

THE OUTLOOK OF THE DIGITAL TRANSFORMATION FOR SUSTAINABILITY

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Abstract. The way how companies can comply with the Sustainability agenda is start measuring how Sustainable each company are and it's possible only using Digital solutions, i.e., the Sustainability analytics need to be based on the data and data need to come from the core business operations. The main objective of the study to give an outlook and highlight that the Sustainability Agenda forces the Digital Transformation and Digital Transformation of the companies accelerates achievements towards Sustainability goals. In the study the authors brought recent examples what proves Digital Transformation as an accelerator towards Sustainability and conducted the survey with 77 participants who are acting as Digital Transformation trusted advisors and representing the EMEA North region. Referring the research results the author observes overall slow movement in Digital Transformations towards addressing Sustainability targets from regular market participants, what can be as a potential subject for further detailed research with the purpose to develop potential accelerators for such transformations.

Keywords: Digital Transformation, Sustainability, UN Agenda 2030.

JEL Classification: Q01, M10, M15, O33.

Introduction

Global challenges, such as social inequality, resource depletion and waste, and the growing climate crisis, combined with rising stakeholder activism and current or pending legislation has driven sustainability from an optional for execution, to a core business imperative.

Underpinning the need for business to address these major global challenges, are evolving expectations on the role of the private sector and on how society measures business success beyond the financials.

Investors, shareholders, regulators, and consumers all demand responsibly derived products and services with a smaller environmental footprint. Reducing global emissions, waste, and social injustice requires a full-lifecycle approach with enterprises at the forefront.

Sustainable businesses are being rewarded by customers with their loyalty, by investors with their capital, by citizens with their perception of the enterprise (reputation) and by employees by their engagement. While the majority of enterprises are still focused on regulatory compliance, early movers see an opportunity to lead and differentiate in their industry by driving sustainability into the core of their business to also transform their

business models for new value creation, or to create and win in new markets. Intelligent Enterprises will be those that can make Sustainability Profitable and Profitability Sustainable.

The United Nations created the 2030 Agenda in a transparent process of negotiation that lasted more than three years and actively involved the general public. The Agenda is an expression of a new quality in politics: everything is to be considered and addressed from the point of view of sustainable development. Unlike earlier sustainable development programs, the 2030 Agenda is universal.

The 2030 Agenda is extremely extensive, with 17 sustainable development goals and 169 (The Federal Government, 2022) targets and majority of the goals and targets can be achieved only with support of digital solutions. As was stated in the German Parliamentary Advisory Council on Sustainable Development in 2019 – “Digital technologies must be used as a tool to address social, environmental and economic challenges” (Bundestag, 2019), also in the Forbes article from 2020 year were mentioned 10 reasons why Sustainability needs to be part of the Enterprise Digital Transformation strategy (Forbes, 2020) and there is hard to argue with the listed reasons.

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Within the study empirical research with descriptive research method was carried out using qualitative and quantitative observation methods.

The research was among the SAP corporation business partners (solution resellers, system implementation partners, consulting companies; like Accenture, Deloitte, IBM etc.) in EMEA North region (Europe, the Middle East and Africa) asking few questions to be able to get overall perception on the market readiness to address Sustainability challenges by Digital Transformation.

In the online survey participated 77 respondents, representing different scale partners who are focusing on the different SAP solutions from the SAP portfolio. Each of the partners actively works with tens and serves hundreds of companies (customers), therefore the survey results can be extrapolated to overall market.

The research has the following limitations:

- The survey respondents were SAP company business partners; therefore, the overview tends to represent companies working and planning to implement SAP solutions;
- The research represents the situation in EMEA North region;
- The research was done on the high level and end-customers were not approached, meaning the perception was gain from the companies serving end-clients, therefore the accuracy of the research can be validated within future research with end-clients.

1. Digital Transformation for Sustainability

1.1. Sustainability Agenda

As per Accenture UN Global Compact Study published in June 2021, 62% of CEOs say that the pressure to act on sustainability grew significantly over the last three years, what makes sustainability as a strategic priority (United Nations, 2021).

Over 200 of the world's largest firms estimated that climate change would cost them nearly \$1 trillion in the case of non-action (CDP, 2019).

