

# We believe in Digital Sustainability

The Digital Sustainability Index. A report developed in partnership with The Centre of Digital Enterprise (CODE) at the University of Auckland Business School.



# We believe in...

Ambitious goals.  
Innovation.  
Shared Value.  
**Business Transformation through Technology.**  
The Power of Optimism.

**We believe in making a meaningful difference.**  
Every. Single. Day.

We believe in **resilient businesses** with a **strong digital core**.  
And **collaborating across ecosystems** to drive inclusivity and  
prosperity for the greater good.

**We believe** that clean air, clean water, food, shelter, education,  
well-being and the right to work should be **accessible to everyone**.

We believe that it's time to **tackle inequality**.

We believe in a whole new approach to **getting ourselves future fit**.  
A way that values collective action to **benefit our people and our planet**.

We believe in the power of **innovation and digital technology**  
to **create better outcomes**:

**Socially.**  
**Environmentally.**  
**Economically.**

**Digital Sustainability.**

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# Note from the creators of the Digital Sustainability Index

Decades ago, academics, scientists, futurists, and government agencies made some bold predictions about what the world would look like in the year 2020. And while they saw technological advances that would have seemed nothing short of science fiction, they also saw a future of widening gaps in minimum social and economic equity, resource depletion and increasing global temperatures.



*“The ‘Digital Sustainability Index’, is the first of its kind in the world. Co-created by TCS and The University of Auckland, we aim to start meaningful conversations on the convergence of digital transformation and sustainability for future-fit businesses as well as our people and planet. At TCS, we believe together we can take the giant strides needed to envision new paradigms that will build a better world for future generations through the power of digital sustainability.”*

**Girish Ramachandran**

However, nobody could have predicted the speed with which digital transformation would be adopted as part of the Covid-19 pandemic, transforming the business and the socio-economic landscape forever.

In parallel, organisations and governments were focused on the escalating scientific knowledge base on climate change impact and the ‘decade of action’ to deliver transformative action on our world most critical to-do list – the Sustainability Development Goals (SDGs). There has been a growing appreciation amongst all stakeholders that we are at a tipping point. Leading corporates added focus on sustainability, clearly understanding this lens would make them stronger, more responsive, relevant and more resilient for the future.

The combination of these elements over the last three years have truly brought to fore, the need to build digital at the core, along with sustainability, in every business strategy.

We believe digital transformation is one of the keys to building social, economic and environmental resilience. Purpose-led change combined with technologies available today can help accelerate the journey from intent to action for our people, our planet and our prosperity.

With this belief, TCS partnered with the Centre of Digital Enterprise (CODE) at the University of Auckland Business

School to raise awareness of the relationship between digital strength and sustainability in businesses. We wanted to better understand the crucial role that technology can play in helping transforming companies and governments along with delivering value to the communities they serve and natural environments they operate in.

By having a better understanding of how technology can positively impact business outcomes, we can chart pathways that can deliver a unique competitive advantage and create longer term value for all stakeholders.

The world-first Digital Sustainability Index (DSI), tracks the adoption and leverage of digital technologies by enterprises along with their social and environmental objectives. It also evaluates, and uncovers the factors critical to the pursuit of sustainable digital solutions. We share the same belief that corporate sustainability extends to the triple bottom line of people, planet and profit and, by partnering together, we hope to enable an ecosystem of greater consciousness and collective action.



*“Never has the impact of technology on the community and sustainable innovation been more relevant and more necessary. The Centre of Digital Enterprise at the University of Auckland Business School is committed to developing tools and frameworks that harness the power of technology to address sustainability challenges.”*

**Ilan Oshri**

We are excited about the Digital Sustainability Index and the impact it will have across the Asia Pacific – and beyond. We hope it will inspire you to pursue greater purpose-led, digital sustainability at the core of your organisation...as we have with ours.

**Girish Ramachandran**

President TCS Asia Pacific

**Ilan Oshri**

Director, Centre of Digital Enterprise,  
University of Auckland Business  
School, New Zealand



# Why this report is important for **our future?**

Digital Sustainability can deliver a competitive advantage and be a core belief that is valued by every organisation. Digital can help us reimagine different outcomes, revitalise the planet, create transformational ecosystems, address the gap of inequality and help us with our journey to a more sustainable and resilient future. The multiplication effect that results when sustainability is embedded at the heart of the digital core is limitless.

By spending a few minutes reading this report, you will have a better understanding of:

- The essential role that digital will play to deliver sustainability outcomes and how the digital core is helping both, transform businesses, and enable the success of sustainability goals and targets
- How organisational motivations are affecting sustainability progress and the role of the board and executives in driving changes
- Technological factors that are leading to successfully leveraging digital assets, infrastructure, and tools for sustainable performance within organisations
- How to capture the value of Digital Sustainability and harness the ecosystem as an accelerator for Digital Sustainability





A silhouette of a person standing with their back to the camera, looking out over a landscape at sunset. The sun is low on the horizon, creating a bright orange and yellow glow that silhouettes the person's head and shoulders. The background shows a blurred horizon line with some trees or bushes.

# What is Digital Sustainability and why do we need it now more than ever?

# Digital Sustainability defined

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*The art of creating, using, and governing digital resources to maximise their value for business and society today...and in the future. Digital Sustainability looks at the contribution of a company's digital assets to sustainability across social, environmental, and financial outcomes.*

## Global issues that will challenge the way we live, work, play

At the recent COP 26 Summit in Glasgow, UN Secretary-General Antonio Guterres implored, "We must listen – and we must act – and we must choose wisely. On behalf of this and future generations, I urge you: choose to safeguard our future and save humanity."

There's no denying that the world is beset with a myriad of systemic challenges. Not the least of these is global warming, with rising temperatures causing entire ecosystems to collapse, creating millions of climate refugees.

And while climate change is undoubtedly a major issue, there are numerous other critical priorities that need to be addressed such as waste going to landfill, food and water security, energy accessibility, water and air pollution, natural resource depletion, biodiversity loss, as well as social, health and wealth inequalities. In fact, in the 2022 World Economic Forum Global Risk Report, societal risks represent three of the global top 10 most severe risks in the next 10 years – societal cohesion erosion, livelihood crises along with climate action failure, extreme weather and biodiversity loss, complete the top five.

On top of this, Covid-19 threatens to reverse progress on reducing poverty and inequity along with many other UN Sustainable Development Goals.

*“Along with labour market imbalances, protectionist policies and widening disparities in education and skills, the economic fallout from the pandemic risks splitting the world into divergent trajectories.”*

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World Economic Forum Global Risk Report 2021

These pressing challenges demand our full attention and commitment. For us to successfully thrive through an equitable and fair recovery and transition we will require a paradigm shift in the way we produce, consume, work, live, play as well as how we measure value. Conscious decision-making anchored by the future sustainability of our planet and people is crucial at business, personal and government levels to ensure we have "enough for all, forever." (Reference: Charles Hopkins – Journal).

*“We cannot choose between growth and sustainability – we must have both.”*

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Paul Polman

Businessman and Vice-Chair of the UN Global Compact

## Digital has the power to positively change the world

The past decade has seen unprecedented digital transformation taking place across the world, as more and more businesses and organisations establish a strong digital core. This transformation accelerated during the pandemic, as companies scrambled to adapt and pivot.

The boom in cloud, communication and workplace collaboration software has enabled business to remain operational amid Covid-19 in ways that would not have been possible even a decade ago. Digital has enabled us to develop solutions that not only streamline business but also make our lives more productive and safer. Just consider for moment how technology has been a tool for stronger inclusion, moving to contactless delivery, deepening contact tracing and developing vaccines in record time.

*“Getting Australian businesses to embrace digital innovation will make every sector more resilient, agile and productive.”*

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Karen Andrews

Former Minister for Industry, Science and Technology

Digital also gives us enormous potential to deliver solutions to address systemic societal and environmental challenges at scale. Digital can help us reimagine different outcomes, revitalise the planet, create meaningful ecosystems, address the inequality gap and level out playing fields. It can become a major part of the solution if we work together across our more traditional boundaries.

