slavery. Additionally, it maintains social and environmental responsibility scorecards for manufacturing suppliers, which measure supplier performance and are used to incentivize suppliers. The scorecards are used to select manufacturing suppliers representing 50% of HP's manufacturing spend.

## Recommended Company Action

**Raw materials sourcing:** Ensure raw materials are sourced responsibly by addressing forced labor risks at the raw material level.

**Purchasing practices:** Take steps to mitigate the risks resulting from purchasing practices such as lack of provision of purchasing forecasts to suppliers, and incentivize good labor practices, for example through longer-term contracts, increased orders, or financial incentives.

## 4. Recruitment

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This theme measures a company's approach to reducing the risk of exploitation of supply chain workers by recruitment agencies, eliminating workers' payment of fees during recruitment processes throughout its supply chains, and protecting the rights of migrant workers.

Average company score

**27/100**

Recruitment was among the lowest scoring themes of the benchmark. The average company had a policy in place to prohibit worker-paid recruitment fees, but little else to show in practice. This is concerning given the known forced labor risks associated with recruitment practices in the ICT sector.

Eight out of 40 companies outline their approach to recruitment in their supply chains: they have a policy that requires direct employment in its supply chains, require employment and recruitment agencies in its supply chains to uphold workers' fundamental rights and freedoms, and/or disclose information on the recruitment agencies used by suppliers. This includes two companies, **Hewlett Packard Enterprise** and **HP**, that have policies which require direct employment in their supply chains thereby eliminating the risks of forced labor associated with employment agencies. Both companies also require suppliers to have contracts in place with recruitment agencies which include standards on forced labor. However, this is not common practice, with only eight out of 40 companies having policies in place that require employment or recruitment agencies to uphold standards on forced labor.

Companies did not disclose information on the recruitment agencies used by their suppliers. However, four companies disclose having processes in place to identify the name or locations of labor agencies in their supply chains, or reported the countries in which they are based.

In relation to recruitment fees, Responsible Business Alliance (RBA) members have particularly strong policies in place due to their use of the RBA Supplier Code of Conduct. The most recent versions of the Code state that workers shall not be required to pay recruitment fees, and that any fees found to have been paid must be repaid to workers. Twenty-four out of 40 companies have a policy in place that prohibits recruitment fees being charged to suppliers' workers. Of companies that were scored in both benchmarks, in 2016 eight companies had such a policy in place, which increased to 12 in 2018. **Hitachi**, for example, having previously "not yet developed an approach" on the issue of recruitment fees has now joined the RBA and adopted the RBA Code as its Supplier Code. **Samsung** has since published its migrant worker policy, which prohibits recruitment fees. Moreover, while in 2016 only two companies disclosed that they reimbursed recruitment fees (**Apple** and **Cisco**), in 2018, **Hewlett Packard Enterprise**, **Intel**, **Samsung**, and **Taiwan Semiconductor Manufacturing Company** also disclosed evidence that recruitment fees, where found, had been reimbursed to workers. This is tangible evidence of an impact on workers' lives. It is therefore encouraging that the number of companies taking action in this area is increasing; however, this represents only five<sup>18</sup> out of 40 companies in the benchmark, showing a lack of action in the sector as a whole.

A quarter of companies disclose some information related to the monitoring of recruitment agencies. Most require suppliers to audit labor agencies, and a few do so directly. Some companies also outline approaches to ethical recruitment such as training labor agencies on preventing the risk of forced labor. **Hewlett Packard Enterprise**, for example, partnered with other ICT companies to conduct training for suppliers and labor agents based in Southeast Asia on preventing the risks of modern slavery in the recruitment of foreign migrant workers. Additionally, a few companies disclose membership of the Steering Committee of the [Responsible Labor Initiative](#). The Responsible Labor Initiative is a multi-stakeholder initiative focused on ensuring the rights of workers vulnerable to forced labor in supply chains are protected.

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<sup>18</sup> Apple, Hewlett Packard Enterprise, Intel, Samsung, and Taiwan Semiconductor Manufacturing Company. Cisco is not considered in the group of five companies for this benchmark because it last disclosed evidence of reimbursing fees in 2014, which is out of the timeframe of this report.

Twenty-six out of 40 companies have policies in place that prohibit the withholding of suppliers' workers' identification documents. Although the majority of companies have relevant policies in place for protecting migrant workers in their supply chains, only five companies disclose some evidence of how they work with suppliers to ensure that migrant workers' rights are respected. This included, for example, using training opportunities with suppliers and labor agents to hear directly from suppliers on challenges they are facing related to forced labor, and adjusting their own capacity-building efforts accordingly.

## Notable Company Action

### Recruitment Fees

**Apple** discloses that in 2017, fees of more than US\$1.9 million were reimbursed to more than 1,500 foreign contract workers and that this reimbursement was confirmed by independent auditors. Additionally, the company reports that it requires suppliers to end business relationships with any labor agencies that are not committed to changing their practices of charging fees.

### Monitoring and Ethical Recruitment

**Intel** reports a new initiative which requires key suppliers to map the journey of their migrant workers, assess those journeys for risks, and develop action plans to mitigate those risks. The company discloses that more than 20 suppliers have completed this mapping so far.

### Migrant Workers' Rights

**NXP Semiconductors** reports that it introduced a policy whereby all workers' passports must be deposited with the company with unrestricted access for workers. It requires suppliers to implement this policy, and includes that workers must be granted access to their passports within eight hours of making a request.