Leading companies are acting already: 915 companies have signed up for 1.5-degree compatible carbon targets (Science Based Targets, 2022), for example Allianz don't ensure coal fired power plants any longer, Maersk going for zero emission vessels, Walmart taking CO₂ out of supply chain.

Moreover, the consumers are shifting to more sustainable products and services what is proven by the NYU Stern CSB Sustainable Market Share Index, showing 71-times faster growth of sustainable consumer packaged goods compared to not sustainable ones (New York University & Leonard N. Stern School of Business, 2019).

Investors integrating ESG into investment decisions, it can be seen as Global sustainable investing assets have grown 34% between 2016 and 2018, from \$22 trillion to a total of \$30 trillion (McKinsey, 2022). At the start of 2018, global sustainable investment reached \$30.7 trillion in the five major markets, a 34 percent increase

in two years (Global Sustainable Investment Alliance, 2018).

The period of market turbulence and economic uncertainty has further reinforced our conviction that ESG characteristics indicate resilience during market downturns (BlackRock, 2021).

Regulators pushing legislation and taxation. Worldwide, there are 64 carbon pricing initiatives in place or scheduled for implementation, compared to 51 in 2018 and this number is set to grow according to countries' climate pledges (The World Bank, 2022). For example, the EU Green Deal (European Commission, 2019) is how the regulators push legislation and taxation. Cost of recycling moves to retail and CPG sector in 2022 due to EU Circular Economy Package (European Parliament, 2018, 2020).

Employees focus career choices on responsible employers, this is the top concern amongst 1000 Millennial and Gen respondents (BusinessGreen, 2019a). Less than one-third of the Fortune 1000 workforce is satisfied with the actions their employer is taking to mitigate the company's impact on the environment (BusinessGreen, 2019b).

Starting from 21st century there were published number of voluntary agreements and regulations what transforms goodwill into obligations in area of Human Rights and Social Responsibility to address areas were included in United Nations Agenda 2030 and beyond that (United Nations Department of Economic and Social Affairs, 2022).

1.2. Enterprise sustainability triggers by the role of responsibility

The Enterprises having set of Sustainability triggers where certain actions need to be taken and the key-stakeholders need to be in charge for this process by their role and mentioning actions.

CEO (Chief Executive Officer) is in charge of the management and administrative direction of the organization, drives the purpose, vision, and mission of the company that way he/she needs to act also on sustainability topics what are triggered by the need to establish sustainable business among the other imperatives.

CFO (Chief Financial Officer) is in charge of the economic and financial planning of the company, dedicated to increase the value of the company and he/she should be able to embed sustainable business data into financial and economic processes of the enterprise. To allow this the progress measurements and sustainability outcomes reports need to be created.

CIO (Chief Information Officer) looks after the systems of the company that are related to information technology at the process level and focuses on improving the efficiency of internal processes in order to ensure effective communication and keep the organization functioning smoothly. CIO sustainability responsibility can be triggered by the necessity to connect environmental, social, and financial data from across the value chain, and can be done by the implementing sustainability

solutions that accelerate transformation, or in other words accelerates and support the Digital Transformation of the company towards the Intelligent Enterprise.

CSCO (Chief Supply Chain Officer) is responsible for the entire process ensures efficient, cost-effective, and reliable supply and delivery of products and services, whilst also impacting the top line, promoting growth, innovation, and new product launches. The sustainability trigger for this role is the necessity of emissions reduction and ethical material source what requires to optimize supply chain to be more sustainable and profitable.

CHRO (Chief HR Officer) is responsible for developing and executing human resource strategy in support of the overall business plan and strategic direction of the organization, specifically in the areas of succession planning, talent management, change management, organizational and performance management, training and development, and compensation. The sustainability trigger what CHRO should work on is the prioritization of people across the value chain what can be achieved by the respect of the workforce diversity, safety, and human rights.

CPO (Chief Production Officer) who is in charge of creation of products that deliver value to both customers and the business is triggered by the embrace of circularity and by need of the Enterprise to become regenerative. Actions can be taken to address sustainability triggers are eliminate waste and pollution and reclaiming materials to minimize waste and accelerate adoption of circular economy processes.

