



# THE DRIVE FOR SUSTAINABILITY

Over the past few years, it has become more common to open a newspaper or website and find at least one article focused on climate change, resource depletion, or environmental degradation. Whether or not you agree with the writer's stance, ignoring the topic is becoming increasingly difficult. In response, a global push towards sustainability has resulted in fresh ideas and innovative technology. Several disruptive concepts have emerged as potential solutions but they still face many challenges. This article will review a few of these initiatives, discussing how each may contribute to the health of the planet and outlining obstacles that could stand in the way.

## DISRUPTIVE IDEAS FOR SUSTAINABILITY

Within the sustainability space, several ideas are creating disruptive and positive change, offering the ability to reduce carbon emissions and change how businesses interact with the environment. Some initiatives are more advanced, while others are at the beginning stages of implementation.

A few examples of sustainable projects are as follows:

- **Drone delivery:** Though the technology is still new, drone delivery programs can potentially revolutionize the retail and transportation industries. Upon complete rollout, they could bring greater efficiency to the supply chain, reducing delivery times while decreasing carbon emissions.
- **Robotic ocean trash collection:** Advanced technologies are utilized to design vessels capable of identifying and removing trash from the ocean. Ridding our waterways of debris and plastic can profoundly impact marine ecosystems and the sustainability of our oceans.
- **Vertical farming:** Growing crops using vertical farming technology increases yield per square meter. It requires less water and land, allowing more produce to be grown closer to urban centers. In turn, this can further reduce agriculture's carbon footprint.
- **Electric vehicles:** Traditional gasoline-powered cars have taken a backseat recently, with cleaner and more sustainable electric vehicles becoming more popular. While we are all familiar with personal vehicles, such as the Tesla, efforts are being made to expand further. There is a push to use electric technology for larger automobiles, buses, and transport trucks. These initiatives can help to reduce the environmental impact of the transportation sector.
- **Circular economy:** A circular economy is a system that promotes reducing waste through reuse, regeneration, and recycling. The concept aims to increase resource efficiency and minimize consumption's effect on the planet.

Let's dive into a couple of these ideas further.

## DRONE DELIVERY

Drone delivery technology is easily classified as disruptive because it is likely to improve the sustainability of transportation and logistics. The ability to deliver goods by air is appealing from an environmental standpoint as it can potentially reduce a business's carbon footprint by minimizing the need for other delivery vehicles. It can also significantly decrease the time a vehicle is spent idling while in traffic within a major city center.

Despite the apparent benefits associated with drone delivery, there are significant challenges. Building the infrastructure necessary for operations to expand across the country can be costly and even impractical. There are also safety concerns and legal barriers. Regulations exist for all airspaces, but they can be particularly restrictive over highly populated areas, large cities, and close to airports. Of course, these rules are in place to promote safety and prevent collisions, though they can stand in the way of drone delivery initiatives realizing their full potential.

## ROBOTIC OCEAN TRASH COLLECTION

With over [70% of the globe](#) covered by the earth's oceans, it should be no surprise that many sustainability initiatives target waterways. And for a good reason. An ever-growing presence of trash within the ocean is causing damage to marine life and altering the ecosystem. Robotic ocean trash collection utilizes cutting-edge robotics and artificial intelligence technology to help reverse the trash problem and clean up our planet's oceans.

By collecting trash from the ocean, these robotics programs can reduce harm to marine life. They can also target plastic waste specifically. Plastic can be especially dangerous due to the microplastics left behind when larger pieces are broken down. These tiny plastic particles end up in the water, working their way to marine animals, and can even be ingested by humans. Removing plastic waste from the ocean can help to lessen the problem and create more sustainable oceans.

Several businesses and nonprofits are working with this technology throughout the world. One of the nonprofit organizations, The Ocean Cleanup, has [partnered with Coca-Cola](#), receiving funding from the corporation to further its objectives. The project involves utilizing "solar-powered cleanup systems" to identify and remove plastic waste from rivers worldwide to prevent it from ending up in the ocean.

While cleaner oceans have numerous benefits, significant challenges stand in the way of implementing automated trash collection on a broader scale. The technology required to build and utilize these vessels is costly, with scalability being an even more expensive goal. There are also many technical limitations, as navigating the vast ocean area can be complicated, especially under dynamic currents and weather conditions.



## CHALLENGES

Though sustainable initiatives hold great promise, many obstacles stand in the way. While some are specific to the project, many known issues are shared.

With many of these ideas taking advantage of cutting-edge technology, widespread implementation can be difficult. Designing, building, and expanding the necessary infrastructure can be costly and time-consuming. The supply chain can also pose additional problems as not all materials are readily accessible, especially at affordable prices. Overcoming this challenge, or even shifting towards a circular economy, will require significant changes to the existing nature of these supply chains and current business models.

Legal and governance issues have become increasingly complex surrounding these projects. Neophyte technology invites questions on a regulatory front. Governing bodies are now responsible for developing laws and assembling advisory boards that could shape entire industries. The goal of this regulation should be to promote safety, transparency, and accountability rather than suppress innovation.

## TAKEAWAY

A global focus on sustainability has helped spur initiatives to reduce carbon emissions and lessen or reverse humans' environmental impact. Though sustainable ideas have significant potential, implementation and regulatory barriers remain.

Regardless of the mounting challenges, disruptive technologies are necessary to tackle climate change and reduce carbon emissions. Businesses and major corporations are working to overcome hurdles to realize the potential of these ideas. With societal support and further backing from investors, the stage is set for even more innovation in the years ahead. It is (hopefully) just a matter of time before we see even more sustainable solutions become a reality, driving positive change and building a brighter future for the planet.



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