Sustainability must be a leadership imperative in the semiconductor industry

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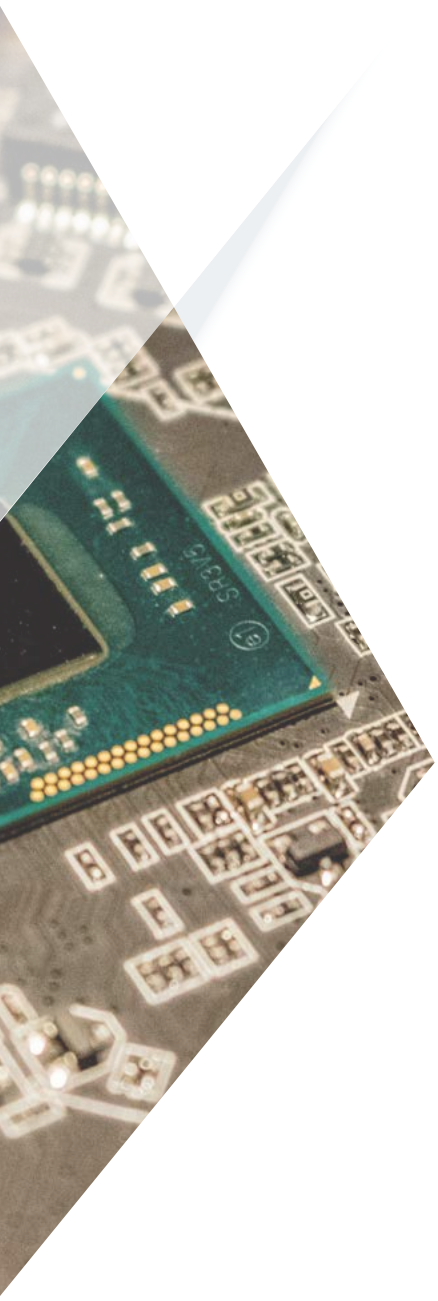

INTRODUCTION

As announced at COP27, global carbon dioxide emissions from energy are expected to increase in 2022 and will most likely exceed emissions in 2019 – the last global record. At the same time, the semiconductor industry and its leaders face challenges regarding sustainability transition and attracting young talents. In fact, the gap between sustainability workforce needs, and the number of qualified people available is growing. There is an urgency for us as an industry to act, and it is important that leaders and organisations can appear credible towards both current stakeholders and future ones. That said, we need to secure that leaders possess the right capabilities, motivation, skills and tools to pave the way for a successful transition and future positioning of the industry.

Eyes on a fast-growing industry

The global semiconductor industry is entering a period of monumental growth as countries and companies embark on major investment programs across R&D and Manufacturing to increase capacity and protect against supply chain vulnerabilities. With the industry's vast carbon footprint, sustainability issues occupy a higher place on corporate, consumer, investor, NGO and government agendas than ever before. In this article, sustainability encompasses environmental, social and governance issues (ESG) as covered by the Ten Principles of the United Nations Global Compact and the UN Sustainable Development Goals (SDGs). We will use the term sustainability throughout this article.

The much-heralded Chips for America Act has committed to $52 billion in funding to boost US domestic research and production; the EU's European Chips Act wants to "mobilise more than €43 billion of public and private investments" to increase its share of the global chip market from 10% today to 20% by 2030; China itself is committing to $150 billion of investment over 10 years. In total, the support provided to the semiconductor industry by the US, China, Japan, South Korea and the EU is estimated to be $721 billion, combined with major chip makers such as GlobalFoundries, Infineon, Intel, Micron, Samsung, STMicroelectronics, Texas Instruments, TSMC, and others announcing major expansion programs across the globe.

Semiconductor companies factoring in sustainability measures

These programs will undoubtedly challenge international climate goals and raise numerous issues for semiconductor companies to consider as they evaluate their operations to meet their own sustainability goals, via ESG goals as well as the standardised SDG measures such as technological advancements, supply chain optimisation, circular business model, and design for sustainability across the ecosystem.

Recently, we are beginning to see acknowledgement of the complexity of the role of a purpose driven business leader. At the recent Executive Forum at SEMICON Europa 2022, Ajit Manocha, President and CEO at SEMI, reinforced 5 key themes[1] that are top of mind for organisations as their leadership teams look to steer their way through this journey: Global Economic Outlook; Resilient Company; Path to Net Zero; War for Talent; and Supply Chain Redesign. For the latter three, Manocha emphasized the crucial role of leaders

[1] In line with the six priorities for CEOs in turbulent times identified by McKinsey & Company, Nov 2022.

working with organizations such as SEMI to facilitate the semiconductor industry collaboration required to address them effectively. In November 2022, SEMI announced the Semiconductor Climate Consortium, which focuses on the Path to Net Zero, highlighting the prioritisation of this crucial effort. Key themes which organisations and their leadership teams will need to address to meet the challenges, and maximize the opportunities, which lie ahead.