**This solution is what we call: Digital Sustainability**

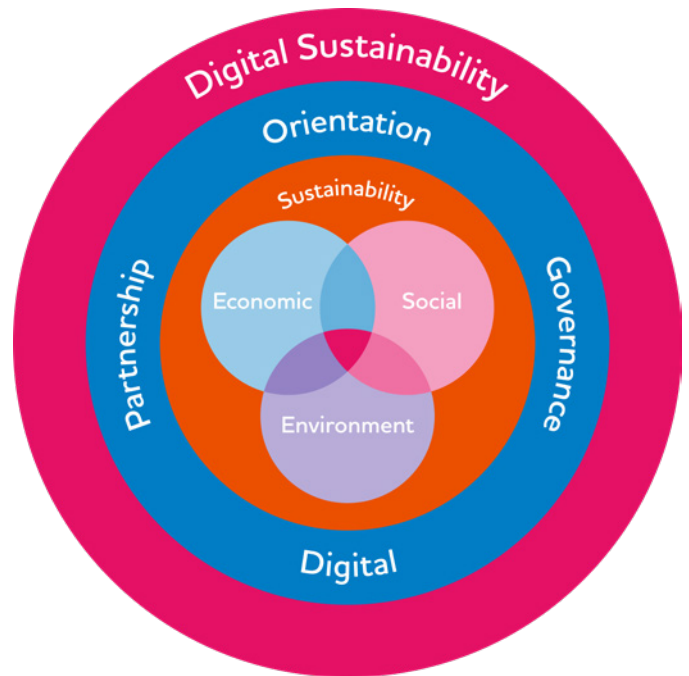


Digital Sustainability: means that this same digital core that is helping transform operational cost optimisation, customer centricity and differentiation, is becoming a key enabler to organisations meeting their sustainability goals and targets. And so, we have digital applications enabling financial inclusion; digital tools supporting conservation; digital platforms and data driving more sustainable agriculture; digital communities supporting the under-served with health access, and many more.

Today, it is imperative that business performance is not simply a measure of revenue growth or market value - that approach won't create the longer-term outcomes we need for all stakeholders. New approaches that bring together economic, environmental and societal targets, measures and solutions enabled by Digital are required by organisations of all types and sizes.

*“Big problems require big solutions. Thankfully we already have the solution – the transition to a digitally sustainable planet. And we already have the technology to make it happen. The question is, do we have the drive and the willpower?”*

Girish Ramachandran  
President, TCS Asia Pacific



## The following examples outline where multi-stakeholder collaboration have delivered digital solutions that enable positive sustainability outcomes



### Hot in the city? Clever boilers powering profit and sustainability

Boilers play a critical role in thermal power plants. The three main goals for a boiler engineer are operating the boiler at its maximum efficiency, ensuring safe operation of the boiler, and keeping the emissions within the regulatory limits. Developing a digital twin for these coal-fired boilers combining artificial intelligence, physics of the phenomena involved, and domain knowledge of operating the boilers, has helped reduce both emissions and the cost of power production.



### Sensitive sensors helping seniors to live independently

SHINESeniors, a collaborative, multistakeholder, public-private partnership project, designed and deployed monitoring and assistive technologies at Housing Development Board (HDB) apartments in Singapore. It combines sensor-based Internet of Things (IoT) technology with data analytics to help improve the quality of life for our elderly communities by enabling independence in their own homes using a community caregiver ecosystem by using community caregiver ecosystem to provide a last-mile human touch. By using community assistance and not the healthcare system, SHINESeniors helps the elderly control costs significantly.





## A supply chain working towards zero emissions

One of the largest CPG companies in the world is well on its way to achieving net zero by 2050. They deployed a Greenhouse Performance System (GPS); a global system for better tracking and management of its supply chain carbon emissions to meet its climate pledge and reduce operational expenses around offsets and carbon taxes. A comprehensive data management framework powers the platform that integrates data from the entire supply chain, calculates emission footprints, and sums up the performance and progress through an executive dashboard. The organisation is expected to significantly reduce carbon footprint and offset costs by 10-20%, estimated to be US \$100M+ over 5 years.



## A blockchain based solution to a high-flying business

A global diversified industrial manufacturer launched a B2B marketplace for re-manufactured parts in the aviation industry. In an industry such as aviation, the provenance of used parts for chain of custody, useful life utilisation, trust in inventory, and price availability are critical for efficient and economic reuse of parts. A blockchain-based solution helped build trust in this B2B marketplace, avoided ghost listings, and improved adoption of re-manufactured parts, providing the foundation for a circular economy.



## Charity made easy, giving for people and the planet

A charity organisation in Australia increased its impact by making it easy for their customers to donate their reusable household items and locate the nearest drop-off location. Customers can also plug the items they are donating into an energy and emissions calculator to understand the impact of their actions, diverting waste from landfill, and keeping household items in circulation.



## Digital farming for sustainable agriculture

An award winning 'Digital Farm' initiative to reduce crop emissions. The initiative included agronomic advisory, crop nutrition, along with knowledge, and digital farming tools to reduce farm emissions and improve yield. This improved efficiency and sustainability of food production at scale while also improving farmer livelihoods.



A photograph of two men, one older with a mustache and one younger, looking at a laptop together outdoors. The image has a blue and green color overlay.

# Now let's build the global conversation

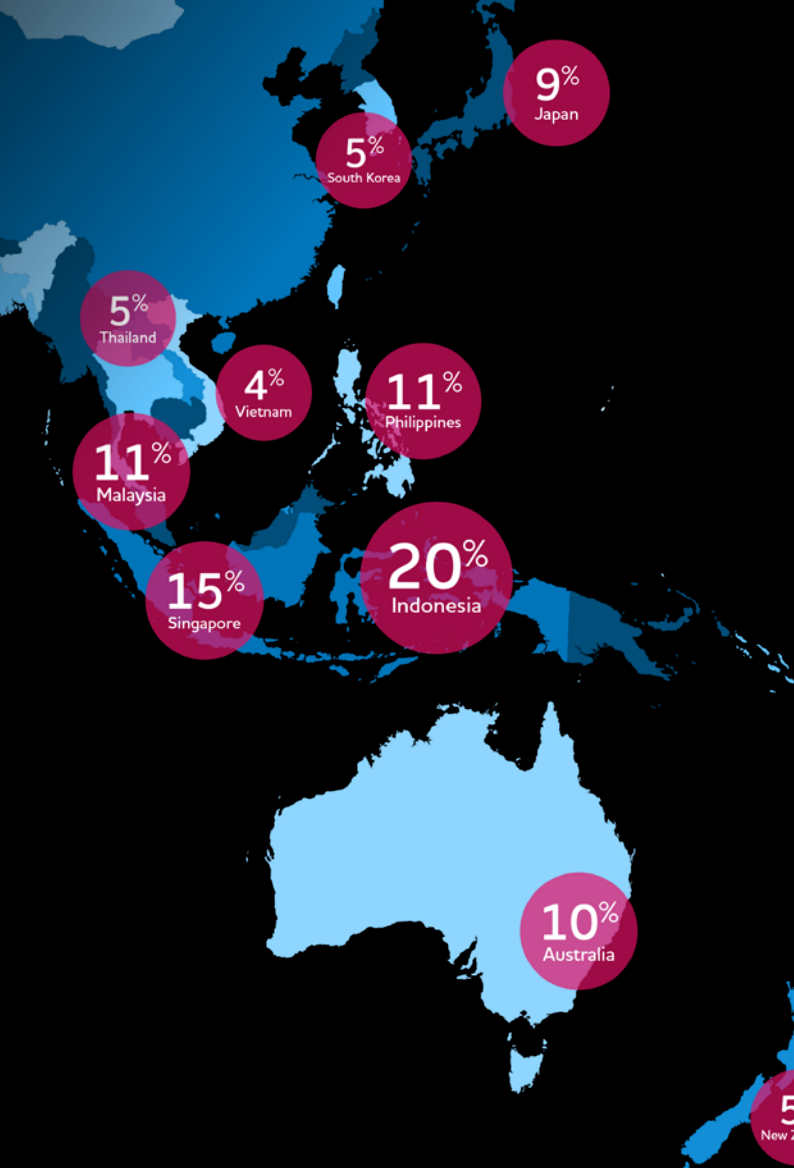
Considering the essential role that digital will play to deliver sustainability outcomes, today and in the future, Tata Consultancy Services (TCS) and the University of Auckland have collaborated to create a world-first framework and index to help inform the best practice capabilities demonstrated by leaders: the Digital Sustainability Index.

The DSI study and report aims to communicate the importance and value organisations place on using a sustainability lens to guide their digital transformation.

The report covers themes such as how Digital Sustainability can deliver a competitive advantage, and the influence of regulators and boards when it comes to driving Digital Sustainability. It also unpacks the different approaches and attitudes to Digital Sustainability across different sectors, industries and geographies.