CSO (Chief Sustainability Officer) is responsible for an organization's objectives and initiatives relating to sustainability, basically in charge of delivery on sustainability goals and achieving compliance with regulations by reporting on the consequences of business actions and elevating brand reputation.

1.3. Digital Transformation for Sustainability

Digitalization is making a big difference in business and society. The market is gradually being filled with digital products and services, creating the need to change traditional business models (Petrenko et al., 2019).

Today, companies are forced to adapt to changes in the global economy and innovative accessibility, whether it is a small or large company with a branch network. Otherwise, the competitor will win, the business partner will find another contractor that is more flexible and adapted to modern business technologies (Panfilova et al., 2020; Ziyadin et al., 2020).

Sustainable value creation comes along with the Business Transformation what nowadays cannot happen without support by the digitalization, what leads towards the Digital Transformation of the Enterprise.

If to consolidate the Sustainability agenda to be able to link it with the digitalization initiatives, that it can be summarized in 3 main points:

1. Meet global obligations.

Deep transparency into financial and non-financial data will address regulations proactively and ensure full

compliance along with integrated, auditable, and real-time reporting.

2. Make processes sustainable and gain efficiencies.

End-to-end solution portfolio, embedded within the key processes, to address circular business models, assess and reduce carbon footprint, reduce waste, drive social responsibility across the entire value chain.

3. Create sustainable products, services and business models.

Gain a holistic insight into data, processes, regulations and industry specific drivers and differentiators across value chains to create new products, services and solutions that reach additional customers, markets, and segments.

To be able to meet above listed points, there are certain actions to be taken where Digital Solutions are playing the mayor role of success:

- Establish a Sustainable Business Strategy.

Ensure sustainability is central to overall business strategy with all corporate functions contributing. Measure progress and report annual sustainability outcomes at the same level of importance as your financials.

- Embed Sustainable Business Data into Processes and Networks.

Use sustainability data within business processes to make sustainable and profitable decisions and measure performance. Then share the sustainability performance data, which could include calculated carbon emissions, water use, recyclability, or labor information, with suppliers, industry associations, regulators, and NGOs.

- Manage Carbon and Climate Exposure Throughout the Business.

Reduce financial and reputational risks by accounting for and managing climate-related emissions across all parts of value chain down to the individual product and service level.

Embrace Circularity and Become Regenerative.

Use operating principles to avoid, reduce, reuse, recycle, and reclaim materials to minimize waste and accelerate adoption of circular economy processes. Going beyond doing "less bad" to adopt approaches to do "more good."

- Prioritize People Across Your Value Chain.

Enhance social sustainability by respecting your workforce diversity, safety, and human rights, developing learning and growth opportunities, and leveraging the power of corporate purchasing.

2. Recent Examples of Enterprises actions towards the Sustainability in Digital Context

Salesforce intensifies sustainability efforts with launch of Sustainability Cloud Scope 3 Hub as well as including "climate" as a topic in the public policy platform.

Salesforce announced new climate obligations for all of its supplier contracts, including requirements to set science-based GHG emission targets, establish plans for reducing emissions, deliver services on a carbon-neutral

basis, and fulfill reporting requirements. It plans to collaborate with suppliers on climate action. They also installed a Director of Ocean Sustainability (Salesforce, 2021; GreenBiz, 2021).

Allbirds who recently started a collaboration with Adidas continues its open-source approach for the fashion industry and is giving away its Carbon Footprint Calculator (Sustainable Brands, 2021).

Google announced that five of its global data center sites are operating near or at 90% carbon-free energy, in large part due to renewable energy projects. To date, Google committed approximately \$4 billion to purchase clean energy from more than 50 wind and solar projects globally through 2034 (Google, 2021).

Unilever puts its Climate Transition Action Plan to an AGM shareholder vote (Unilever, 2021).

Extended Producer Responsibility endorsed by more than 100 leading businesses (Ellen MacArthur Foundation, 2021).

Enterprises actively reforming relationships to tackle the scale of change required, like Salesforce and Accenture partnering to embed sustainability in core areas for customers (Accenture, 2021). EY and Enablon jointly announce a ESG reporting solution (EY, 2021).