## Recommended Company Action

**Recruitment Fees:** Ensure that no fees are charged to workers in supply chains, and incorporate the Employer Pays Principle into policies to ensure that the costs of recruitment are borne by the employer, and not the worker. Require fees to be repaid when charged, and publish evidence that these policies are being implemented.

**Ethical Recruitment:** Adopt ethical recruitment practices in supply chains by providing supplier training on ethical recruitment, ensuring suppliers have a screening and selection process in place for recruitment agencies, supporting the development of ethical recruitment schemes, and participating in collaborations such as the RBA's Responsible Labor Initiative.

**Migrant Workers' Rights:** Work with suppliers to ensure migrant workers' rights are respected, for example by working with suppliers to provide training programs to lower-tier suppliers or labor agents.

## 5. Worker Voice

This theme measures the extent to which a company engages with workers in its supply chains, enables freedom of association, and ensures access to effective and trusted grievance mechanisms.

Average company score

**15/100**

As KnowTheChain's 2016 ICT benchmark found, worker voice was once again the lowest scoring theme. We continue to see large gaps in disclosure regarding what companies are doing to enable workers in their supply chains to use their voice and promote freedom of association, and a lack of evidence that supply chain workers have access to effective grievance mechanisms.

The benchmark findings show poor disclosure on both worker voice and supporting workers' right to freedom of association. Six out of 40 companies give examples of engaging directly with workers in their supply chains, or working with stakeholders to do so. **Microsoft** has provided education on labor rights and training on its pilot grievance mechanism at six first-tier and second-tier suppliers. **NXP Semiconductors** provides training to workers in its supply chains on its no recruitment fee policy, appropriate working conditions, reading paychecks, working hours, living conditions, and protections for workers who report their concerns.

Only three out of 40 companies referenced working with suppliers to improve their practices on freedom of association. However, despite the small number of companies that are taking action in these areas, this does mark a step in the right direction in company practices since 2016 when no companies scored points for worker voice or freedom of association.

Sixteen out of 40 companies disclose having a grievance mechanism in place that is available to suppliers' workers and to external stakeholders. However, companies typically do not demonstrate that the mechanism is effective, or whether it is used by workers in their supply chains. For instance, only three companies (**Apple**, **Microsoft**, and **Samsung**) publish data on the operation of the supply chain grievance mechanism. This includes information on the number and type of complaints received by topic, per year. It is equally rare for companies to disclose evidence that mechanisms are available to and used by lower-tier suppliers' workers.

However, practices in this area have developed since 2016. Leading companies are starting to look into the effectiveness of grievance mechanisms in their supply chains. **HP** requires suppliers to have effective and confidential grievance mechanisms available in migrant workers' native languages. **Apple** requires suppliers to maintain records of information such as types and number of grievances, channels used by workers, and worker satisfaction with resolutions. Notably, **Samsung** discloses the percentages of types of complaints it receives regarding human rights at the supplier level, such as complaints about managers, wages, benefits, workhours, and others, thus demonstrating the mechanism is in fact used to report grievances of workers in supply chains.

Companies are taking some steps to ensure that workers are able to access the supply chain standards on forced labor that are applicable to them. Twenty-one out of 40 companies disclose that their supply chain standards are available in the languages of suppliers' workers. However, only a quarter of companies explain how they ensure those policies are communicated to workers in their supply chains.

## Notable Company Action

### Worker Voice

**Apple** collaborated with the International Organization for Migration to develop a program for migrant workers to receive training on their rights before leaving their country of origin. The program trains suppliers' workers on their rights and contract terms, the culture of their country of employment, and how to report illegal practices. This has been delivered to over 300 migrant workers from Indonesia, Nepal, and Vietnam.

### Grievance Mechanism

**Samsung** discloses that it offers its first- and second-tier suppliers several mechanisms to voice grievances, including telephone, e-mail, online and mobile phone reporting. The company further provides data on the percentage of complaints received via its grievance channel on issues related to work environment and human rights at the supplier level. These include reports regarding management, wages, work hours, health and safety, and benefits.

## Recommended Company Action

**Worker Voice:** Work with stakeholders to engage with workers in supply chains to ensure they understand and are able to exercise their labor rights. Engagement could be undertaken in collaboration with suppliers, local labor NGOs, and/or unions. When using technologies such as mobile phone apps to engage suppliers' workers, companies may wish to consider the [WEST Principles](#) to ensure meaningful engagement.

**Grievance Mechanism:** Ensure grievance mechanisms are in place and communicated to both suppliers' workers and external stakeholders such as local NGOs. Demonstrate their effectiveness by disclosing data on the operation and use of the mechanism.

## 6. Monitoring

This theme evaluates a company's process for auditing suppliers (including whether it performs non-scheduled visits, reviews relevant documents such as wage slips or contracts, interviews workers, and audits lower-tier suppliers) and providing disclosure on the outcomes of supplier audits.

Average company score

**33/100**

The majority of companies disclose having an audit process in place for their suppliers that includes monitoring for forced labor. Twelve out of 40 companies say that they conduct, or may conduct, non-scheduled audits. **Hitachi, Intel, and Foxconn** have started to undertake unannounced audits since 2016. However, no company disclosed a percentage of unannounced audits they had undertaken on suppliers.

Just over half of companies disclosed that their audit programs include worker interviews (22 out of 40) and visits to associated production facilities (20 out of 40). Twelve of these companies use the RBA's Validated Audit Process to undertake audits on suppliers, which includes a review of relevant documentation, interviews with suppliers' workers separately from their management, and visits to facilities and worker housing such as dormitories.

