CASE STUDY: Coca-Cola

The Coca-Cola Company touches the world's consumers like almost no other business. Underlying its 2011 worldwide revenues of \$46.5 billion was an average of more than 1.7 billion servings every day in 206 countries. Fundamental to Coca-Cola's success in the United States and around the world has been innovation that achieves both environmental benefits and financial goals. In 1969, it commissioned the first-ever environmental life-cycle assessment of packaging. In 1991, it introduced the first plastic beverage bottle with recycled material. And in 2009, it introduced PlantBottle packaging: the world's first recyclable beverage bottle made partially from plants. Coca-Cola's PlantBottle packaging initiative demonstrates how research and innovation in global companies often foster innovation and support jobs in younger small businesses that are part of Coca-Cola's international supply chain.

PET (which stands for polyethylene terephthalate) is one of the world's most widely used plastics, but historically it has required petroleum and other fossil fuels as a key ingredient. In their ongoing efforts to improve the company's packaging, Coca-Cola researchers discovered how to produce PET from plant material rather than fossil fuels — without sacrificing performance characteristics such as recyclability. This biobased plastic could be made in laboratories, but the challenge became making this scientific breakthrough commercially scalable. A first success was building a viable global supply chain that used plant materials for one of the two key ingredients used in PET plastic. After careful study, Coca-Cola chose to use locally sourced sugarcane and sugarcane waste from Brazil, a source of biomass widely recognized for its favorable environmental footprint and its sustainability outside of the food stream.

Since the package launched in 2009, PlantBottle packaging has eliminated the equivalent of almost 100,000 metric tons of carbon dioxide emissions — the equivalent of 200,000 barrels of oil. Coca-Cola is moving the global PET market with PlantBottle packaging by setting a goal of expanding from 30 percent plant-based plastic to 100 percent plant-based plastic by the year 2020.

To achieve this goal, Coca-Cola turned to highly specialized research partners that are each young small businesses. In December 2011, Coca-Cola's R&D team announced multimillion-dollar partnership agreements with three leading biotechnology companies to accelerate development of 100 percent PlantBottle. Virent, located in Madison, WI, was founded in 2002 and employs about 120 colleagues; Gevo, located near Denver, CO, was founded in 2005 and also employs 120 people; and Europe-based Avantium was founded in 2000. Each company is pursuing different technologies, but the research efforts of all three have been boosted by Coca-Cola's investments.

These breakthroughs demonstrate the symbiotic collaboration between large and small businesses. Coca-Cola is relying upon the ingenuity and breakthrough technical skill of these entrepreneurial businesses, and these businesses are enabled through the resources of their larger partner. Said Gevo CEO Patrick Gruber, "New technologies need champions. The Coca-Cola Company is in a unique position to drive and influence change in the global packaging supply chain with this development. You cannot ask for a better champion."