PLUG AND PLAY MOBILITY

STARTUPAUTOBAHN powered by PLUG AND PLAY

INNOVATION PARTNERSHIP SUCCESS STORIES

The Success Story of BASF, Motherson and Porsche

How a startup disrupted an entire mobility value chain with digital CO2 tracking

Reducing the carbon footprint in their end-to-end manufacturing process was a mutual goal for BASF, Motherson and Porsche, but they needed to exchange reliable and complex data for that. So they implemented CircularTree's scalable and secure solution CarbonBlock, a blockchain solution that calculates real CO2 data and enables the corporations to understand where CO2 emissions can be reduced.

The Innovation Partnership Success Stories is a series that focuses on key projects that emerged through our Mobility platform.

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PLUGANDPLAY

We connect the best technology startups and the world's largest corporations.

FIND OUT MORE

WE HELP YOU IN EVERY STEP OF YOUR INNOVATION JOURNEY

Partnering with the largest organizations worldwide gives us a line of sight to identify the main pain points affecting each industry. We then focus on sourcing the best startups that can provide the best solutions to these challenges.

By collaborating with startups, corporations increase operational efficiencies, lower costs, find new product lines, and become more innovative from the core.

30,000+

Carefully-curated international startups in our network

500+

Corporate Partners

30+

Offices Worldwide

Global Reach

One of our greatest ambitions is to make our ecosystem accessible wherever you are. With offices across the world, we're proud to be the world's largest innovation platform by geographic reach.

Background

The supply chain of typical manufacturing company creates more than 80% of total green house gas emissions resulting from production*. While manufacturers are well aware of that problem, it is very difficult to manage carbon emissions of their upstream suppliers due to limited information on the complex underlying material flow.

As you can only manage what you can measure, tackling the emissions adequately will require calculating and minimizing the carbon footprint of products throughout the entire supply chain of manufacturers.

Corporate Partners

BASF and Motherson are key partners of Porsche's supply chain. With providing key raw materials, BASF is one of the most important global **Tier 2** suppliers in multiple industries. Motherson converts BASF's materials to develop car components as they are one of the biggest **Tier 1** automotive suppliers worldwide. Porsche as the **OEM** then assembles these components into the final car.

In order to create the whole picture of a car part's carbon footprint, the involvement of every player in a car's value chain is inevitable, which is why the three players teamed up for this challenge.

Connection

With its commitment to producing cars with a low carbon footprint Porsche set out to leverage breakthrough technologies and strong partnerships along its value chain. Both BASF and Motherson share the same ambitious goal. That BASF had already learned about a potential solution came at the right time for the collaboration set up.

BASF, Motherson, and Porsche's Environment & Product Sustainability department made the connection during a Plug and Play networking event and together they picked up conversations with Startup Autobahn's startup CircularTree.

*Source: Starting at the source: Sustainability in supply chains, McKinsey & Company

Startup

CircularTree

CircularTree's vision is to make it simpler and safer for organizations to tackle their responsibilities along the supply chain. Their solution CarbonBlock offers every player in the value chain the opportunity to make use of one common tool to track data which can be integrated in the existing IT landscape and be scaled easily.

Goal

The reduction of CO2 footprint plays a major role for a sustainable future on this planet. One of the most effective ways to tackle this issue is to reduce the carbon footprint in supply chains. But to do that, emission data need to be made available.

This project's goal therefore was a transparent transmission of real CO2 data along the supply chain. They needed to find a tool that enables data exchange in a more standardized and efficient way. This means complexity and a large amount of information which has to be processed.

Solution

The challenge is to find the right balance between transparency and maintaining competitive advantage and protecting IP. A Blockchain solution creates trust in the system since data is immutable and every company maintains ownership about their curtail information.

CarbonBlock provides the actual carbon footprint of parts and materials in the supply chain. This allows customers to compare the carbon footprint of suppliers and set targets for further reduction. With this process OEM's can ultimately achieve carbon neutral products.

The Project

To calculate the carbon footprint of a single car part multiple variables have to be taken into account, like design, choice of material, processing, and logistics. This complex data is often not available or very difficult to collect across the entire supply chain.