By sharing our knowledge, experience and insights in the development of a robust SI, we can kickstart a global conversation to consciously leverage technology and innovation for better business and sustainability linked outcomes.

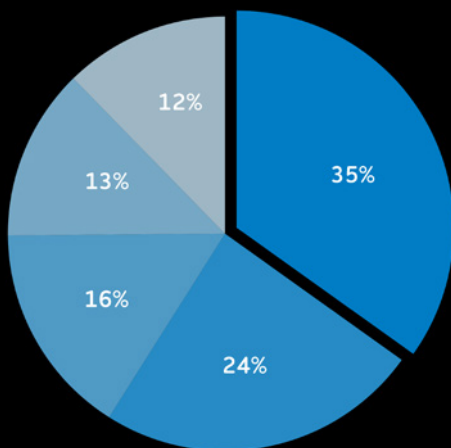
**However, before we look at the findings of the report, let's look at how we created it...**



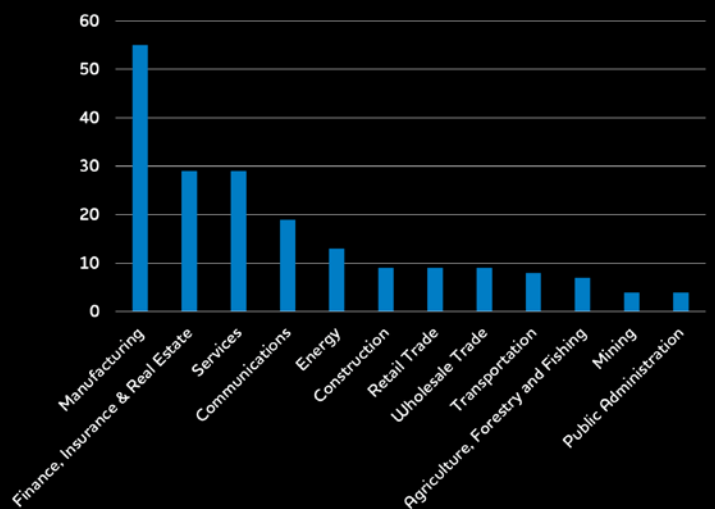
# Digital Sustainability around Asia-Pacific

The responses which were used to create a world-first Digital Sustainability Index (DSI) to measure how ready a company is to achieve its sustainability goals, by deploying digital systems and resources are: country, sector and company size breakdown.

Breakdown by company size



Breakdown by sector %





# The search for insights begins

Technological advancements have not only led to business transformation and successes, but also bring immense potential to support the advancement of solutions for systemic societal and environmental challenges at scale.

Our goal was to execute a piece of research that has the power to identify and communicate how digital and sustainability work together to create positive impact. We collaborated with the team of leading researchers from the Centre of Digital Enterprise (CODE) at the University of Auckland Business School, to help us agree on the most important factors that characterise leading companies and demonstrate commitment and excellence.

In developing the Digital Sustainability Index, we focused on the four significant themes that would enable us to uncover crucial insights around Digital Sustainability.



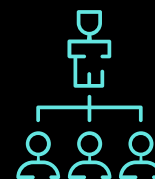
**Orientation**  
The drivers to pursue digital sustainability



**Digital**  
The digital maturity of the business



**Partnerships**  
Ecosystem of partners and enablers



**Governance**  
The in-house governing mechanisms involved in digital sustainability

Orientation	Digital	Partnerships	Governance
What's driving change? We looked at the motivational forces behind the pursuit of Digital Sustainability.	How digitally mature is the company? How does it respond and adapt to disruptive technological trends?	Teaming up. What is the company approach to acquiring capabilities from the market?	Taking charge. We considered the systems and processes by which the company is controlled and operates, and how that related to Digital Sustainability.
What drives a company to work towards a Digital Sustainability future? We examined the motivational forces that encourage corporate sustainable behaviour, such as the economic and market drivers; and the engagement of multiple stakeholders including customers, employees, and communities. Other motivations include regulatory compliance, capital availability, and supplier preferences. Risk management and brand positioning were also considered.	We looked at a range of digital parameters, including the digital resources, artefacts and knowledge that are utilised in business solutions. We also probed the digital innovation capacity of the company and looked at its maturity when it comes to digital capabilities. We asked about the adoption of emerging technologies and which digital strategies were being used to create value.	What is the company's approach to partnerships and specialist providers to boost Digital Sustainability capabilities? What are the in-house capabilities and spend? Who are the most valued partners?	What are the processes, structures, and activities in place to ensure operational and strategic objectives are achieved? We looked at the management of innovation when it comes to ideas around sustainable strategies, as well as the structures that enable contribution to better outcomes for our society and the environment.



# The Survey

Based on the framework developed, we surveyed business leaders across the Asia Pacific to ascertain their Digital Sustainability readiness. The survey responses were used to create a world-first Digital Sustainability Index (DSI) to assess how advanced a company is in deploying digital resources to achieve its sustainability goals.

We targeted C-level executives such as the Sustainability Officer, Chief Technology Officer, Chief Digital Officer as well as other key decision makers responsible for digital, sustainability and strategy functions.

With 195 surveys completed by companies in Australia, New Zealand, Singapore, Malaysia, Indonesia, Thailand, Philippines, Vietnam, South Korea, and Japan, the Digital Sustainability findings are insightful. The respondent companies span 12 industries and annual revenues of US\$25m to >US\$10Bn – the diversity of respondents demonstrates the comprehensiveness of these findings. The DSI will prove to be an important tool to identify best practices that help enable a better future for all.



# Digital Sustainability, the regional insights

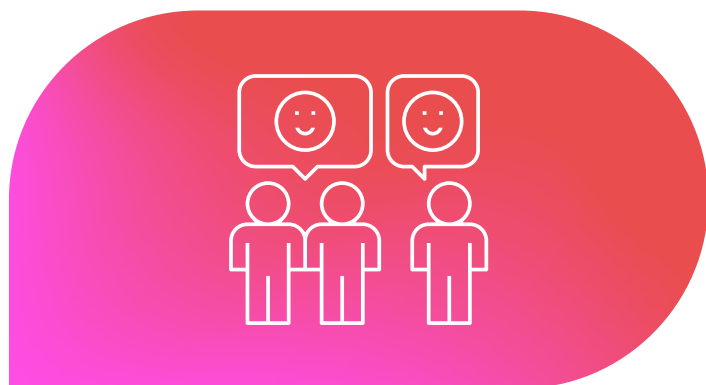




It is well accepted that no single entity can address the needs of sustainability led transition and that we must work together to share knowledge, innovations and best practices. Just as digital is an enabler of transformation, we believe there is an opportunity to leverage digital to accelerate sustainable outcomes and to understand how organisations might create,

use, and regulate digital transformation, innovation, and resources to deliver value for our society today and in the future – hence the need to understand 'Digital Sustainability'. This need drove the development of the Digital Sustainability Index (DSI). This section unpacks our key findings.

## Embedding sustainability at the core of business will amplify opportunities for growth and build positive outcomes



More than **87%** of all respondents agree or strongly agree that Digital Sustainability can deliver a competitive advantage and is a central value of their organisation.



Overall economic objectives were given a slightly higher importance than environment and social but priorities varied across country and sector.



Respondents across sector, country and company size see Regulators and the Board as the strongest drivers of change.



**98%** of respondents believe the use of digital resources, systems and platforms to address sustainability outcomes will either remain the same or increase in the next 36 months.



**80%** of respondents believe their reputation in the market has improved as a result of digital sustainability initiatives.



**70%** of countries perceive lack of in-house knowledge is holding them back on Digital Sustainability pursuits.



**80%** of countries perceive a lack of clear ROI as an inhibitor.



**87%** of the respondents are looking for new strategic partners for Digital Sustainability, demonstrating the demand and need to collaborate with innovators or specialist partners to deliver win – win outcomes.

## Digging deeper. The key insights.

The DSI focuses on organisations evaluating different elements of Digital Sustainability in their business. The Index explores four key areas: orientation, digital usage, partnerships & ecosystems, and governance.

In a study this large, there were naturally hundreds of insights to be gained. However, the importance our respondents afforded Digital Sustainability was overwhelmingly supportive – they clearly saw the value. We are pleased to report that this holds true across all sectors, countries, and company sizes – sectors where the majority completely agreed to responses were mining, manufacturing, communications, retail, and wholesale trade.



