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How Executive Leaders Can Contribute When the Board Requires a Climate Change Strategy

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How Executive Leaders Can Contribute When the Board Requires a Climate Change Strategy

Many boards of directors are asking about enterprise responses to climate change. Executive leaders can address climate change as risk management, cost, corporate responsibility and brand issues, with technology and other implications. This update includes a discussion of circular economy issues.

Overview

Key Findings

- Enterprises and governments are increasingly taking actions to address their public postures and responses to climate change, as they respond to customers and evolving regulations.

- Technology will play an important role in addressing climate change effects, including amelioration of impacts like violent weather, higher energy costs and diminished electrical grid reliability. Technology is essential to "circular economy" initiatives targeting entire supply chains.

- Executive leaders can address issues related to climate change within the contexts of strategy and enterprise and IT risk management.

Recommendations

Executive leaders involved in enterprise strategic planning and execution can respond to board requests for responses to climate change:

- Define a business context for the enterprise strategy that incorporates projections of climate change and its specific impacts. Examine the enterprise's brand, customers, employees, partners, markets, supply chains and regulators; ask how global warming might affect them over three-, five- and 10-year periods.

- Use the same business context description as a starting point for planning the projected impacts of climate change on the enterprise.

- Assess the short- and long-term changes in IT and enterprise operations (for example, facilities and cost and reliability of energy) that can reduce the enterprise's carbon output and improve resiliency.

- Provide digital tools to enable the commercial and supply chain leaders to create economic and brand value by utilizing the circular economy.

Analysis

Executive Leaders Will Be Tasked With Their Enterprises' Climate Change Response

Climate scientists report with a 97% consensus that increases in the global mean surface temperature (GMST) will likely exceed 2.0 degrees Celsius over the 1900 period baseline by 2050. [1] The projected effects include sea level rise, droughts, floods and increasingly frequent massive storms — as well as the destruction of flora, fauna and natural habitats worldwide, with significant impacts on humanity. Based on that scientific consensus, many governments (including all of the G20) and boards of directors believe that action is needed now to address the issue.

CIOs and other enterprise business and executive leaders are likely to be asked by their boards and executives to explain current or prospective responses that fall within their purview. They will also be asked to contribute to discussions about how the enterprise can and should respond to the challenges of climate change.

Both of IT's Missions Are Affected by the Risks of Climate Change

Any IT organization (ITO) has two missions. The first mission is to provide ongoing support for business operations. This means efficient and effective management of IT infrastructure and operations and, in many cases, the physical office facilities. This is an indirect value mission, in that it does not create value that customers perceive and knowingly pay for, and its value is calculated in terms of price for performance, not ROI.

The ITO's second mission is to advance the enterprise's agenda for change — that is, to support a coherent execution of technology-enabled strategies. This mission creates direct value, and that value can be calculated in terms of ROI, where the ITO's contributions represent a piece of the investment (see Figure 1).

Figure 1: The Two Missions of the ITO

The Two Missions of the ITO

	Run the Business	Advance the Strategic Agenda
Mission		
Value	Price for Performance	ROI

Source: Gartner
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From the executive leader's perspective, the response to climate change is most easily framed in terms of risk management for both missions. Where the first mission is concerned, risk is defined in terms of impacts on operations. Responses might include short-term adjustments to operations (like reducing operational greenhouse gas emissions), as well as longer-term investments in capacity and capability required by a changing global environment. This might also include energy management to reduce operating costs (such as electricity), contracting or purchase of renewable technology to reduce carbon footprints and overall product costs, and ensuring resiliency (offices and data centers) in case of outages.

Where the second mission is concerned, risk is defined in terms of threats to the enterprise's strategic goals. This means risks to markets, customers, supply chains, and the relevance of enterprise products and services.

Incorporate Climate Change Effects Into the Business Context Analysis

Managing climate-related risks for these missions demands insight into when and where climate change will produce changes in circumstances that matter to the enterprise. We suggest that the first step in responding to board requests related to climate change is to incorporate scientific projections of its effects into the business context analysis that supports the enterprise's strategy. The business context consists of a set of assumptions about the future (such as about customers, markets, supply chain partners, competitors and industries) that guides the creation and execution of strategy (see Figure 2).