Seven out of 40 companies stated that they audit below the first-tier of suppliers. One company expressed experiencing difficulties in obtaining information from their first-tier suppliers regarding who their below-tier suppliers are, due to confidentiality. The company further noted that where they were aware of them, below-tier suppliers may refuse audit requests due to the lack of a direct business relationship.

Companies disclose insufficient information on how their audit processes work in practice. Only four out of 40 companies give an indication of the percentage of workers interviewed during audits, despite the fact that more than three times this amount say that they conduct them. Fifteen out of

40 companies give a summary of their audit findings. Leading companies are disclosing compliance data per audit item, such as the number of violations per item, or the percentage of suppliers found to have violations.

## Notable Company Action

**HP** discloses data from its 2017 supplier audits, including that it conducted interviews with 2,251 workers. The company further specifies the number of male and female workers interviewed.

**Apple** audits all final assembly manufacturers annually, and also audits suppliers further down its supply chain based on geographic risk, previous audit performance, manufacturing process risks, and planned spending. Apple also takes into account concerns brought by internal teams, external stakeholders, NGOs, and others. In addition, Apple requires smelters and refiners of tin, tantalum, tungsten, gold, and cobalt to participate in independent third-party audit programs.

## Recommended Company Action

**Worker Interviews:** Ensure that audit processes include worker interviews, conducted without managers being present, and disclose data on the number or percentage of workers interviewed during audits.

**Audit findings:** Publish a summary of audit findings, including the number and type of violations per category.

## 7. Remedy

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This theme measures the extent to which a company has corrective action plan processes for non-compliant suppliers and ensures remedy is provided to workers in its supply chains who are victims of forced labor. Publicly available allegations of forced labor in a company's supply chains which occurred in the past three years, and how a company has responded to and addressed those allegations, are also assessed as part of this theme.

Average company score

**26/100**

Remedy was among the lowest scoring themes of the benchmark. Companies had much stronger disclosure in relation to corrective action processes than they did in respect of remedial actions for workers in their supply chains.

The majority of companies disclose having a process in place for developing corrective action plans with suppliers. However, only eight out of 40 companies provide detail on this process by disclosing an example or a summary of a corrective action process undertaken by a supplier.

Less than half of companies (16 out of 40) disclose potential consequences for suppliers that fail to implement corrective actions. The most commonly cited consequence is termination of the business relationship with the supplier in question. **Cisco, Hewlett Packard Enterprise, HP,** and **Intel** state that they work with suppliers to improve their capacity before they end the business relationship. Other companies report reducing orders or production volumes with suppliers that fail to implement corrective actions.

Only seven out of 40 companies disclose a remedy process for responding to complaints, or report violations of policies. None outline adequate detail on information such as the timeframes for responding to affected stakeholders or approval procedures. Some companies are developing their approach to remedy: **Ericsson** states that it is working towards providing remedy to victims of human rights abuses according to the UN Guiding Principles on Business and Human Rights and that it has held internal workshops for its employees in collaboration with the NGO Shift to understand the concept of remedy.

Three companies were identified in the benchmark (**Apple, Hewlett Packard Enterprise,** and **Samsung**) that had publicly available allegations of forced labor in their supply chains in the last three years. Only **Hewlett Packard Enterprise** issued a public response specific to the allegation identified, which outlined some steps it had taken as a result. However, it should be noted that 20

allegations were identified across all 40 benchmarked companies; but only three met our criteria for inclusion.<sup>19</sup> Nevertheless, this number of allegations gives an indication of pervasive poor working conditions across the sector.

In relation to those companies that do not have publicly available allegations of forced labor in their supply chains, very few (four out of 37) give detail on outcomes of remedy processes for workers in their supply chains. However, **Intel**, for example, disclosed that where workers' passports were withheld, the passport must be returned and workers must be provided with personal storage for their documents.

## Notable Company Action

### Corrective Actions

**Apple** reported it discovered a case of bonded labor at a subcontractor used by its immediate supplier during an audit. The audit revealed the withholding of workers' passports, unacceptable dormitory rules, and lower than standard meal allowances. Apple states that although it attempted to work with the subcontractor to improve its practices, the subcontractor was unwilling to change. As a result, Apple's supplier stopped sourcing from the subcontractor, and took over some of its workforce. The supplier also created a supply chains responsibility department, and became a member of the Responsible Business Alliance.

### Outcomes of Remedy for Suppliers' Workers

**Taiwan Semiconductor Manufacturing Company** discloses it ensured that recruitment fees totaling \$5.5 million New Taiwan Dollars (NWD) (approximately US\$185,000) were reimbursed to 360 migrant workers in its supply chains, implying average fees paid of more than US\$500 per worker.

## Recommended Company Action

**Remedy Process:** Establish a process of providing remedy to workers in supply chains with clear responsibilities, engagement with affected stakeholders, and timeframes. Disclose examples of outcomes of remedy for suppliers' workers, and evidence that remedial actions taken are satisfactory for affected workers.

<sup>19</sup> See Appendix 2.

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# CONSIDERATIONS FOR INVESTOR ACTION

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KnowTheChain ranks some of the largest publicly listed ICT companies across markets on their efforts to address forced labor in their supply chains. Many global investors are invested in these companies or will be presented with these companies as potential investment opportunities.

Where forced labor risks are not addressed, they can result in legal, reputational, or financial repercussions. For example, in 2015, US marine-services company Signal International LLC had to pay US\$20 million in compensation to former employees who were victims of human trafficking. The company eventually filed for bankruptcy. Two public pension funds, the Teachers' Retirement System of Alabama and the Employees' Retirement System of Alabama, owned more than 47% of Signal, and lost approximately US\$70 million.<sup>20</sup> Lawsuits on forced labor and human trafficking continue to emerge around the world.<sup>21</sup>

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<sup>20</sup> ShareAction (2016), [Forced labour: What investors need to know](#).