# 1. Orientation

What are the motivational drivers that encourage the pursuit of corporate sustainable behaviour and Digital Sustainability? We asked respondents to share their perspectives on whether Digital Sustainability had created a competitive advantage and was seen as a central value. We also wanted to know if there were Digital Sustainability goals worth striving for and whether individuals identified with their organisation's actions.

Of all respondents agreed **87%** or strongly agreed with the belief that Digital Sustainability can deliver a **clear competitive advantage**, is a central value of their organisation, and is demonstrated in goals and in actions personally important to them. This was consistent across company size, country and sector.

Respondents from Thailand are the strongest believers that the use of Digital Sustainability has improved their brand. While those from Singapore, Japan and South Korea are positive about the reputational impact, they also indicated the greatest variability in responses.

## Regulators and boards are the leading motivators

The successful pursuit of Digital Sustainability requires a multi-stakeholder approach. The biggest groups influencing Digital Sustainability are regulators and boards, followed by suppliers, customers and investors. Finance, Insurance and Real Estate shared that most influence was coming from the board whereas Agriculture prioritised regulators as the primary drivers.

While many agreed on the importance of investors in driving change surprisingly, 27% of respondents were either neutral or disagreed on their role in change – the biggest variance seen across the identified drivers.

82% agree that Boards are the main motivators, 81% say Regulators and 73% say Investors.



82% Boards



81% Regulators



73% Investors

## Decision makers affirmed a balanced approach

Corporates successfully pursuing Sustainability need to balance economic, social and environmental impacts over the longer term. It was affirming to see Economic, Environment, and Social all being given similar importance with minimal variance in overall responses. Responses suggested evidence of a more purpose-led business model evolving, where decision makers believe you can do well economically, and also do good for society and the planet.

## Different countries have different priorities

Environmental focus is highest in Australia and Singapore, whereas, social was the highest factor for Thailand, followed by Malaysia. For corporations with over 10,000 employees, environment and economy have equal focus, followed by social. Environmental focus is highest in Australia and Singapore, whereas, social was the highest factor for Thailand, followed by Malaysia.



# Key focus differs across sectors

For Construction, Public Administration and Transportation sectors, environment is the biggest focus. While social is the greatest focus for Agriculture, Forestry and Fishing sectors. Overall, economy remains the primary focus across most sectors including Communications, Energy, Finance, Real Estate, Retail Trade, Services, Wholesale Trade, Manufacturing, Mining and Insurance; but the difference appears minor.

## Key focus areas across sectors and geographies/countries

Priorities	Environmental	Economic	Social	Priorities	Environmental	Economic	Social
Agriculture, forestry & Fishing	2	3	1	Australia	2	1	3
Communications				Singapore			
Construction				Malaysia			
Energy				Indonesia			
Finance, Insurance & Real Estate				Philippines			
Manufacturing				Thailand			
Mining				Vietnam			
Public Administration				South Korea			
Retail Trade				Japan			
Services				New Zealand			
Transportation							
Wholesale trade							

## Sustainability goals dominated by five objectives

Establishing and communicating performance of sustainability goals using digital resources and technologies helps us evidence translation of a company's intent to action. The most prevalent goals across countries are Efficiency Gains and Sustainable Social Procurement.

## Top Sustainability goals

	Reduction of Greenhouse emission	Reduction of resource consumption (water, electricity, food)	Sustainable/social procurement/sourcing	Efficiency gain and cost savings	Employee health & safety incidents
1	South Korea, Vietnam	Vietnam	Singapore, Thailand, South Korea, Japan	Australia, Malaysia, Thailand, Vietnam	Indonesia, Philippines, New Zealand, Vietnam
2	Malaysia, Thailand	South Korea, Thailand, Japan, New Zealand	Australia, Vietnam	Singapore, Philippines, South Korea, New Zealand	
3	New Zealand	Australia, Singapore	Malaysia, Indonesia	Japan	Australia, Malaysia, Thailand

The remainder of company priorities and resulting country preferences were spread across the full set of twelve objectives.

For larger organizations there was also a focus on reduction of resource consumption (water, electricity, food), followed by reduction of greenhouse emissions and internal stakeholder satisfaction (e.g. employees well-being). Overall, the reduction of greenhouse emissions featured less than we would have anticipated.

## Gender equity in the workplace is still lagging

Companies have used digital technologies and transformation to make significant progress on employee health and safety EH&S (best performance). However, gender inequity in the workplace is seen as the least successful area.

## 2. Digital

This section focuses on Digital Sustainability maturity, capabilities, performance, use of digital resources and innovation utilised to deliver business solutions that impact on the Sustainability outcomes of the company.

A digital core is the cross-function foundation of a business's entire digital infrastructure and spans all business units and operations, from marketing to sales. From this foundation, each business can attach unique modules or solutions. A strong digital core is key to delivering sustainability impacts. We considered what digital technologies companies are investing in to help drive and achieve sustainability outcomes.

The big 4-5 digital technologies being pursued by almost all the companies are Cloud Computing, Cybersecurity, IoT, Mobile Technologies, and Big Data Analytics. Companies see this as foundational technology that strengthen their core to deliver on sustainability efforts. More advanced practices like inclusive tech design are seen in larger companies with higher revenues.

*“The sustainability challenges we face as a planet and people are substantial and require systematic change. I believe that digital technologies can come together to deliver more substantial outcomes. Our investment in research and innovation investments are aligned.”*

**K Ananth Krishnan**  
CTO TCS

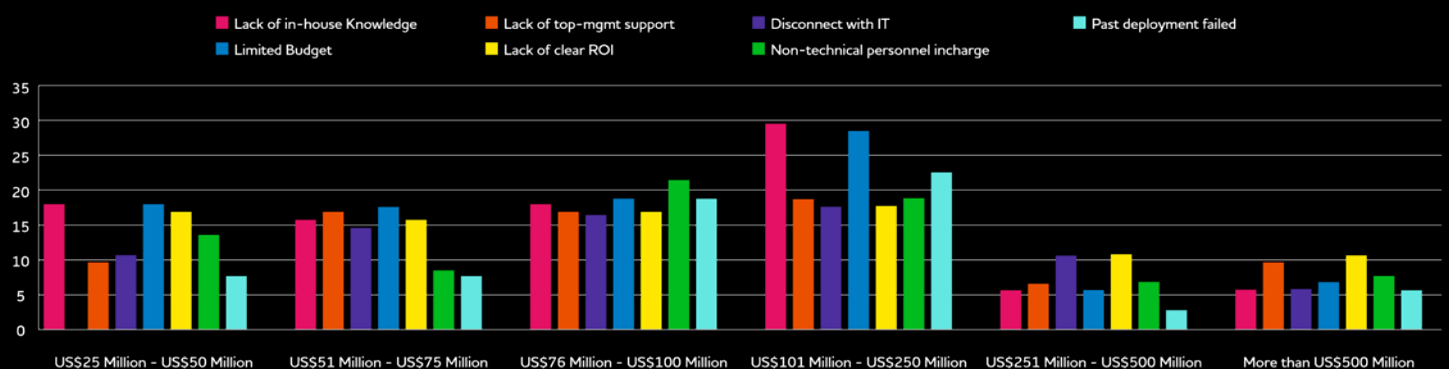
88% Of business and IT leaders in Asia Pacific anticipate an increased use of digital resources, systems and platforms to address sustainability outcomes in the next 36 months.

Digital Sustainability brings gains in efficiency. Companies pursuing Digital Sustainability believe they are outperforming their industry peers on efficiency gains/cost savings, but believe there is still room for improvement when it comes to disclosure and the traceability of resources. Respondents feel they are meeting or exceeding targets across most objectives.

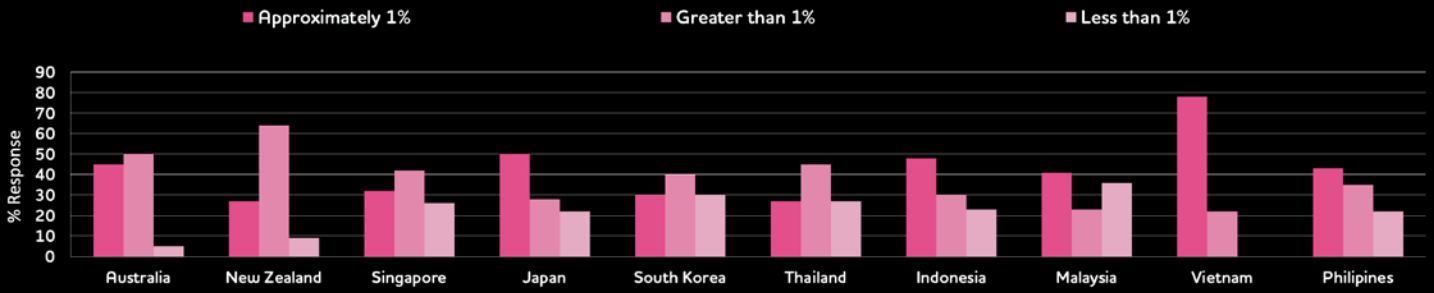
### What are the main inhibitors for the adoption of Digital Sustainability?