Figure 2: Business Context Supports Enterprise Strategy

Business Context Supports Enterprise Strategy
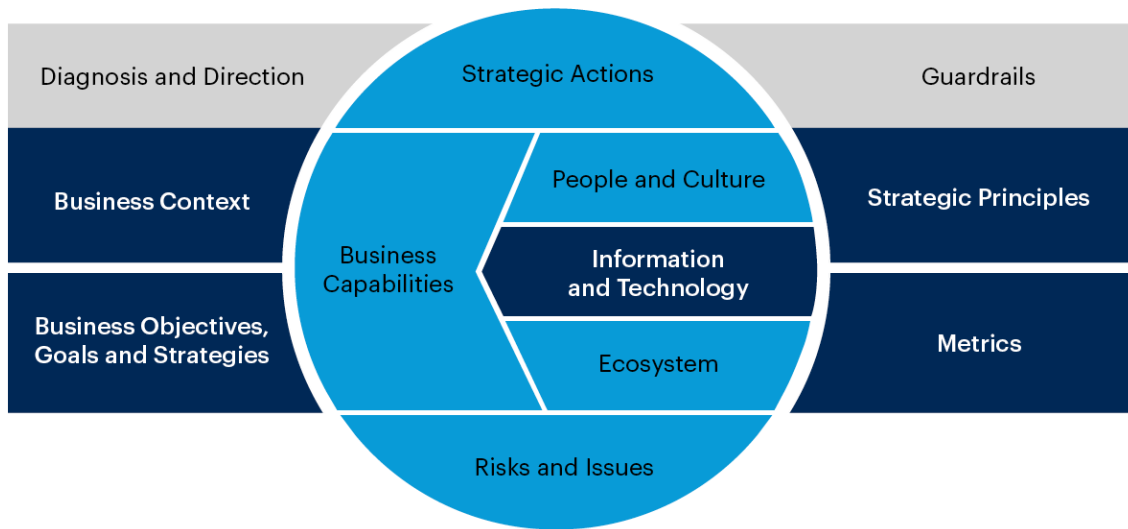
Source: Gartner
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The first question to be answered through this analysis is about the projected path for climate change through the enterprise's planning horizon, which is available through various scientific reports. [2] We suggest that such projections be extended to a 15-year window, which is beyond the planning horizon for most enterprises, but is well within the limits of scientific forecasts. In this analysis, the focus should be on where, when and how specific changes in the physical and regulatory environment will occur. The changes will often be specific to geographic regions (for example, carbon taxes, clean energy credits, and customer and partner activism).

The next step is to ask how these physical effects will translate to risks for the enterprise and its stakeholders, including customers, suppliers, regulators, employees, markets and competitors.

Here are some example questions:

- Are employees, customers, critical partners or facilities clustered in coastal areas that may be submerged by rising seas, or in areas that are prone to wildfires or water shortages?

- Do business continuity plans consider the potential for employee, facility or customer migrations — voluntary or otherwise — in vulnerable areas?

- Will climate changes impact the enterprise's supply chains from source to delivery?

- Will regulators impose stringent new rules for operations?

- Does the enterprise have appropriate resiliency planning, especially for potentially prolonged grid outages?

Answering questions like these demands broad knowledge of the company's customers, suppliers, facilities and operations, and so requires a team of executive leaders across the enterprise.

Finally, the enterprise can adjust its goals and define one or more strategies for scenarios involving greater or lesser effects from climate change. These strategies may require investment, perhaps substantial investment, in new capacities and capabilities for the enterprise, which, in turn, will demand discussion with and approval from the board. As always, investments in indirect value (the driver for most investments involving IT) should be framed in terms of acquiring essential capacity and capability to conduct business operations in the most effective and economical way.

Assess the Impact of Climate Change on the ITO's First Mission

IT strategy necessarily follows the enterprise strategy. In prioritizing plans for handling climate-related risk, executive leaders should consider the enterprise strategy and areas of board interest and concern. Specific climate- and extreme-weather-related areas for consideration for the first mission might include:

- Business continuity and disaster recovery.

