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The Hidden Link Between Sustainability and Digital Transformation

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Enterprises around the world are in the midst of major digital transformations. At the same time, they're increasingly driven to improve their ESG (environmental, social, governance) performance. From the United Nations to the European Commission to the Organization for Economic Cooperation and Development (OECD), international bodies have issued climate policies and guidelines that are increasingly woven into all aspects of the enterprise. Without question, sustainability policies will drive the next generation of business. Therefore, developing linkages between sustainability and digital transformation is a natural way forward.

Sustainability and digital transformation, though seemingly separate, can – and should – be joined. In fact, digital transformation can *contribute* to an organization's sustainability progress. Achieving this outcome requires stakeholders to look at transformation efforts through a different lens and to engage their digital, engineering, and sustainability teams in a common conversation with a common goal.

Corporate sustainability has long been associated with the triple bottom line (people, planet, profit). Similarly, long-term business viability in the new economy – the very reason companies are engaging in digital transformation – requires a three-legged stool that makes organizations smart, digital, and intelligent. Like the pillars of sustainability, if an enterprise overlooks any of these elements, its transformation will not achieve the desired outcomes.

These elements can all be addressed through innovative engineering during digital transformation. What's more, by addressing them in the right way, organizations can quantify and maximize sustainability benefits they may have otherwise overlooked. The ability to monitor, control, and minimize emissions through engineering is often referred to as "sustainable engineering." And it is essential to developing linkages between digital transformation and sustainability.

Four Steps to Ensure Engineering Impacts Sustainability

"Sustainability" is often associated with environmental issues, but per the triple bottom line, it also means advancing long-term social and financial viability. In the new economy, it's critical that companies consider this broader definition.

Environmental considerations are table stakes; today's workforce, customers, and investors **all demand it**. But sustainability principles also have the power to transform processes, business models, supply chains, and how companies approach digital transformation. If they embrace sustainability at this holistic level, organizations can point to the specific gains – including environmental – that each of these initiatives delivers.

Defining an engineering principles charter with sustainability goals helps a company identify potential impacts throughout its transformation. Once goals are established, the company can then chart its progress and tangibly quantify the sustainability benefits associated with its transformation. Four simple steps can help companies embrace these new engineering principles.

Step 1 Define the sustainability targets as wildly important goals (WIG), applicable by sectoral guidelines from standards bodies (such as SBTi)

Step 2 Have a lag-lead mapping of the goals into the enterprise value chain, grouping the functions into three categories:

- **Design, engineering and construction** – Collaboration and handshakes that happen while defining what to produce, how to produce, from where to source, and how to build
- **Operations and maintenance** – Control activities related to manufacturing, operations and maintenance phases, and the interfaces with other functions
- **Decommissioning, refurbish and reuse** – Optimization activities related to end-of-life assessment, conformance to environmental regulations, consumer centricity, and defining market feedback