	<p>Philippines, Thailand and Malaysia feel leadership of sustainability initiatives by <b>non-tech personnel</b> is their primary inhibitor.</p>		<p>For companies, spending less than US\$250M, <b>budget limitation and in house expertise</b> are key inhibitors.</p>
	<p><b>Lack of inhouse knowledge</b> is a key challenge for respondents in 70% of the countries, and a primary inhibitor for Singapore and the Philippines. Among sectors, manufacturing, construction and transportation also see this as a key inhibitor.</p>		<p>Companies with budget over US\$250M are challenged by a lack of clear ROI model for investments in digital sustainability and <b>lack of management support</b> for digital sustainability initiatives.</p>

### Inhibitors of digital expenditure



## Digital Sustainability spend as a percentage of annual spend



## Spend on Digital Sustainability

### Majority spending 1%

or more of annual turnover on Digital Sustainability with New Zealand, Australia, Singapore, Thailand and South Korea leading the way.

### Transportation & Communication sectors

indicate a significant proportion of respondents spend more than 1% on Digital Sustainability



### Agriculture, Forestry & Fishing

indicates a relatively low spend – under 1% on Digital Sustainability.



### All countries have 20-30%

of companies spending less than 1% turnover on Digital Sustainability, with the exception of New Zealand, Australia and Vietnam.

### Companies with budget over US\$250m

are more challenged by clear ROI and site top management support as a primary inhibitor.

### But companies with less than US\$250m

spend rate budget and inhouse knowledge as key inhibitors.







## Opportunities to develop greater expertise

A key way for organisations to leverage digital for sustainability is to ensure they have sufficient expertise around digital issues and reskilling opportunities, and to focus on improving digital literacy for new roles. Most countries feel there is a lack of sufficient experts and, therefore, an opportunity to build additional digital expertise and create new digital roles to build core digital capabilities.

Digital capabilities are demonstrated in the form of data usage, automation and digital workplace capabilities. Another key indicator is the creation of platforms for planning, collaboration and innovative product development that enable sustainability outcomes. Responses vary across sectors with Manufacturing seeing room for growth on broader technological capabilities, and Finance sectors see improvement opportunities on developing the digital core that gives them license to innovate through digital products and platforms.

## Transparency is key for alignment

Managers are more convinced of the positive brand and reputational impact of the company's Digital Sustainability efforts than C-Suite respondents and directors. The latter are less convinced that the company has become known for its sustainability leadership, with 27% either neutral or disagreeing compared to 13% for managers.

An organisation's culture, alignment of digital investment priorities to purpose and openness towards transparent decision-making directly impacts its ability to drive sustainability innovation. Results show that respondents in Australia, Indonesia, Japan and Singapore believe there's scope for improvement in transparency, decision making, employee communication and also for proactiveness towards change.

## 3. Partnerships

This section focuses on the ecosystem enablers that help organisations access and leverage the best capabilities, know-how, tools and platforms to achieve sustainability impact. Respondents picked specialist technology vendor, specialist sustainability advisory, cloud service provider and data centre providers as the most relevant partners to help deliver on their sustainability goals.



**87%** of the respondents are looking for new strategic partners for Digital Sustainability; demonstrating the need, to collaborate with innovators or specialist partners to deliver win – win outcomes.

### For manufacturing, specialist sustainability partners are key

Sustainability in the manufacturing domain can be very contextual, geo and domain specific.

### There is need for specialised support as companies grow

Companies spending over on Digital Sustainability also chose specialist sustainability advisory as #1 strategic advisor, signalling the need for specialised support as their footprint grows.

**US\$5M**

### Emerging countries seeking partnerships for Digital Sustainability Outcomes

Across the countries who responded, Thailand, Philippines and Indonesia were most open to seeking new relationships with strategic Digital Sustainability partners.

## 4. Governance

This section focuses on the governance within organisations and the way it contributes to the success of Digital Sustainability.

Governance of sustainability varies widely among the company's surveyed. But centralised governance is most prevalent. However, the responsibility for sustainability is mostly distributed across Corporate, Business Unit, Department, or Project.

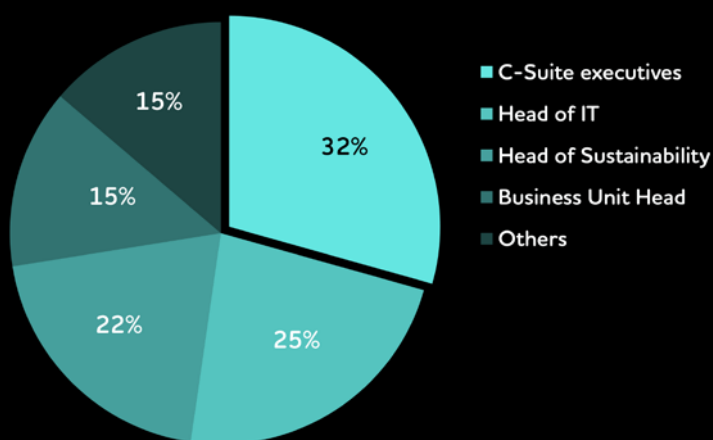
In companies with a centralised sustainability function there appears to be a stronger liaison with a dedicated IT ownership and role to support.

Developing countries appear more confident in their governance capabilities and frameworks while developed markets see some room for improvement. This response could reflect complexity increases along with maturity as well as the role of regulators and governments in influencing increased corporate transparency as is the case in Singapore.

### Who holds the budget?

# Over 60%

of budgets for Digital Sustainability are held by the business – C-Suite, Sustainability Head, or Business Unit Head.



### The budgets are in place

Interestingly, **over 80% of respondents agree they have sufficient budget and sustainability roles.** Meetings are regular and outcomes are measured. This demonstrates a level of best practice amongst Digital Sustainability leaders. However, this was at odds with respondents identifying budget as a major inhibitor at a later part of the survey.

### Communication is key

**80% of organisations acknowledged producing sustainability reports.** Indeed, the need for reporting is building momentum among organisations large and small driven by changes to mandatory regulations and a growing commitment to communicate their accountability to stakeholders.

### Formal governance structures are in place

These appear to be more prevalent when responsibility for sustainability is distributed. **84% of respondents indicated they measured sustainability outcomes against objectives,** reflecting a high level of maturity.

### Larger organisations are investing in robust governance

The respondents from larger organisations clearly value establishing robust governance processes. They are beginning to assign sufficient budget to these functions, as well as giving them **formal structures.**



# Stakeholder familiarity with sustainability objectives is a fundamental

Another measure of effective governance includes stakeholder familiarity **with a company's sustainability objectives**, success criteria, and belief in the processes used to measure impact.

The survey shows developed countries – Australia, Japan, New Zealand, South Korea, Singapore – have lower confidence that sustainability success criteria is clear to all stakeholders.

## Larger companies are more confident on measurement

Companies with **over 10,000 employees** are more confident about the measurement of sustainability objectives. And as expected, they're performing slightly better.

### The recognition of Digital Sustainability success

We also asked how Digital Sustainability success is recognised – this is another measure of maturity within organisations. Respondents advised that digital sustainability efforts of individuals were regularly recognised and the business had a digital sustainability award. Companies – in excess of US\$5Bn in revenue – are providing appropriate awards and individual recognition.

Many agreed that digital sustainability was a part of their bonus scheme especially in Thailand, Indonesia, Japan and Australia. Most respondents would like to see overall Digital Sustainability achievement as part of a bonus scheme. Companies – in excess of US\$5Bn in revenue – are providing appropriate awards and individual recognition. The responses received are more encouraging than we evidence day to day.





# The journey ahead

## Emerging markets share a similar outlook

We were encouraged by the high levels of engagement and commitment from emerging market economies, such as Indonesia, Philippines, and Vietnam. This is indicative of the differentiation Digital Sustainability offers these economies in realising growth and resilience. It was interesting to note that survey results from Thailand demonstrate alignment to more mature market economy responses, indicative of Thailand's transition from mainly an agrarian economy to an industrialised one and its improving position in the global value chain.