Focusing on sustainability, or even regenerative or circular thinking can help companies navigate all these complex and challenging themes all of which require resilience and long-term thinking. Sustainability and regenerative thinking are all about moving from a degenerative culture to a regenerative culture, and living systems design pays attention to value creation and value delivery far beyond product orientation and siloed and fragmented thinking. It is a brand new era, and it starts with the acceptance of sustainability being a leadership imperative and how to integrate sustainability fully into the corporate strategy.

Effective leadership based on a sustainability mindset is key

Roadmaps must be developed according to each company's unique strategy, context, situation and goals. Companies must deliver in the cross-field of fair, safe and beneficial business practices towards labour and the community, reducing the ecological footprint, and environmental damage, and maximizing shareholders' return. Three key areas will be the drivers: Leadership culture & capabilities; People & Organisation; and Business objectives. Many things have been said and written about business objectives and less about leadership. Therefore, the scope of this article is to focus on the new leadership role and the new required leadership capabilities.

To outperform the triple-bottom-line approach, it is very much about influencing and impacting people in the right way. Research clearly shows that effective leadership has the biggest impact on results, hence the right leadership is instrumental for succeeding in the described sustainability transition and the journey towards being regenerative. Leaders must be able to act as strong facilitators and motivators. They must keep their eyes on the future, incor-

porate sustainability goals as an integrated part of business strategy in addition to profitability, and get people to think long-term. It is about understanding that the company and its operations are part of an ecosystem and that stakeholder satisfaction goes far beyond investor satisfaction. From a leadership perspective, the focus should now be on climate resilience and equity. And the reality is that it has to be done in a situation characterized by great uncertainty and complexity.

To be able to integrate sustainability as part of the strategy and meet and exceed expectations, leaders and boards in the semiconductor industry initially have to ask themselves two important questions: Do we have a sustainability mindset and associated leadership attributes? And does the leadership culture actively prize sustainability as an imperative for the long-term viability and success of the organisation? The answers to these questions combined with the increasing complexity of the business landscape and the multi-stakeholder demands require that we rethink the leadership role, take a closer look at the leadership capabilities needed, and use a structured, factful and tailored approach to leadership advisory, leader selection and leader development. Simply put, an approach is needed where we choose science-based over chance in predicting which leaders will have the biggest impact on process and results. But we also need to develop and implement reward systems and identify soft KPIs that can be motivators, not only to leaders but also to employees in the process of developing a sustainable mindset throughout the organisation.

New leadership capabilities are needed

By the end of the day, the execution of a transition where sustainability is merged with strategy starts with a thorough leadership capability analysis and a new approach to the leadership role. Boards and leaders must possess the right capabilities in combination with a deep commitment, a transformational mindset and a systemic outlook to facilitate and innovate the new context. Those organisations that attract, motivate and develop the most effective value-driven leaders who can create followers based on a shared vision for change outperform those that do not.

5 capability characteristics needed to lead sustainability transition

We have identified five key capability characteristics modern leaders need to possess in order to be able to merge sustainability with strategy and lead and facilitate a successful transition of their company and organisation.

1. Practice multi-stakeholder governance

Leaders need to be able to work across boundaries and cross-sectors and include multi-stakeholders to build a shared vision for change and to explore and seek consensus-based solutions to the complex challenges of the required green transition of business and society. Open innovation based on data sharing, knowledge sharing, and new collaboration platforms and partnerships will be the new normal. Leaders need to be able to balance a huge variety of opinions, intentions, and agendas as stakeholders come from the whole regenerative or circular ecosystem of which the company is a part and not only from the linear supply- and delivery chain. The new multi-stakeholder universe, therefore, requires multi-stakeholder governance which again means bringing multiple stakeholders together to participate in dialogue, decision-making, and implementation of responses to jointly perceived challenges in the green transformation of business and society.

2. Navigate complexity

Leaders need to adopt an eco-centric and systemic worldview with a focus on system-level solutions if they want to outperform the triple-bottom-line. Outperforming means doing business by going beyond compliance and pure stakeholder satisfaction and not seeing business as linear nor one- or two-dimensional but multi-dimensional. In this context, leaders face at least three types of complexities: Navigating the expectations from the multi-stakeholder universe. Navigating dependencies in the value chain horizontally and vertically. Identifying and implementing the required sustainability measures into the strategy, into the core business functions, and the organisation.

3. Authentic value-driven

Leaders need to move beyond an adaptive approach, though important in navigating complexity. They need to have a purpose-driven, transformational mindset based on effective self-leadership. They should be driven by a sincere set of values which can be under-

stood, accepted and adopted by the entire organisation, throughout the value chain, and across boundaries. This sincere set of values is also the fundament for avoiding greenwashing and as such avoiding employee distrust – especially among the new generations. To be credible and trustworthy – not least towards new generations –leaders must recognize the importance of leading and developing themselves from a new basis and with a different purpose and reflective mindset than before. They need to be able to constantly develop the „inner game“ (intention, self-awareness, self-confidence and self-efficacy) as well as the „outer game“ (how they influence and impact). By doing so, they will succeed in navigating complexity and performing as empathic but still effective transformational leaders who challenge business-as-usual approaches and who create multi-stakeholder followers, improve organisational capacity, and impact, and outperform on results.