- Workforce safety.

- Communications, internal and external.

- Sourcing for services — what's outsourced, to where?

- Energy sources and costs. Conventional sources for energy become less attractive as price/performance ratios tilt toward renewables (such as solar, wind and battery backup), prompting defections from the grid. This, in turn, will increase grid-based prices for those who remain, and reduces a political issue to an economic imperative.

- Maintenance costs. Additional, more-intermittent grid demand (due to electric vehicle charging, support for more-distributed generation and so on) will require costly upgrades, and more-frequent extreme weather will also require more grid maintenance.

- Energy management for enterprise facilities (especially data centers). This will become more important to control electricity costs, which are likely to rise.

- Supply chains. In general, shorter, less complex supply chains imply less expense and less carbon emissions. Product design, materials selection and supplier location impact the embodied carbon emissions and the ease of end-of-life materials recovery.

- Carbon-dioxide-generating activity and impact measurement, analysis, accounting, tracking and reporting, all supported by Internet of Things (IoT) technologies.

- Carbon-dioxide-generating activity substitution — for example, via dematerialization and electrodigitalization.

- Carbon trading enablement.

- Social awareness and education via social media and other outlets.

- Greener IT through more-efficient data center and facilities energy management.

This is by no means an exhaustive list. Executive leaders can influence the prioritization of specific plans, and prioritization will likely be affected as well by increasing regulation for carbon-producing activities. In the end, board and executive concerns define the risks that matter most to the enterprise.

Assess the Impact of Climate Change on the ITO's Second Mission

Currently, most spending in ITOs is aimed at infrastructure and operations (I&O) to support the first mission. Managing climate risk to provide resilient operations is likely to require substantial investments in technology, not only at the enterprise level but also at the national and global levels. Scenarios that include substantial climate change will also include increased spending on I&O (this spending is already increasing, driven by IoT, big data, and heightened requirements for security and privacy).

That said, opportunities may exist for enterprises in a warming, more-extreme-weather world. Boards will ask questions about those opportunities — for example:

- Marketing of "green credentials" as a means to enhance the brand, such as a zero carbon footprint in office buildings. Take care not to overstate green credentials, as this will undermine the brand.

- Products, services or expertise aimed at solving climate-related problems for businesses and consumers, such as carbon tracking and trading.

- Carbon-reduced products and services, of which electric cars are an early example.

Some of these opportunities amount to a changed business model for the enterprise, which requires new capabilities to support new markets. Executive leaders from the CEO down will necessarily be enlisted to help implement such change.

Provide Digital Tools to Enable Commercial and Supply Chain Leaders to Create Value From the Circular Economy

The circular economy is an emerging discipline for sustainability. The purpose of the circular economy is to decouple raw materials consumption from growth. The more effective use of materials across the product life cycle, in many instances, will have positive impacts for emissions reduction. This concept is based on three principles:

- Design out waste and pollution.

- Keep products in use for as long as possible.

- Return materials at end of life to the environment in a way that is regenerative.

In a circular economy, materials life is extended through product design, improved maintenance (for example, software updates), product-as-a-service business models, refurbishment, parts harvesting and recycling. Figure 3 shows a comparison between a linear economy and a circular economy.