## Sustainability progress and improved business performance go hand in hand

Also noted was that progress against sustainability goals, show a strong alignment with gains in cost efficiency and savings, and more informed sourcing. However, lack of focus on greenhouse gas reductions and disclosure and traceability is surprising, given the known challenges and prevalent mindshare associated with these two themes.

## Budgets and ROI remain a challenge

As global experts in Digital Sustainability, we believe that challenges remain around budgets, Return On Investment (ROI), along with structural concerns and cross-organisational engagement.

We were inspired by the responses we received from all our 195 survey participants, right across the Asia-Pacific. They reflect an overwhelmingly positive approach, commitment, and belief in the importance and value of Digital Sustainability. While this is encouraging, we believe companies already pursuing Digital Sustainability, were more likely to choose to invest time in the survey; hence the feedback received has been overwhelmingly positive.

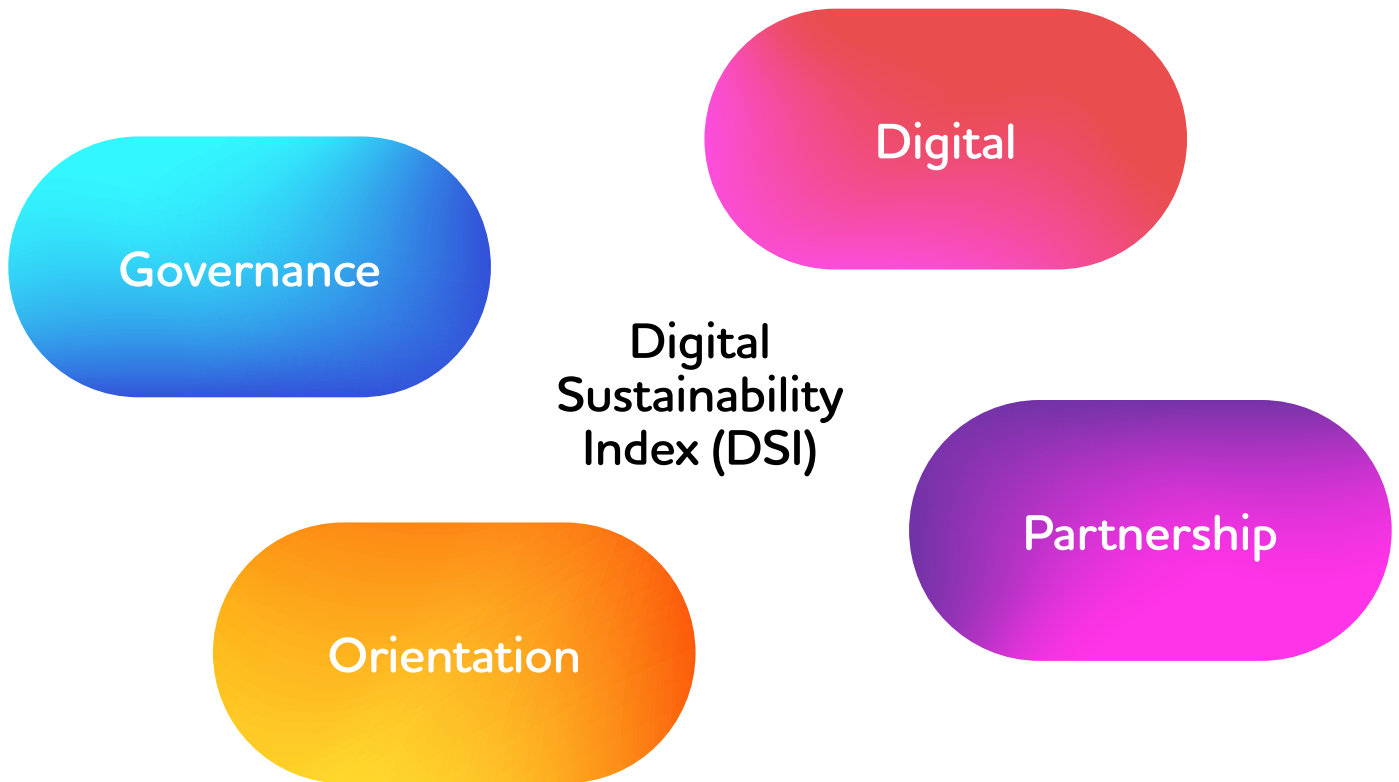
We were encouraged by the high levels of engagement and commitment from emerging market countries such as Indonesia demonstrating the added value and momentum Digital Sustainability offers to these countries in realising growth and resilience.





# Digital Sustainability Index, Readiness and Maturity





We analysed the results, and respondents were identified in four groups in the Digital Sustainability Index (DSI): Leaders, Strategic Players, Explorers and Experimenters.

**We divide the respondents into four categories**

**Digital Sustainability Leader**

Top 10% scores: 113-125

The pinnacle of Digital Sustainability. These are market leaders usually with strong digital and governance capabilities. There are 53 Digital Sustainability leaders that demonstrate high readiness across all aspects.

**Digital Sustainability Strategic Player**

Next 10% scores: 100-112

These firms may need to invest in one capability, e.g., governance or partnership to reach the ultimate level. There are 92 firms in our sample that are Strategic Players with strong capabilities, however not yet strong enough to be considered leaders.

**Digital Sustainability Explorer**

Next 10% scores: 87-99

Our Explorers demonstrate higher than average Digital Sustainability orientation, however, lack strong capabilities in two key areas such as digital and partnership, or digital and governance. There are 36 firms in our sample are Digital Sustainability Explorers.