<sup>21</sup> Business & Human Rights Resource Centre and Liberty Asia, [Legal Case Map](#), accessed 30 April 2018.

To address exposure to these risks and ensure investments are used as an opportunity to support the realization of the Sustainable Development Goals (SDGs), in particular **SDG 8.7**, investors may wish to integrate KnowTheChain's findings into their investment decision making and active ownership practices. In particular, investors are encouraged to ask companies about their practices regarding **recruitment** and **worker voice**. These themes make the most difference to workers' lives, yet companies have often taken limited, if any, steps on them. Investors should ask companies how they are creating value by reducing business exposure of forced labor. Investors can further ask how companies are working to ensure migrant workers are not exploited, and how they engage with workers in their supply chains to empower them to exercise their labor rights, while ensuring an early-warning system is in place for when abuses occur.

Active investors may want to consider integrating KnowTheChain's findings in their investment decision-making. For example, the US investment manager Caravel Management modeled a scenario where the share price for a company that does not address labor risks in its supply chain would fall from US\$100 to US\$49 due to downtime, lost contracts, higher personnel costs, and victim compensation.<sup>22</sup>

**Active investors** can further engage companies or file shareholder resolutions to affect change. The following resources can be used as tools for engagement:

- **Understanding company practices:** KnowTheChain's [company scorecards provide](#) an analysis of each company's disclosure and performance, in comparison to industry peers. It also identifies a company's compliance with legislation, as well as forward-looking commitments. Where a company was also ranked in 2016, the scorecard provides an overview of changes in company practices over time. The scorecard highlights leading practices and provides three company-specific recommendations for improvement.
- **Understanding what good looks like:** This report provides good practice examples for each theme.
- **Defining expectations:** [KnowTheChain's investor statement](#), which has been developed with the support of investors and is co-sponsored by the Investor Alliance for Human Rights, defines

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<sup>22</sup> PRI (2017) - [ESG integration: How are social issues influencing investment decisions?](#), p. 33.

expectations of global investors representing over \$3 trillion in assets under management for how companies should address forced labor risks in their supply chains as part of broader human rights due diligence, and in line with international frameworks such as the ILO core labor standards and the UN Guiding Principles on Business and Human Rights. The indicators of [KnowTheChain's benchmark methodology](#) provide an overview of steps that global companies should take to address forced labor risks in their supply chains.

**Passive investors** may wish to tilt their portfolios towards higher-scoring companies, or companies with timebound and measurable commitments in place. Passive investors that do not track an entire index, but use a partial replication approach, may further consider excluding companies that continue to score low, and that show no signs of improvement.

Finally, both active and passive investors may wish to publicly demonstrate their commitment to address forced labor by [signing the KnowTheChain Investor Statement](#).

For further information, investors can visit [KnowTheChain's resource section for investors](#) and [sign up to KnowTheChain's quarterly investor newsletter](#).

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## APPENDIX 1 COMPANY SELECTION

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KnowTheChain chose to benchmark the largest global companies in several at-risk sectors, as these companies have a large workforce in their supply chains, as well as significant leverage.

The 40 ICT companies benchmarked by KnowTheChain are publicly traded companies which were selected on the basis of their size (market capitalization) and the extent to which they derive revenues from physical products as opposed to services. Retailers such as Amazon that have a significant amount of revenue from own branded ICT products were also added to the benchmark.

Two of the companies evaluated in KnowTheChain's benchmarks have significant revenues from several product types, and hence, are included in more than one sector benchmark (Walmart and Amazon). This is aligned with the [Corporate Human Rights Benchmark](#), which evaluates companies like Associated British Foods and Walmart to be in both its agricultural and apparel products categories.

KnowTheChain's 2018 ICT benchmark includes six companies from Europe, 14 from Asia, and 20 from North America, as shown in the table on the next page.<sup>22</sup>

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<sup>22</sup> IBM was included in KnowTheChain's 2016 benchmark, but no longer meets the threshold required and was therefore not included in the 2018 benchmark.

<b>Company</b>	<b>Market Cap in US\$ billion</b>	<b>Headquarters</b>	<b>2016 benchmark</b>	<b>Provided additional disclosure</b>
Amazon.com Inc.	699	United States	no	no
Amphenol Corp.	28	United States	no	yes
Analog Devices Inc.	34	United States	no	yes
Apple Inc.	852	United States	yes	sent links
Applied Materials Inc.	56	United States	no	yes
ASML Holding N.V.	87	Netherlands	yes	yes
BOE Technology Group Co. Ltd.	33	China	yes	no
Broadcom Inc.	102	United States	yes	no
Canon Inc.	43	Japan	yes	yes
Cisco Systems Inc.	205	United States	yes	yes
Corning Inc.	27	United States	no	no
Hewlett Packard Enterprise Co.	26	United States	no	yes
Hitachi Ltd.	38	Japan	yes	yes
Hon Hai Precision Industry Co. Ltd. (Foxconn)	55	Taiwan	yes	yes
Hoya Corp.	19	Japan	no	yes
HP Inc.	38	United States	yes	yes
Infineon Technologies AG	33	Germany	no	sent links
Intel Corp.	225	United States	yes	yes
Keyence Corp.	74	Japan	yes	yes
Kyocera Corp.	24	Japan	no	no
Lam Research Corp.	31	United States	no	yes