Pepsico doubles down on Net-Zero Emissions by 2040 (PepsiCo, 2021). Microsoft to achieve 'zero waste' goals by 2030 (Microsoft, 2020). Citigroup to commit to net-zero financed emission (Citigroup, 2022)

Transparency and ESG integration becoming more critical with data playing a key role. McKinsey acquisition of Vivid Economics and Planetrics (McKinsey, 2021). Sphera developed Advances ESG Benchmarking with Product Sustainability Data (LinkedIn, 2021).

And there are hundreds of similar examples when companies working on Sustainability agenda by executing various actions, including Digitally Transforming their Enterprises.

Climate Change and ESG risks determined as most important non-financial risk for banks with the potential to reshape their credit portfolios. Rating agency Moody's expects a credit squeeze for carbon-intensive industries following proliferation of net-zero targets across industries and governments (Moody's, 2022; BSG, 2021)

The Value Reporting Foundation was created through merger of IICB and SASB aiming at enabling organizations to move from buy-in to action (CDP, 2021).

House Passes ESG Disclosure Simplification Act of 2021. Bill requires an issuer of securities to annually disclose to shareholders certain environmental, social, and governance metrics and their connection to the long-term business strategy of the issuer (Congress, 2021).

U.S. Securities and Exchange Commission's decision to open public comments on climate change disclosures to inform its impending guidance (U.S. Securities and Exchange Commission, 2021).

World Economic Forum created guidance on how companies can ensure Sustainability reporting (World Economic Forum, 2021a, 2021b) and there are number

of other actions happening around the Sustainability topic right now.

Substantial emissions gap between the levels of emissions in 2030 projected in the NDCs and the lower levels that would be consistent with the temperature limit of the Paris Agreement (Climate Action Tracker, 2022).

China's 14th Five-Year Plan until 2025 energy and climate stand out as central-policy priority (Business for Social Responsibility, 2021). US to cut its greenhouse gas emissions 50% to 52% below 2005 levels by 2030 (The New York Times, 2021).

Transition to a net zero world by 2050 is only possible with massive transformation in the energy sector. Recent report (2020–2022) by International Energy Agency (IEA) reveals investment needs in renewables to achieve goal of becoming net zero by 2050. Potential of solar and wind energy is 100 times as much as global energy demand (International Energy Agency, 2022).

UN Framework Convention on Climate Change (UNFCCC's) Initial NDC Synthesis Report measures the progress of national climate action plans (Nationally Determined Contributions or NDCs): "Today's interim report from the UNFCCC is a red alert for our planet. It shows governments are nowhere close to the level of ambition needed to limit climate change to 1.5 degrees and meet the goals of the Paris Agreement" (United Nations, 2021).

EU regulations and reporting requirements having implications for companies, e.g., Sustainable Finance Disclosure Regulation (2021) impacting businesses' capital-raising activities and disclosure requirements, EU Conflict Minerals Regulation requires EU importers to carry out due diligence on their supply chain (European Commission, 2022) etc.

3. Market readiness overview to address Sustainability challenges by Digital Transformation

The authors of the study conducted research among the SAP corporation business partners in EMEA North region asking few questions to be able to get overall perception on the market readiness to address Sustainability challenges by Digital Transformation. The questions were:

- How would you rate your customers' Sustainability Maturity and Digital Maturity to support the transformation towards the Sustainable Enterprise?
- How many of your customer have secured budget for Digital Transformations to address Sustainability challenges?
- What were the main justifications for the Sustainability Digital Transformational business cases from your clients?

The maturity levels represented in the Figure 1 shows that companies for number of years were focused mainly on Digital transformations and were not closely following Sustainability agenda until the EU regulations were issued or announcements were done, that regulations

will follow. The majority of the companies, by the assessment of the SAP partners, are on the mid-level of the Digital maturity, meaning that the Digital transformation has been formulated in the companies, number of strategic projects were released and some of them went live.

From the Sustainability Maturity point of view, companies in the region are just at the beginning of their journey and currently actively discovering options to achieve Sustainability targets.