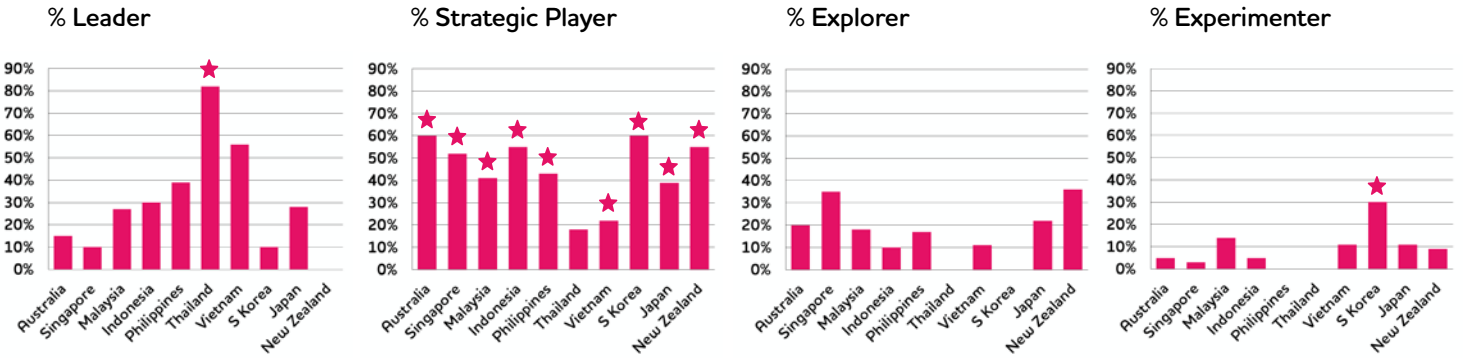
**Digital Sustainability Experimenter**

scores: 86 and below

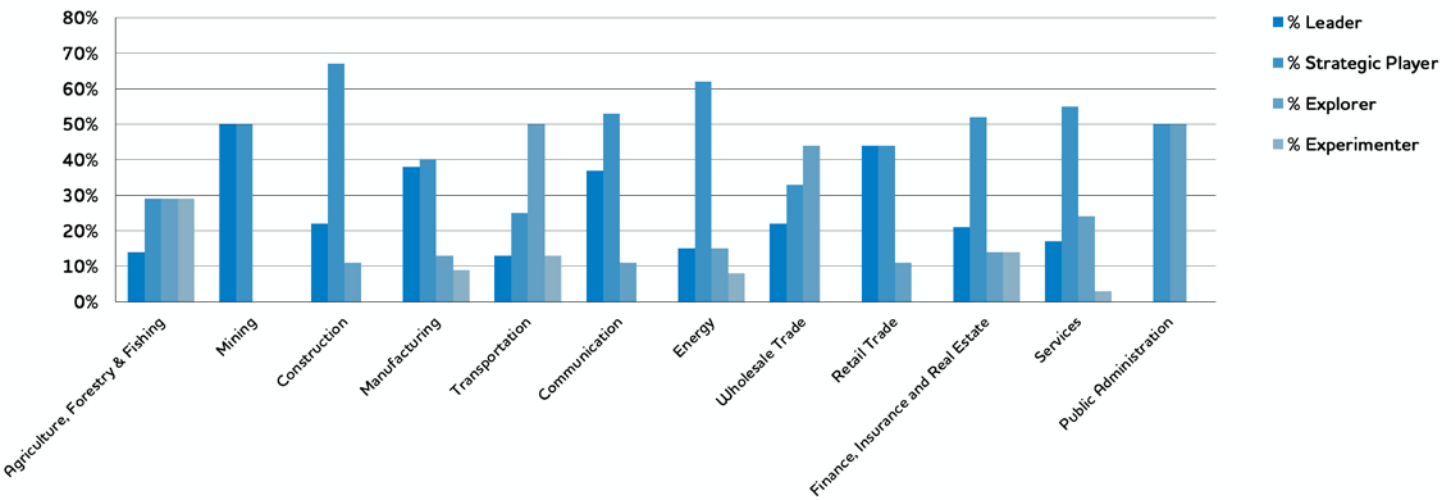
These firms show weakness across all aspects of Digital Sustainability, though still display some degree of Digital Sustainability orientation. These firms will need to strengthen two or more factors to move from an Experimenter to Explorer position. There are 14.

# Digital Sustainability Index Scoring

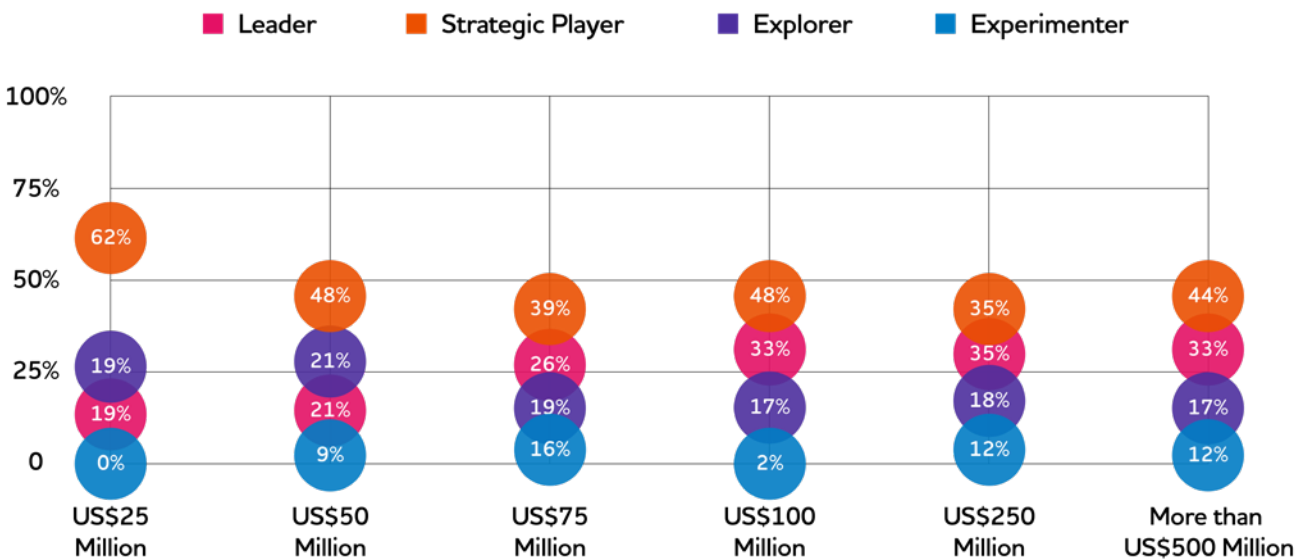
## By country



## By sector



## By spend





# Towards a conclusion

Through this study, we were looking to understand the organisational and technological factors that lead to successfully leveraging digital assets, infrastructure, and tools for sustainable performance within organisations. The results have been clear, consistent, and encouraging. They have enabled us to build a clear, cohesive point of view around the importance of Digital Sustainability.



# Embracing a Digital Sustainability mindset

The Digital Sustainability findings have given us much food for thought around the roles, emphasis, and actions of Asia-Pacific corporations when it comes to digital, sustainability and the future of business. What have we learnt about leadership? Where does that lead executives creating new pathways for their businesses? What should they be focusing on? Here are our perspectives.



## Future-focused leaders embrace new definitions of success

As we emerge from an extraordinary period of disruption and uncertainty, we are being offered a unique opportunity to reboot to a new era; an era where sustainability and prosperity are part of the same set of aspirations and success equation.

One of the most important outcomes of the pandemic has been the rapid evolution of our collective understanding about the interconnectedness of our systems and the vulnerability of our business models, our people, and our planet. It's clear we each play a role in creating a more sustainable future.

### Digital & Sustainability will underscore decision-making around mergers, acquisitions and risk profile of business

Per the Standard & Poors' 2022 ESG trends report, "while many large companies set sustainability goals and published ESG-related data in 2021, investors, regulators, and the broader public are exercising greater scrutiny of corporate sustainability efforts."

These are now key decision factors in mergers, acquisitions, company restructuring, and disinvestments, with an eye not only on long term goals but short and medium milestone and performance against these goals.

The scale of change needed, commands we rethink our futures, creating not only new perspectives on existing models, but totally new models as well. Using a sustainability lens across your business provides unique insights to successfully create value for all shareholders. Small improvements will not be enough to drive the kind of change that is needed. We need to completely reimagine the economic models and business fundamentals that have delivered economic growth to date.

Future-focused leaders see sustainability beyond a compliance or risk-based exercise and instead fuse sustainability with their digital and business strategy to create a future-fit business. Sustainable development represents a significant business opportunity for those committed to rethink, reframe and invest.

*"Businesses are powerful leaders in the sustainability-led transformation pathways we need to develop and implement. Understanding how your business activities impact on our people and the planet needs a longer-term perspective in decision making, and future investments, to ensure it meet the needs of multiple stakeholders."*

**Michele Lemmens**  
Head of Business Sustainability and Chief  
Technology Officer TCS Asia Pacific

# #2

INSIGHT

## Digital Sustainability leaders are purpose-led

Their commitment to stewardship enables these businesses to drive sustainability intent through investment commitments, to ensure longer-term decision making that embraces and enmeshes economic growth, social inclusion, and environmental protection.

The way purpose-led corporates frame and measure success is rapidly evolving. Clarity of goals, strategies, targets, and performance management are increasingly part of executive level Key Performance Indicators, with the impacts and results being linked to environmental, social and governance (ESG) impacts and outcomes.

Best practice corporate leadership is seen where sustainability is a core part of the business strategy rather than being seen as a trade-off.

The relevance for boards and executives today is difficult to dispute. Questions about the future viability of businesses reliant on unsustainable products and services are increasing.



### Regulators

ESG disclosure requirements from regulators are accelerating and becoming increasingly mandatory. This trend will result in changes to the way data is collected and reported across organisations and value chains, and the need for transparency and trust will continue to increase.



### Investors

Investors have seen evidence that purpose-led, ESG focused companies have performed better and shown greater resilience during the pandemic period. As a result, financial institutions are realigning portfolios, changing decision making criteria, and moving capital.



### Customers

Today's customers have a greater awareness of the influence of their spending power, and are signalling an intent to consume more mindfully.



### Employees

Employees are joining companies where actions demonstrate commitment to purpose, and these these core values enable such companies to attract and retain talent in a globally competitive environment.

Today's Stakeholders

# #3 INSIGHT

## Leaders integrate sustainability, digital and innovation deep in their business

Leading businesses are making strategic and investment decisions from a deeply ingrained belief in the importance of innovation, digital and sustainability. By doing so, they are making the transformation to a future-fit business, while building resilience, and creating differentiation and long-term value.

The pursuit of innovation – when activated by business strategy, enabled by emerging and disruptive technologies and driven with sustainability in mind – can help prompt a re-think of ‘business as usual’ and see end-to-end business transformation across the entire value chain.

### Strength from the Digital Core

A strong digital core that emerges from investments in data, analytics and artificial intelligence, along with deep business collaboration, offers businesses plasticity, agility and new capabilities to deliver on bolder ESG outcomes. These technologies are foundational capabilities that help companies in creating value.