<b>Company</b>	<b>Market Cap in US\$ billion</b>	<b>Headquarters</b>	<b>2016 benchmark</b>	<b>Provided additional disclosure</b>
Largan Precision Co. Ltd.	18	Taiwan	no	no
Microchip Technology Inc.	22	United States	no	no
Micron Technology Inc.	51	United States	no	yes
Microsoft Corp.	732	United States	yes	yes
Murata Manufacturing Co. Ltd.	31	Japan	yes	yes
Nintendo Co. Ltd.	53	Japan	no	yes
Nokia Corp.	27	Finland	no	yes
NVIDIA Corp.	149	United States	no	yes
NXP Semiconductors NV	41	Netherlands	no	yes
Qualcomm Inc.	101	United States	yes	yes
Samsung Electronics Co. Ltd.	310	South Korea	yes	yes
SK Hynix Inc.	49	South Korea	yes	no
Skyworks Solutions Inc.	18	United States	no	yes
Taiwan Semiconductor Manufacturing Co. Ltd.	227	Taiwan	yes	yes
TE Connectivity Ltd.	36	Switzerland	no	yes
Telefonaktiebolaget LM Ericsson (publ) (Ericsson)	21	Sweden	yes	yes
Texas Instruments Inc.	108	United States	yes	no
Tokyo Electron Ltd.	31	Japan	no	no
Western Digital Corp.	26	United States	no	sent links

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## APPENDIX 2 BENCHMARK METHODOLOGY, METHODOLOGY CHANGES, AND SCORING

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KnowTheChain will review, and where relevant, update its methodology ahead of every benchmark to integrate emerging good practices and respond to the dynamic nature of the issue. Further, KnowTheChain aims to decrease the reporting burden for companies and increase the objectivity of the benchmark by integrating third-party information in addition to corporate disclosure.

The main revisions of the 2018 ICT benchmark methodology include:

1. Looking deeper into the supply chain and focusing on systematic integration of processes across supply chains.
2. Focusing on performance over policies and process (for example, through the integration of forced labor allegations, and by asking for implementation examples or evidence of impact).
3. Aligning with updates of relevant frameworks and initiatives, such as the Corporate Human Rights Benchmark.
4. Strengthening worker voice and recruitment themes.
5. Increasing flexibility on what can be reported (for example, a company has to ensure that workers in its supply chains have

access to effective grievance mechanisms, but those mechanisms can either be provided by the company itself, by the supplier, or by a third party, or group of companies).

Because of these changes in methodology, comparisons are best made at the individual indicator level, or the change in a specific company's score. This report therefore provides some commentary on changes in company practice from 2016, though the majority of analysis is concerned with the status of companies' action on forced labor in 2018.

To paint a greater picture of a company's performance and where it is heading, compliance with the California Transparency in Supply Chains Act, and the UK Modern Slavery Act are assessed, as well as time-bound commitments to address forced labor. Further, companies are given the option to provide additional information on their business model. This information is provided on a company's scorecard, but not included in companies' scores for the benchmark.

Benchmarked companies were given the opportunity to review the research findings, and to disclose additional information. In addition to English language information on each company's own website, KnowTheChain evaluated [additional public disclosure that 27 of the 40 companies provided](#). Further, certain membership levels in the Responsible Business Alliance (RBA), as well as use of RBA's Validated Audit Process for supplier audits were given some credit in the benchmark (where disclosed by the company and confirmed by the RBA).<sup>23</sup>

Lastly, KnowTheChain undertook comprehensive desktop research for allegations of forced labor. KnowTheChain also invited selected stakeholders, such as local and global labor NGOs and trade unions, to submit relevant allegations. KnowTheChain only included allegations that met at least the [threshold of the Corporate Human Rights Benchmark](#), and several of the [forced labor indicators of the International Labour Organization](#).

Each company receives an overall benchmark score, which may range from zero to 100. To determine this score, each of the seven themes is weighted equally (i.e., each theme counts one-seventh

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<sup>23</sup> Note: full points in the benchmark can be achieved without participation in the RBA. For points under the stakeholder engagement indicator element (1.5.2), active engagement in any multi-stakeholder or industry association that addresses forced labor is required.

towards the highest possible benchmark score of 100). Within each theme each indicator is weighted equally, and within each indicator, each indicator element is weighted equally. In some cases, a company may receive partial points towards an indicator element.

**KTC ICT methodology version 2, October 2017.**

Indicator Name	Indicator Description	Indicator Elements
<b>1. Commitment and Governance</b>		
<b>1.1</b>	<b>Commitment</b>	The company publicly demonstrates its commitment to addressing human trafficking and forced labor.
		The company: (1) has publicly demonstrated its commitment to addressing human trafficking and forced labor.
<b>1.2</b>	<b>Supply Chain Standards</b>	The company has a supply chain standard that requires suppliers throughout its supply chains to uphold workers’ fundamental rights and freedoms (as articulated in the ILO Declaration on Fundamental Principles and Rights at Work), including the elimination of forced labor. The standard has been approved by a senior executive, is easily accessible on the company’s website, is regularly updated, and is communicated to the company’s suppliers.
		The company’s supply chain standard: (1) requires suppliers to uphold workers’ fundamental rights and freedoms (those articulated in the International Labour Organization’s Declaration on Fundamental Principles and Rights at Work), including the elimination of forced labor; (2) has been approved by a senior executive; (3) is easily accessible from the company’s website; (4) is updated regularly, following internal review and input from external stakeholders; and (5) is communicated to the company’s suppliers.
<b>1.3</b>	<b>Management and Accountability</b>	The company has established clear responsibilities and accountability for the implementation of its supply chain policies and standards relevant to human trafficking and forced labor, both within the company and at the board level.
		The company: (1) has a committee, team, program, or officer responsible for the implementation of its supply chain policies and standards that address human trafficking and forced labor; and (2) has tasked a board member or board committee with oversight of its supply chain policies and standards that address human trafficking and forced labor.

