People, Planet, Purpose and… Technology?
Circular Economy spawning new breed of tech-savvy enviro-preneurs

Historically, environmentalists have been somewhat at odds with the technology world, which is energy and resource intensive. Of course, we now know that optimizing the use of resources and reducing energy consumption and waste can also best be accomplished with technology. Remote sensing, monitoring, material tracking and the Internet of Things (IoT) are the building blocks for closed-loop systems now referred to as "The Circular Economy". As a result, a new generation of entrepreneurs is leveraging their technical savvy for purposeful, impactful work.

What is a circular economy? Our traditional take-make-(maybe recycle)-dispose economic model downgrades materials and is energy intensive. Recycling is largely the responsibility of the consumer. In a circular economy, products are born restorative and regenerative by design. In other words, products are born into a system designed so that they remain at the highest resource value and never become waste.

The growing global focus on developing circular economy systems is largely dependent upon the ability of technology to keep us connected with 'things'. Knowing where a product or 'thing' came from, where it is, what it is made of, what condition it is in and how it is being utilized supports both producer responsibility and conscientious consumption; enabling both manufacturers and consumers to become responsible stewards of the products they produce or own.

Circular economy is not a fad. It's a business opportunity.

Late last year, the European Commission adopted a Circular Economy Package and Mandate that earmarked over $6 billion toward development of circular economy systems. The World Economic Forum predicts that over $1 trillion a year could be generated by 2025 for the global economy and 100,000 new jobs created within the next 5 years if companies focus on 'circular' supply chains to increase reuse, remanufacturing and recycling.

This is spawning a new breed of tech-savvy environmental entrepreneurs (or enviro-savvy tech-entrepreneurs!) who are leveraging the Internet of Things (IoT) and supporting technologies such as radio frequency identification (RFID) and other automatic identification and data capture (AIDC) technologies to support circular economy systems.

Eon, a fashion-tech company, is embracing circular economy principles by using technology to up-cycle textiles to their highest and best use. By using item-level RFID tags to sort apparel and textiles at the end of their lives, Eon enables the cascade of each type of textile to more suitable and higher-value applications than is the case today. For example, the fibers from a 100% cotton sweatshirt that can no longer be worn can be fully recovered and made into a new product, as opposed to

fabric blends that may not be fully recoverable. By being able to identify itself, the sweatshirt will be put to its highest reuse rather than made into rags that are ultimately disposed of.

Sanus Connect is an Internet of Things (IoT) company providing secure, hosted data solutions to better manage physical assets in buildings and process plants. IP-enabled sensors and controllers help facility managers and owners know the condition of their assets and gain better control over how they are utilized. This helps reduce energy usage and extends the lifecycle of equipment. Longer and better performance translates into reductions in loss, waste and energy usage.

Circular economy opportunities are also gripping Fortune 500 companies. Avery Dennison, in the label business since 1935, is also a leader in RFID tag design and production. Avery recently partnered with Evrythng, a company founded in 2011 that offers an IoT Smart Products Platform-as-a-Service that connects consumer products to the Web. In April, the companies announced a deal that will connect 10 billion pieces of apparel to the internet over the next 3 years. This will provide consumers with information such as where products were manufactured, where they can be recycled and much more.

Technology innovations for circular economy solutions abound. Food Cowboy uses location-based technology to route food 'waste' to the highest and best users including food banks. Winnow developed a system to cut restaurant waste in half using a smart meter, electronic scale and cloud platform to track what is being thrown away and its value. Stuffstr is launching a mobile app that helps users reduce clutter and keep things out of landfills by connecting them to the nearest donation or recycling center.

Unlike any time before, professionals, both young and old, are seeking work with a purpose beyond the paycheck; work that benefits people, planet and the economy. Companies providing sensing, monitoring and tracking technologies supporting circular economy models can inspire employees, accelerate adaptation and play a significant role in creating a healthy, sustainable environment.