Future-focused leaders invest in technologies and platforms to measure carbon footprints, assess climate risks, develop new products, rebalance portfolios, refine policies, drive target setting, and set plans in motion for net zero ambitions.

Sustainability by design is a key tenet in this thinking. It recognises that materiality may vary by company, industry and geographical consideration – however, the end-to-end value chain impact across materials (natural, substitute, recycled), human capital (skilling, modern slavery, fair wage), waste, new value (e.g., revenue from waste or soil-based carbon sequestration activities), traceability, and carbon measurement across the product and operations, are all part of a reimagined business.

To make real change possible at scale, leaders are prioritising using technology and innovation to unlock opportunities to rethink their business model and solve sustainability challenges. Our role at TCS is to help our customers achieve success in this new era.

### Extending emerging tech to biggest problems

Embedding sustainability values as core pillars of business and technology strategy helps us harness the use of established technological applications in cloud computing, big data analytics, cybersecurity, and mobile technologies, to enable new business models. Emerging technologies such as internet of things, artificial intelligence, blockchain, augmented reality/virtual reality, and inclusive design, do not operate independently, but rather compound and interact to offer exponential opportunities for business to impact on a higher quality of life but with a lower impact on the planet... a win-win proposition.



# #4 INSIGHT

## Ecosystems are key to unlocking change at scale

Future-focused leaders are seeking to harness the power of ecosystems for shared outcomes. While business aspirations are getting clearer, the pathways to achieving them are less so. Innovation and digital, along with collaboration across ecosystems, hold the key to learning, pivoting and scaling for accelerating impactful outcomes.

The commitment to collaborate across ecosystems is building. As we invest in more resilient and inclusive growth models, we have new blueprints that demonstrate how innovative approaches to collaboration - within and across ecosystems - can help solve some of our biggest challenges.

Companies are developing new styles of engagement across value chains and building partnerships to improve knowledge of their value chain and accelerate end-to-end transformation. We see changes in procurement and the associated performance management that reinforce shared success metrics especially in carbon reduction related initiatives.



### Clouds better than siloes

Real innovation in sustainable practices cannot be achieved operating in a silo. Leaders need to work with robust sustainable suppliers, vendors and partners, and champion more sustainable outcomes across the value chain. And they need to embed sustainable practices throughout the organisation, across IT, marketing, procurement and product development. This approach will deliver real benefits and help ensure the business is not greenwashing.

No single company has all the answers, nor can they be fully sustainable without collaborating with stakeholders to execute collective change. Shared goals and shared knowledge for shared outcomes across ecosystems can help companies to build the momentum required to lead and deliver their own success, as well as enabling the transition of key stakeholders.

# #5

INSIGHT

## Leadership development to include sustainability KPIs

With today's complex, interconnected and ever-changing problems impacting all organisations, there is no single solution, or clear ownership lines. These challenges do not sit within a single business unit and solutions need to be multidisciplinary.

The knowledge of sustainability and a foundational understanding of an organisation's material environment and social issues is not just a C-Suite requirement; it needs to be a core part of all leadership pathways. Sustainability leaders take a collective approach to solving these problems through a multi-stakeholder approach, encouraging new perspectives. Future-focused leaders consistently bring their team's attention to the bigger, broader picture and champion a mindset shift because they understand the need to bring about systemic change for the benefit of all.

### Credit where it's due... recognising initiative

Future-focused leaders also recognise, incentivise, and reward initiatives and individuals delivering on radical, cross-functional collaboration leading to more sustainable outcomes. Survey respondents agreed that this approach was lacking, suggesting there is still work to be done to make sustainability thinking (and doing) a core business activity.



*“We believe that enterprises can build sustainable, inclusive, and greater futures for their stakeholders by adopting an organic, inside out transformation model, rather than outside in, externally driven standardised change agendas.”*

Rajesh Gopinathan  
TCS' CEO and Managing Director

# Digital Sustainability levers for corporate and the public sector

Awareness of the need to change has accelerated and the intent is clear for leading organisations. However, sustainability is a journey and for those looking to understand the actions to becoming a Digital Sustainability Leader here are a few suggestions to consider as you plan your next steps.

## 1. Identify the levers for impact

A systems view of your company's footprint and impact is necessary to identify and understand which levers to engage for impact and desirable outcomes

Identify material social and environmental issues and stakeholders impacting business sustainability, and set goals and KPIs to deliver outcomes

Understand role and position of the business in the value chain in relation to systemic challenges

Create a unified business, technology and sustainability strategy

## 2. Leverage established & emerging technologies for accelerating Environmental, Social & Governance outcomes

Strengthen the company's digital core to harness the convergence of technologies and applications like Artificial Intelligence, data and machine learning to measure, predict and deliver proactive and impactful outcomes

The digital core is an enabler for reimagined, sustainability centric business and operating models to build agility, plasticity, and resilience

## 3. Identify synergies through ecosystem play

Rethink partnerships, operating and commercial models for common goals and outcomes through collaboration

Build new resilient businesses through multi stakeholder engagement and reframed business measures

## 4. Develop, recognise, reward leadership and success in sustainability

Sustainability is everyone's problem, opportunity, and KPI

Set up your company for success through pathways, opportunities, learning and recognition for radical collaboration and multistakeholder involvement that build solutions for impact





“As I see it humanity needs to reduce its impact on the Earth urgently and there are three ways to achieve this: we can stop consuming so many resources, we can change our technology and we can reduce our population. We probably need to do all three.”

---

David Attenborough



## Sustainability is sometimes seen as a paradox - long-term thinking that is only enabled by actions set in motion today.

Our world-first Digital Sustainability Index (DSI) demonstrates there are companies throughout Asia-Pacific that are already embracing and leveraging digital technologies, platforms, and tools as enablers to deliver measurable results - not just in terms of social and environmental benefits, but also economic.

Digital Sustainability can offer pathways and solutions that enhance the competitiveness and performance required of a resilient business while also meeting the need of scaling solutions to meet our global environmental and social challenges.

Digital Sustainability highlights the opportunity for radical innovation in the way we design, use, maintain digital assets and measure effectiveness.

But there is a lot more to be done. We need future-focussed leadership to harness digital sustainability across businesses and use purpose and technology to push the boundaries and create new paradigms – for our people and planet.

**A Digitally Sustainable future that starts today.**

# A special thanks to our contributors



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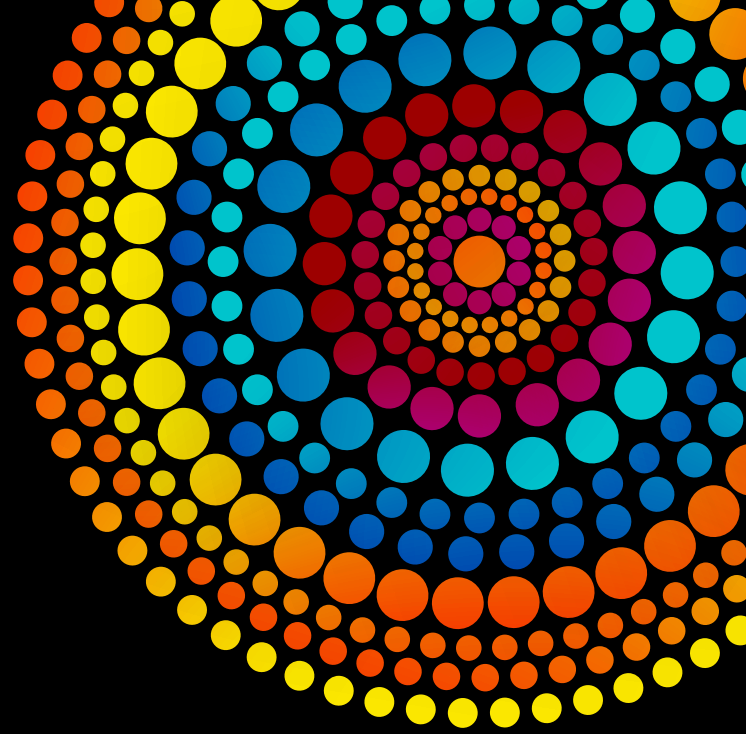
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TCS acknowledges the Traditional Owners and Custodians of the land. We pay our respects to all First Nations people and acknowledge Elders of the past, present and emerging.

We acknowledge the people of the land, the original inhabitants of Aotearoa (New Zealand) and their connection to Ranginui (Sky Father) and Papatuaanuku (Mother Earth) also the many communities throughout this land. We pay homage to the elders of our past, our present and forward into our future generations.



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