Indicator Name	Indicator Description	Indicator Elements
1.4	<b>Training</b> The company has training programs in place to ensure that relevant decision-makers within the company and its supply chains are aware of risks related to human trafficking and forced labor and are effectively implementing the company's policies and standards.	The company undertakes programs which include: (1) the training of all relevant decision-makers within the company on risks, policies, and standards related to human trafficking and forced labor; and (2) the training and capacity-building of suppliers on risks, policies, and standards related to human trafficking and forced labor, covering key supply chain contexts.
1.5	<b>Stakeholder Engagement</b> The company engages with relevant stakeholders on human trafficking and forced labor. This includes engagement with policy makers, worker rights organizations, or local NGOs in countries in which its suppliers operate, as well as active participation in one or more multi-stakeholder or industry initiatives.	In the last three years, the company has engaged relevant stakeholders by: (1) providing at least two examples of engagements on forced labor and human trafficking with policy makers, worker rights organizations, local NGOs, or other relevant stakeholders in countries in which its suppliers operate, covering different supply chain contexts; and (2) actively participating in one or more multi-stakeholder or industry initiatives focused on eradicating forced labor and human trafficking across the industry.
<b>2. Traceability and Risk Assessment</b>		

2.1	<b>Traceability</b> The company is taking steps towards responsible raw materials sourcing. It is adopting responsible purchasing practices in the first tier of its supply chains, and provides procurement incentives to first-tier suppliers to encourage or reward good labor practices.	The company discloses: (1) the names and addresses of its first-tier suppliers; (2) the countries of below-first-tier suppliers (this does not include raw material suppliers); (3) the sourcing countries of raw materials at high risk of forced labor and human trafficking; and (4) some information on its suppliers' workforce.
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Indicator Name	Indicator Description	Indicator Elements
<b>2. Traceability and Risk Assessment Cont'd</b>		
<b>2.2</b>	<b>Risk Assessment</b>	The company has a process to assess forced labor risks, and it publicly discloses forced labor risks identified in different tiers of its supply chains.
		The company discloses: (1) details on how it conducts human rights supply chain risk or impact assessments that include forced labor risks, or assessments that focus specifically on forced labor risks; and (2) details on forced labor risks identified in different tiers of its supply chains.
<b>3. Purchasing Practices</b>		
<b>3.1</b>	<b>Purchasing Practices</b>	The company is taking steps towards responsible raw materials sourcing. It is adopting responsible purchasing practices in the first tier of its supply chains, and provides procurement incentives to first-tier suppliers to encourage or reward good labor practices.
		Purchasing practices and pricing may both positively impact labor standards in the company's supply chains, and increase risks of forced labor and human trafficking. The company: (1) is taking steps towards responsible raw materials sourcing; (2) is adopting responsible purchasing practices in the first tier of its supply chains; and (3) provides procurement incentives to first-tier suppliers to encourage or reward good labor practices (such as price premiums, increased orders, and longer-term contracts).
<b>3.2</b>	<b>Supplier Selection</b>	The company assesses risks of forced labor at potential suppliers prior to entering into any contracts with them.
		The company: (1) assesses risks of forced labor at potential suppliers prior to entering into any contracts with them.
<b>3.3</b>	<b>Integration into Supplier Contracts</b>	The company integrates supply chain standards addressing forced labor and human trafficking into supplier contracts.
		The company: (1) integrates supply chain standards addressing forced labor and human trafficking into supplier contracts.

Indicator Name	Indicator Description	Indicator Elements
<b>3. Purchasing Practices Cont'd</b>		
<b>3.4</b>	<b>Cascading Standards through the Supply Chain</b>	<p>The company extends its supply chain standards beyond its first tier by requiring that its first-tier suppliers ensure that their own suppliers implement standards that are in-line with the company's standards.</p> <p>The company:</p> <p>(1) requires its first-tier suppliers to ensure that their own suppliers implement standards that are in-line with the company's supply chain standards addressing forced labor and human trafficking.</p>
<b>4. Recruitment</b>		
<b>4.1</b>	<b>Recruitment Approach</b>	<p>The company has a policy that requires direct employment in its supply chains, and requires employment and recruitment agencies in its supply chains to uphold workers' fundamental rights and freedoms. The company discloses information on the recruitment agencies used by its suppliers.</p> <p>The company:</p> <p>(1) has a policy that requires direct employment in its supply chains;</p> <p>(2) requires employment and recruitment agencies in its supply chains to uphold workers' fundamental rights and freedoms (those articulated in the International Labour Organization's Declaration on Fundamental Principles and Rights at Work), including the elimination of forced labor; and</p> <p>(3) discloses information on the recruitment agencies used by its suppliers.</p>
<b>4.2</b>	<b>Recruitment Fees</b>	<p>In its relevant policies or standards, the company requires that no fees be charged during any recruitment process in its supply chains—the costs of recruitment should be borne not by the worker but by the employer ("Employer Pays Principle"). In the event that it discovers that fees have been paid by workers in its supply chains, the company ensures that such fees are reimbursed to the workers.</p> <p>The company:</p> <p>(1) requires that no worker in its supply chains should pay for a job—the costs of recruitment should be borne not by the worker but by the employer ("Employer Pays Principle"); and</p> <p>(2) ensures that such fees are reimbursed to the workers, in the event that it discovers that fees have been paid by workers in its supply chains.</p>
<b>4.3</b>	<b>Monitoring and Ethical Recruitment</b>	<p>The company ensures employment and/or recruitment agencies used in its supply chains are monitored to assess and address</p> <p>The company:</p> <p>(1) ensures employment and/or recruitment agencies used in its supply chains are monitored to assess and address risks of</p>