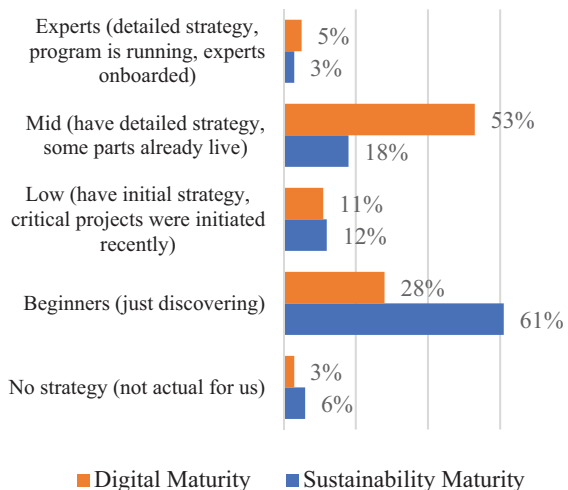


Figure 1. Digital and Sustainability Maturity levels

The responses on the question about the secured budget for the Digital Transformation to address Sustainability challenges represented in the Figure 2, shows that majority of the SAP partners tend to assess their customers in lowest range, i.e. by the opinion of 42% of respondents only 10–30% of companies have secured their budgets for transformation, and 34% of respondents believe that the number of the companies even less, below 10%.

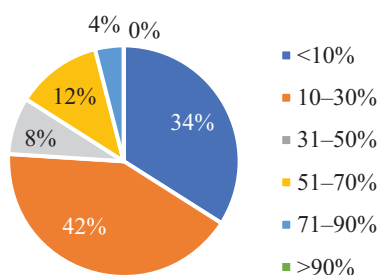


Figure 2. Number of companies with Secured Budget for Digital Transformation to address Sustainability challenges

To validate the point of view on justification for the Digital Transformation towards Sustainability, the research on transformation driving factors was done by asking respondents on their client’s reasons for transformation mentioning in their business cases. The results can be found in the Figure 3.

As the main compelling event and justification for the transformation serves the regulatory requirements (28%) and the customer demand serves as a second mayor factor (20%).

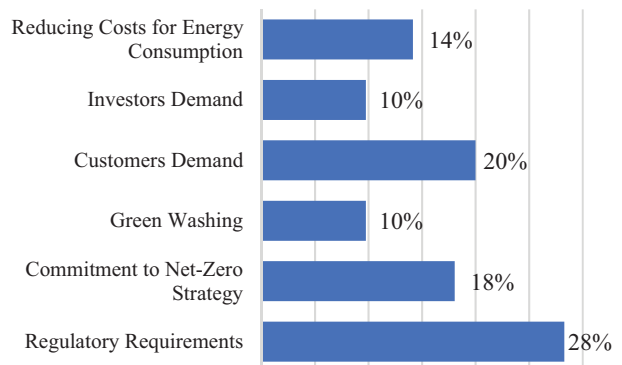


Figure 3. Justifications for the Sustainability Digital Transformational business cases

Conclusions

Sustainability agenda will year after year becoming more actual and strict regulations are developed and applied. The way how to comply is start measuring how Sustainable each enterprise is and it’s possible only using Digital solutions, i.e., the Sustainability analytics need to be based on the data and data need to come from the core business operations.

With this is it very reasonable for companies to go the Digital Transformation journey to ensure at least compliance to the regulations.

Most of the companies have accelerated its Digital Transformation initiatives in 2020 what was the response on the Crisis, when Digital enablement was a key to keep the customers and market positions. Referring lessons learned by companies from the Crisis, there is immense opportunity to capture the value of data to drive more sustainable products and solutions.

Companies need to embed sustainability insights into end-to-end industry specific business processes extended into business network. That can enable deep, industry specific insights and intelligence combining operational, financial, and experiential data across the value chain. These insights can be embedded into business processes to enable sustainability at scale across the enterprise. And all the above mentioned can be defined as an expected outcomes from the Digital Transformation of the Enterprise.

Referring the research results the author observes that there are only few flagship companies closely working to ensure their operations and overall vision is in alignment with Sustainability agenda, but in overall there is slow movement in Digital Transformations towards addressing Sustainability targets from regular market participants, meaning that there are possible potential improvements in the Sustainability agenda adoption speed by the companies in EMEA North region. This topic can be as a potential subject for further detailed research with the purpose to develop potential accelerators for such transformations.

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