

Business and the Fourth Wave of Environmentalism

Executive Summary



A

new wave of environmental innovation has the power to transform industries, democratize information, and make environmentalism a mainstream value. And top business executives across industries are embracing emerging technologies as a means to improve

both business and environmental performance. With this report, Environmental Defense Fund (EDF) examines how executives position themselves at this unique intersection of business, the environment and technology.

To better understand how emerging technology is empowering business leaders to raise the bar on sustainability performance, EDF hired the opinion research firm KRC Research to conduct a study of how business leaders view and adopt a set of seven technology innovations defined as “Fourth Wave” in the context of business and environmental goals. This December 2017 survey of more than 500 top executives (vice president or above) at corporations with more than \$500 million in revenue found that a majority of executives see emerging technologies driving greater alignment between business and environmental goals.

This report breaks out results by industry, executive level, company size and specific technology. Industries represented include: retail, manufacturing, energy, technology and finance. Company size ranges from \$500 million in revenue to \$5 billion-plus, and executive respondents are broken out by VP/SVP and C-suite. Technologies examined are: blockchain, data analytics, sensors, automation technologies, sharing technology, mobile ubiquity and dematerialization.

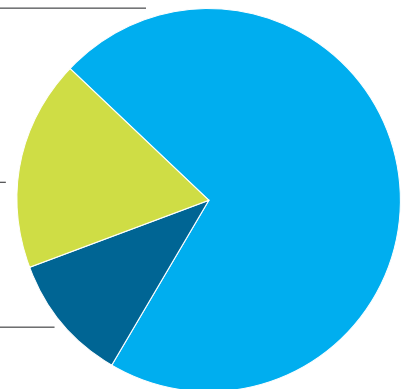
Over 70% of business leaders see greater alignment between business and environmental goals.

Relationship between business objectives and environmental goals now vs. five years ago

72%
More closely aligned

18%
No change

11%
More often at odds



Major findings include:

ALIGNED GOALS

More than seven in ten business and technology executives see their business and environmental goals more closely aligned than five years ago; 60% of whom cite Fourth Wave technology as a driver.

EXECUTIVES AGREE

86% of executives agree that Fourth Wave technology can help businesses' bottom line as well as improve their impact on the environment—a figure that increases to 91% among those in the C-suite.

NEW THINKING

Three in four top executives consider the environmental impact of each technology when deciding whether to implement it.

TAKING ROOT

Seven in ten survey respondents reported that Fourth Wave technologies offering environmental benefits have already taken root in their industries.

TECH LEADS

Of the five industries surveyed, not surprisingly, the technology industry leads the field in Fourth Wave implementation, while the financial industry lags.

COMPELLING REASONS

Over three-quarters (77%) of business leaders find the potential to increase their bottom line, improve their brand's reputation, or differentiate themselves from their competitors as extremely or very compelling reasons to implement a new technology with environmental benefits.

DATA ANALYTICS

Data analytics, the most implemented innovation, is seen as having the biggest potential impact on an organization's bottom line, environmental footprint and brand reputation.

MOST PROMISING INNOVATIONS

Executives see sensors and data analytics as the most promising innovations; however, many do not yet fully understand blockchain technology and its potential.

MOST POWERFUL WAVE YET

Most business leaders believe the Fourth Wave of environmental innovation will be the most powerful wave yet, with data analytics, sensors, social platforms and automation technologies together outperforming Third Wave innovations.



The emerging wave of environmental innovation includes game-changing technologies that will supercharge business sustainability and usher in a new level of leadership, collaboration and impact.”

Tom Murray, VP, EDF+Business

Overall, business and technology leaders see their business and environmental goals becoming closely aligned. And while there are differences by industry, they generally agree that this alignment is driven by emerging technology.

Leaders working to raise the bar on corporate sustainability have a new wind at their back. Recent technological breakthroughs are poised to transform the way business is done. As sensors, information technology and analytics—as well as emerging innovations such as blockchain—increasingly shape business strategy and reward corporate responsibility, the result will be positive change that lets both business and the environment prosper.



1

Late 19th Century



2

Mid 20th Century



3

Late 20th Century



4

Today

The four waves of environmentalism

Environmental protection is entering a new era, its fourth distinct evolution in our history. This “Fourth Wave” of environmental innovation builds upon the success of the three previous waves and is driving greater alignment between business and environmental goals.

The recognition of the need to protect our environment began with the government land conservation efforts in the late 19th century and gained momentum in the Teddy Roosevelt-era. The mid-20th century saw the second evolution with a wave of antipollution efforts which broadened to include legislation to protect wildlife and natural resources. And when Environmental Defense Fund pioneered a groundbreaking partnership with McDonald’s in 1990 to reduce packaging waste, a new focus on market-based solutions gave birth to the Third Wave. For the past three decades, partnerships between U.S. corporations and environmental NGOs

have used aggressive goal-setting, problem-solving and market-based frameworks to achieve environmental goals and make sustainability standard business practice.

Now a powerful Fourth Wave of environmental innovation is emerging, giving business the power to scale solutions as never before. It applies cutting-edge technologies to supercharge the work of the previous waves, making environmental partnerships more productive and measurable. Just as innovations such as sensors, automation, data analytics and artificial intelligence can increase efficiency and reduce costs for businesses, they can be used in tandem to lower resource consumption, decrease pollution and greenhouse gas emissions, and reduce waste streams. What is good for the bottom line is often good for the environment as well.

The Fourth Wave of environmental innovation is supercharging corporate sustainability

Executives charged with balancing business and environmental goals recognize the increasingly influential role that technology plays in raising the bar for corporate sustainability. Emerging technologies are enabling businesses to fast-track sustainability as never before: making global supply chains more transparent and trackable; surfacing valuable data on previously invisible emissions; and helping reduce packaging, waste and energy use.

This report examines how seven emerging technologies are changing the way the corner office perceives sustainability.

Exploring Fourth Wave technologies

A broad spectrum of technological innovations has the potential to drive both business and environmental goals for companies. The technologies considered in this report include:

BLOCKCHAIN

uses cryptography to provide a secure means of recording transactions in a public ledger, which makes it valuable for storing and manipulating sensitive data such as financial, medical, identity, voting or chain of custody information.

SENSORS

have proliferated in recent years, allowing detection, visualization and measurement of a wide variety of variables.

AUTOMATION TECHNOLOGIES

allow processes to be controlled without human involvement, often increasing efficiency and reducing waste.

DEMATERIALIZATION

involves the reduction of material use in production, packaging, transportation and other business functions.

DATA ANALYTICS

involves processing information to gain insights. In practice, it can range from simple statistical analysis to sophisticated data mining and machine learning.

SHARING TECHNOLOGY

allows different organizations to collaborate more effectively by sharing information and knowledge.

MOBILE UBIQUITY

allows organizations to communicate and share information with customers, employees, contractors, partners and others through an ever-increasing number of connected mobile devices.