Indicator Name	Indicator Description	Indicator Elements
<b>4. Recruitment</b>		
	risks of forced labor and human trafficking, and provides details of how it supports ethical recruitment in its supply chains.	forced labor and human trafficking; and (2) provides details of how it supports ethical recruitment in its supply chains.
<b>4.4 Migrant Worker Rights</b>	To avoid the exploitation of migrant workers in its supply chains, the company ensures migrant workers understand the terms and conditions of their recruitment and employment, and also understand their rights. It further ensures its suppliers refrain from restricting workers' movement, and that migrant workers are not discriminated against, and not retaliated against, when they raise grievances. The company provides evidence of how it works with suppliers to ensure migrant workers' rights are respected.	The company: (1) ensures migrant workers understand the terms and conditions of their recruitment and employment, and also understand their rights; (2) ensures its suppliers refrain from restricting workers' movement, including through the retention of passports or other personal documents against workers' will; (3) ensures migrant workers are not discriminated against, and not retaliated against, when they raise grievances; and (4) provides evidence of how it works with suppliers to ensure migrant workers' rights are respected.
<b>5. Worker Voice</b>		
<b>5.1 Communication of Policies</b>	The company ensures its human trafficking and forced labor policies and standards are available to supply chain workers in their native languages, and that its human trafficking and forced labor policies and standards are communicated to workers in its supply chains.	The company ensures: (1) its policies and standards, which include human trafficking and forced labor, are available in the languages of its suppliers' workers; and (2) its human trafficking and forced labor policies and standards are communicated to workers in its supply chains.
<b>5.2 Worker Voice</b>	The company works with relevant stakeholders to engage with and educate workers in its supply chains on their labor rights. To ensure scalability and effectiveness, the company ensures that there are worker-to-worker education initiatives on labor rights in its supply chains, and it provides evidence of	The company: (1) works with relevant stakeholders to engage with and educate workers in its supply chains on their labor rights; (2) ensures that there are worker-to-worker education initiatives on labor rights in its supply chains;

Indicator Name	Indicator Description	Indicator Elements
<b>5. Worker Voice Cont'd</b>		
	the positive impact of worker engagement in its supply chains.	<p>(3) provides evidence of the positive impact of worker engagement in its supply chains; and</p> <p>(4) provides at least two examples of worker engagement initiatives covering different supply chain contexts.</p>
<b>5.3</b>	<p><b>Freedom of Association</b></p> <p>To support collective worker empowerment, the company works with suppliers to improve their practices in relation to freedom of association and collective bargaining, and with local or global trade unions to support freedom of association in its supply chains. Where there are regulatory constraints on freedom of association, the company ensures workplace environments in which workers are able to pursue alternative forms of organizing.</p>	<p>The company:</p> <p>(1) describes how it works with suppliers to improve their practices in relation to freedom of association and collective bargaining;</p> <p>(2) works with local or global trade unions to support freedom of association in its supply chains;</p> <p>(3) ensures workplace environments in which workers are able to pursue alternative forms of organizing (e.g., worker councils or worker-management dialogues) where there are regulatory constraints on freedom of association; and</p> <p>(4) provides at least two examples covering different supply chain contexts of how it improved freedom of association for supply chain workers.</p>
<b>5.4</b>	<p><b>Grievance Mechanism</b></p> <p>The company ensures a formal mechanism to report a grievance to an impartial entity regarding labor conditions in the company's supply chains is available to its suppliers' workers and relevant stakeholders. The company ensures that the mechanism is effective across its supply chains.</p>	<p>The company:</p> <p>(1) ensures a formal mechanism to report a grievance to an impartial entity regarding labor conditions in the company's supply chains is available to its suppliers' workers and relevant stakeholders;</p> <p>(2) ensures that the existence of the mechanism is communicated to its suppliers' workers;</p> <p>(3) ensures that workers or an independent third party are involved in the design</p>

Indicator Name	Indicator Description	Indicator Elements
<b>5. Worker Voice Cont'd</b>		
		<p>or performance of the mechanism, to ensure that its suppliers' workers trust the mechanism;</p> <p>(4) discloses data about the practical operation of the mechanism, such as the number of grievances filed, addressed, and resolved, or an evaluation of the effectiveness of the mechanism; and</p> <p>(5) provides evidence that the mechanism is available and used by workers below tier one in its supply chains, or by relevant stakeholders in key supply chain contexts.</p>
<b>6. Monitoring</b>		
<b>6.1</b>	<b>Auditing Process</b>	<p>The company audits its suppliers to measure compliance with applicable regulations and with its supply chain standards. The process includes non-scheduled visits, a review of relevant documents, interviews with workers, and visits to associated production facilities and related worker housing. The company also audits suppliers below the first tier.</p>
		<p>The company has a supplier audit process that includes:</p> <p>(1) non-scheduled visits;</p> <p>(2) a review of relevant documents;</p> <p>(3) interviews with workers;</p> <p>(4) visits to associated production facilities and related worker housing; and</p> <p>(5) supplier audits below the first tier.</p>
<b>6.2</b>	<b>Audit Disclosure</b>	<p>The company publicly discloses information on the results of its audits. This includes the percentage of suppliers audited annually, the percentage of unannounced audits, the number or percentage of workers interviewed, information on the qualification of the auditors used, and a summary of findings, including details regarding any violations revealed.</p>
		<p>The company discloses:</p> <p>(1) the percentage of suppliers audited annually;</p> <p>(2) the percentage of unannounced audits;</p> <p>(3) the number or percentage of workers interviewed during audits;</p> <p>(4) information on the qualification of the auditors used; and</p> <p>(5) a summary of findings, including details regarding any violations revealed.</p>