Figure 3: Circular Economy Versus Linear Economy

Circular Versus Linear Economy
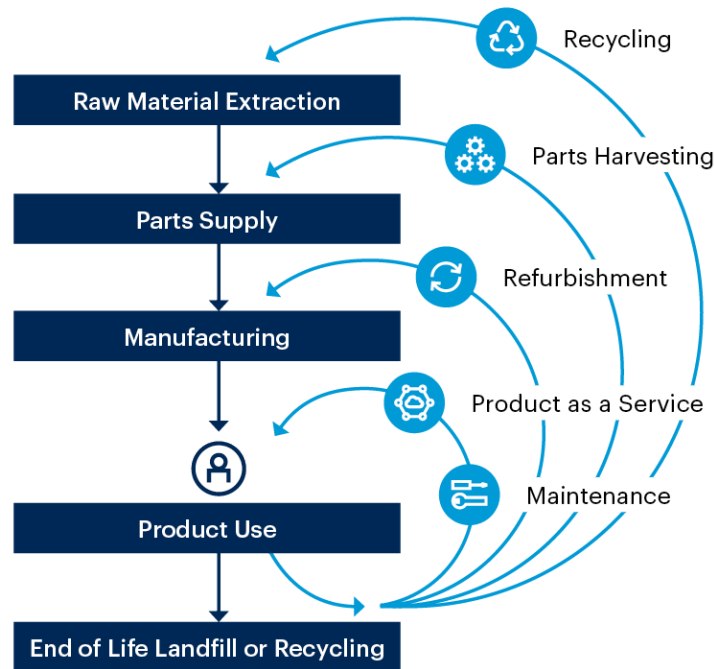
Source: Gartner
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The circular economy reduces waste and potentially greenhouse gas emissions, because it enables embodied energy in products and materials to be kept in use, rather than be lost to landfill, incinerators or other disposal methods. The 2019 Gartner Future of Supply Chain Survey showed that three technologies are primarily being piloted to enable the circular economy: machine learning (33%), advanced analytics (32%) and artificial intelligence (32%). [3]

Potential is seen in blockchain technology (in three to five years, after more standardization and integration with corporate software) by creating immutable records of enterprise activity and enabling more-fluid information sharing among participants. About 38% of supply chain leaders believe that blockchain will have the potential to enable circular economy strategies in the next five years. Collaboration between executive leaders and supply chain leaders is crucial to integrate digital and circular economy strategies.

Executive leaders should ask the following questions of the organization:

- How can digital technology create visibility of materials and greenhouse gas emissions across the value chain?

- Can digital technology enable new customer experiences that will enhance product-as-a-service models, and promote product longevity?

- What difficulties is the supply chain having to advance the circular economy strategy? How can startups and incumbent technology providers help the organization overcome these challenges?

- Where can digital technology be applied to track the costs and benefits of the circular economy, to enable improved decision making?

For some products, reprocessing materials may not be economically or environmentally viable, with more emissions generated than primary materials extraction and manufacturing. These are candidates for potential design improvements. Only by applying digital technology can ITOs assess candidates for the circular economy, impacts across the life cycle and orchestration of materials.

The circular economy will revolutionize materials use and improve product life cycle management. In most instances, it will reduce greenhouse gas emissions across supply chains. At a more tactical level, as stakeholder pressure for transparency of emissions increases, ITOs can provide reporting tools that improve operational transparency through data and predictive analytics. Analog management of complex emissions data through spreadsheets, risks calculation error and failure.

Build Contingency Strategies for Climate Change, and Use Them as Needed

Executive leaders should build strategies that incorporate climate change on a contingency basis, and put them in play when circumstances begin to resemble the business context in those strategies. They should update strategies and inform the enterprise as these circumstances develop. As a result, they can aid execution and reassure customers and employees who will be seeing the same circumstances and wondering what's next.

All this begins when the board recognizes that climate change demands action. Some boards believe this now. Some will come to that conclusion as circumstances change, and a few never will, at least until government regulations (legal costs, carbon emissions "taxes" and fines) and stakeholders demand action. Executive leaders who think the time for action is now are advised to begin researching the business context that includes climate change, and be ready to respond when asked.

Evidence

[1] Big Money Starts to Dump Stocks That Pose Climate Risks, Bloomberg.

[2] Global Warming of 1.5°C, Intergovernmental Panel on Climate Change.

[3] 2019 Gartner Future of Supply Chain Survey. In September 2019, Gartner's supply chain research team sent invitations to complete an online survey to its community members, Gartner clients, and a wider group of practitioners in supply chain and other functions globally. We received 1,374 completed responses during the survey period.

We had participants who were from across industries and who mostly worked in supply-chain-related functions — for example, supply chain (50%); logistics, transportation and distribution (9%); and purchasing and procurement (8%). Of the respondents, 50% were from North America and South America; 35% were from EMEA; and others were from Asia/Pacific, Australia or the rest of the world. About 58% of the participants were from companies with over $10 billion in annual revenue. In addition, 57% of the participants were at the VP level, director level or above.

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