In order to see the real carbon footprint of parts and materials a scalable and secure solution is needed that spans across all participants of the value chain and connects to the Enterprise Resource Planning Systems (ERPs).

CarbonBlock from CircularTree enables companies to measure and manage the upstream carbon footprints of parts using smart contracts based on blockchain technology. That has the advantage that legitimate information can be shared while critical information and IP can be maintained confidential.

CircularTree's process is straightforward — they provide a simple data input template which automatically generates and exports non-confidential product carbon footprint information with CarbonBlock's technology. This piece of information is added and recorded securely in the blockchain and can there be audited any time.

A Proof of Concept in only 3 months:

CircularTree built a blockchain based model in a 3-months PoC representing the value chain of **one car part,** the front bumper. The model was used to validate the calculation of the carbon footprint of that part and was basis to identify the CO2 hotspots in the supply chain and to initiate **carbon emission reductions.**

Based on the PoC model, **additional car parts** can be added to the blockchain in an approach to expand the calculation tool.

Detailed Timeline

CircularTree

CircularTree x Daimler
In Program 7 at STARTUP AUTOBAHN Daimler and CircularTree conducted a first pilot project. Awareness of the solution was created.

NOV 2019

BASF The Chemical Company

BASF DeepDive & Meetup with STARTUP AUTOBAHN
CircularTree pitched at BASF's Deep Dive and Meetup about "Customer Centricity and Operational Excellence", co-hosted by Plug and Play. In the one-on-one meetings of the Deep Dive, BASF and CircularTree discussed possible pilot projects.

FEB 2020

motherson

PORSCHE

STARTUP AUTOBAHN Expo Day 7
At the Expo Day of Program 7, Daimler and CircularTree presented their successful pilot project. Through the event's networking opportunities, CircularTree, BASF, Motherson and Porsche exchanged tech interests and agreed on a cross-collaboration PoC project in Program 8.

FEB 2020

STARTUP AUTOBAHN Selection Day
Being part of the top 100 startups that were scouted for the upcoming Program 8 at STARTUP AUTOBAHN, CircularTree was voted into the Batch.

APR 2020

STARTUP AUTOBAHN Kick Off Program 8
With the official Kick Off of Program 8, the cross-collaboration PoC project of CircularTree, BASF, Motherson and Porsche about Product Carbon Footprint Traceability started.

SEP 2020

STARTUP AUTOBAHN Expo 8
CircularTree, BASF, Motherson and Porsche presented their project at STARTUP AUTOBAHN Expo 8 and won the Plug and Play Global Innovation Award with their cross-collaboration project: "Digital CO2 Tracking along the Value Chain".

Take Aways

COLLABORATE TO BUILD TRUST

Listen to each other, be open to learn about the issues of every partner and then find a consensus. Using blockchain technology is a great way to respect proprietary information while at the same time build trust into immutable data in your partner network.

VALIDATE SOLUTIONS WITH OTHERS

The more partners are involved, the more data can be taken into account and the more detailed calculation can be realized. The goal is to share and discuss this solution with the automotive ecosystem and validate the tool with more material suppliers, Tier 1 and OEMs.

USE THE ECOSYSTEM

Plug and Play's ecosystem is an amazing source of knowledge and collaboration opportunities. Be open to collaborate with associated partners within and outside of your industry to make use of the vast know-how and project possibilities.

How We Can Help

We are the ultimate innovation platform, bringing together the best startups and the world's largest corporations. Collaborating with startups is a great source of inspiration and innovation … but can be a challenge. Let us show you how to adopt the concept of open innovation to help your business succeed.

Watch the full video of the case study here:
CO2 Tracking along the value chain

Plug and Play is a global corporate innovation platform which helps to connect corporate partners to startups in order to help solve their greatest challenges. We also operate as a venture fund and startup ecosystem. To date, we have helped over 3,000 early-to-growth stage startups raise over $3.5 billion. Plug and Play is consistently ranked among the most active VCs in Silicon Valley.

For additional information, please contact
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