Indicator Name	Indicator Description	Indicator Elements
<b>7. Remedy Cont'd</b>		
<b>7.1</b> <b>Corrective Action Plans</b>	<p>The company has a process to create corrective action plans with suppliers found to be in violation of applicable regulations</p> <p>and/or the company's standards, with the goal of improving conditions and achieving compliance. The company's corrective action plans include potential actions taken in case of non-compliance; a means to verify remediation and/or implementation of corrective actions; and potential consequences if corrective actions are not taken.</p>	<p>The company's corrective action plans include:</p> <p>(1) potential actions taken in case of noncompliance, such as stop-work notices, warning letters, supplementary training, and policy revision;</p> <p>(2) a means to verify remediation and/or implementation of corrective actions, such as record review, employee interviews, spot checks, or other means;</p> <p>(3) potential consequences if corrective actions are not taken; and</p> <p>(4) a summary or an example of its corrective action process in practice.</p>
<b>7.2</b> <b>Remedy Programs and Response to Allegations</b>	<p>The company has a process to provide remedy to workers in its supply chains in cases of human trafficking and forced labor. If no allegation regarding forced labor in the company's supply chains has been identified, the company discloses examples of outcomes for workers of its remedy process.</p> <hr/> <p>If one or more allegations regarding forced labor in the company's supply chains have been identified, the company discloses a public response to the allegation, and outcomes of the remedy process, including evidence that the remedy or remedies are satisfactory to the victims or groups representing the victims.</p>	<p>A. If no allegation regarding forced labor in the company's supply chains has been identified in the last three years, the company discloses:</p> <p>(1) a process for responding to complaints and/or reported violations of policies and standards; and</p> <p>(2) at least two examples of outcomes for workers of its remedy process in practice, covering different supply chain contexts.</p> <hr/> <p>B.1. If one or more allegations regarding forced labor in the company's supply chains have been identified in the last three years, the company discloses:</p> <p>(1) a process for responding to the complaints and/or reported violations of policies and standards;</p> <p>(2) a public response to the allegation, which covers each aspect of each allegation;</p>

Indicator Name	Indicator Description	Indicator Elements
<b>7. Remedy</b>		
		<ul style="list-style-type: none"> <li>(3) outcomes of the remedy process in the case of the allegation(s); and</li> <li>(4) evidence that the remedy or remedies are satisfactory to the victims or groups representing the victims.</li> </ul>
	<p>If one or more allegations regarding forced labor in the company's supply chains have been identified, and the company denies the allegation, the company discloses a public response to the allegation, a description of what actions it would take to prevent and remediate the alleged impacts, and that it engages in a dialogue with the stakeholders reportedly affected in the allegation, or requires its supplier(s) to do so.</p>	<p>B.2. If one or more allegations regarding forced labor in the company's supply chains have been identified in the last three years, and the company denies the allegation, the company discloses:</p> <ul style="list-style-type: none"> <li>(1) a process for responding to the complaints and/or reported violations of policies and standards;</li> <li>(2) a public response to the allegation, which covers each aspect of each allegation;</li> <li>(3) a description of what actions it would take to prevent and remediate the alleged impacts; and</li> <li>(4) that it engages in a dialogue with the stakeholders reportedly affected in the allegation, or requires its supplier(s) to do so.</li> </ul>



## ABOUT KNOWTHECHAIN

KnowTheChain – a partnership of Humanity United, the Business & Human Rights Resource Centre, Sustainalytics, Verité, and Thomson Reuters Foundation – is a resource for businesses and investors who need to understand and address forced labor abuses within their supply chains. It benchmarks current corporate practices, develops insights, and provides practical resources that inform investor decisions and enable companies to comply with growing legal obligations while operating more transparently and responsibly.

[knowthechain.org](https://knowthechain.org)

**Humanity United** is a foundation dedicated to bringing new approaches to global problems that have long been considered intractable. It builds, leads, and supports efforts to change the systems that contribute to problems like human trafficking, mass atrocities, and violent conflict. Humanity United is part of The Omidyar Group, a diverse collection of organizations, each guided by its own approach, but united by a common desire to catalyze social impact.

[humanityunited.org](https://humanityunited.org)

**Sustainalytics** is an independent ESG and corporate governance research, ratings, and analysis firm supporting investors around the world with the development and implementation of responsible investment strategies. [sustainalytics.com](https://sustainalytics.com)

**Business & Human Rights Resource Centre** is a non-profit that tracks the human rights conduct of more than 7,000 companies worldwide. [business-humanrights.org](https://business-humanrights.org)

**Verité** is a global, independent, non-profit organization that provides consulting, training, research, and assessment services with a mission to ensure that people worldwide work under safe, fair, and legal working conditions. As such, it may work with some of the companies covered in this report. Verité was not involved in researching or evaluating company disclosures. [verite.org](https://verite.org)

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