4. Triple-bottom-line innovative

Leaders must provide space for exploration and put innovation high on the agenda in all parts of the business with an entrepreneurial mindset – often in a completely new context. Innovation can no longer be seen as a linear process since innovation now must implicate all stakeholders in the multi-stakeholder universe and all dimensions of the triple-bottom-line approach. But that is only possible if the right combination of an agile and diverse organisation where people possess the right combination of specialised sustainability knowledge in combination with varying degrees of other multidisciplinary skill sets, a basic and broader fluency in sustainability around operations and processes, and a strong and accepted corporate culture, mindset, and behaviour is present. Because these parameters are key to utilising new technologies, understanding new financial instruments and financing options, navigating the framework conditions as well as fulfilling customer demands and taking advantage of market characteristics, they are also key to the all-important innovation capacity.

5. Long-term thinking based on courage and resilience

Leaders need to be able to set long-term goals and have their organisation set on these goals. That means they need to drive concerted actions based on facts, courage, and resilience, and they need to involve the organisation in the process and the decisions. It also means setting tangible short-term goals that help to keep momentum as well as resilience when working with sustainability and the triple-bottom-line measures and goals. And it means finding a way to bypass short-termism and sub-optimisation. It means that leaders will have to find a way to predict the future in an unpredictable world constantly securing that the required knowledge, the right set of capabilities, and the right motivation is present in the organisation.

Identifying, selecting and developing the right leaders and specialists is crucial to delivering on the triple-bottom-line and the sustainability transition success

As we have stated earlier in this article, leadership has the biggest impact on the result. Because of that, leadership may also be the first barrier to effectively merging sustainability with strategy and thus succeeding with delivering on the triple-bottom-line and the sustainability transition. Therefore, it is crucial for companies and organisations in the semiconductor industry to be able to find, attract, assess, assign, onboard and develop leaders and specialists who can deliver predictable results throughout the sustainability transition and when it comes to the triple-bottom-line deliveries. According to a recent Microsoft report, to date, most companies at the forefront of sustainability transition have been scrappy, growing the "home-grown" talent they need. The Microsoft report states that:

> "...employers so far have tapped 68% of their sustainability leaders by hiring from within their own company. Some 60% of sustainability team members joined without expertise in the field.

We have identified 3 principles that can ease the way too predictable leadership success in the sustainability transition process.

1. Initiate a global cross-sectoral approach to identifying and selecting the right leader(s). A global cross-sectoral approach combined with local presence and in-depth sector expertise will most likely provide relevant candidates from the widest pool possible.

2. Use a precisely tailored, factful and systemic approach to identify and select the leaders who have the biggest impact on the process and can deliver predictable long-term results in a complex ever-changing business environment. Almost 50% of appointed leaders fail after only 18-24 months. It is like a coin flip. This has a huge negative effect on strategy implementation, organisational motivation, stakeholder engagement and performance.

3. Focus on building diverse leadership teams. We know that 33% is "the tipping point" when gender diversity will start functioning and shape the conversation and decisions made in a leadership team.

Give your leadership development programmes a quality check

When selected and appointed, an important part of creating successful leaders and leadership teams who can lead the sustainability transition and deliver on the triple-bottom-line approach is to develop a value-based leadership culture focusing on sustainability as a leadership imperative and a common understanding of the challenges. This is often done through million-dollar leadership programmes. However, studies show that only 10% of these programmes have a significant effect on results. The main reason for this failure rate is that these programmes are far too generic and not tailored to the specific context and situation the leader is navigating in nor the individual leader's personality, capabilities, learning style and performance goals[2].

By paying attention to the themes in this article, following the above-mentioned three principles and working with tailored leadership development programmes, companies in the semiconductor industry can effectively close the gap between corporate strategy and required capabilities and thus ensure that the organisation can outperform in the sustainability transition.

[2] An example of how to overcome these problems is the certificate in a sustainable leadership program that Mercuri Urval has co-designed with Henley Business School. The purpose of the program is to support participants' journeys towards sustainable leadership, thereby inspiring followership from employees and stakeholders generally. The program combines a strong group development and learning with individual development so that the leadership team can grow as a team and each leader can grow as an individual leader who can deliver predictable results in a specific context.

About Mercuri Urval

Mercuri Urval was founded in 1967 and is a science-based, global Leadership Acquisition and Advisory firm. Mercuri Urval works with more than 3,000 clients – across all sectors – in over 60 countries every year. Today it is clear that securing effective leadership is one of the biggest challenges organisations faces. Mercuri Urval exists to make sure organisations outperform through diverse and sustainably successful leadership.

About SEMI

SEMI® connects more than 2,500 member companies and 1.3 million professionals worldwide to advance the technology and business of electronics design and manufacturing. SEMI members are responsible for the innovations in materials, design, equipment, software, devices, and services that enable smarter, faster, more powerful, more sustainable and more affordable electronic products.

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