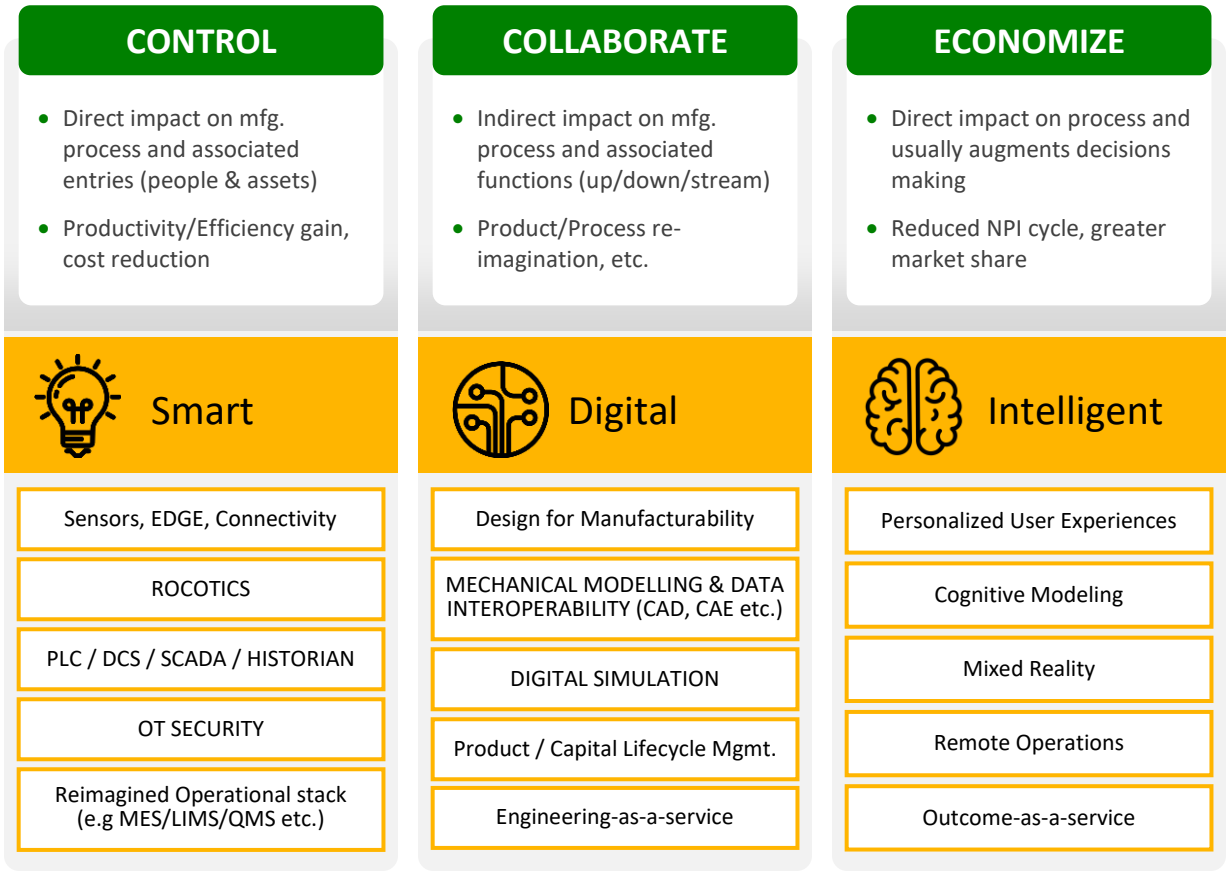
Step 3 Once the targets are set for each function, identify and evaluate areas of transformation, whether they be process-led, technology-led, or a combination of process and technology

Step 4 Run an enterprise sustainability performance charter, map to stakeholders at each functional level, evaluate progress, and course correct as needed

Enable Sustainable Engineering through a Smart, Digital, Intelligent Framework

Embracing a smart, digital, intelligent (SDI) framework supports digital transformation by aligning the entire digital thread – from source to design to build to make to consume – to achieve business and environmental sustainability benefits. The **Smart** capabilities help organizations control operations and maintenance functions, while **Digital** capabilities enable collaboration throughout the organization and value chain. The **Intelligent** capabilities, meanwhile, help companies drive results through optimization.

Figure: Wipro's SDI Framework for Sustainable Engineering



These three considerations – smart, digital, and intelligent – often form the core of a company's digital transformation strategy. Yet establishing these pillars at the engineering level also empowers companies to monitor, control, and manage the environmental impacts of suppliers/vendors.

By using the SDI framework to manage these impacts, companies can measure and improve them over time. This ability is crucial to demonstrating environmental performance; suppliers/vendors have a huge impact on a company's carbon footprint when considering **Scope 2** and **Scope 3** emissions.

Digital Transformation Goals are Sustainability Goals

Enterprises no longer have a choice about sustainability. Funding, market access, and even customer adoption is now influenced by an enterprise's commitment to delivering an ecosystem sustainable for current and future generations. It is therefore imperative that every aspect of the business, including digital transformation and engineering, be interwoven with sustainability initiatives.

Adopting sustainability in the new world ecosystem is not just about being smart, or digital, or intelligent. It requires all three. If organizations align their sustainability and digital-transformation teams, if they consider the engineering aspects of digital transformation to be a contributor to their ESG goals, they can realize sustainability gains and progress that would have otherwise gone overlooked. Digital transformation can and should contribute to an enterprise's sustainability platform and decarbonization efforts. And it starts with engineering innovation.

About the Authors

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Pareekh is a seasoned professional with 20+ years of experience in engineering and manufacturing. He

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