



TG62-REUSE Solution Brief

The Problem

Single-use disposable plastic bags are suffocating the planet, with 60,000 plastic bags being consumed in the U.S. every 5 seconds. Plastic bags we use in our everyday life take 10-20 years to decompose. They do not break down in landfill sites, over time they release dangerous chemicals.

99Bridges wants to be a part of the solution.

How many times you walked into a grocery store and realized that you forgot to bring a bag? So, you end up purchasing yet another plastic bag. We worked with our partner [Returnity](#) to design a reusable shopping bag to make it easy for you take the right step towards a more sustainable future.

Our Solution

We called it TG62-REUSE. It is designed to make reusing shopping bag easy, fun, digital, rewarding, and personal. It is super easy because each smart bag is equipped with an RFID chip and a QR code. Forgot to bring your bag? No problem. Just get another one and register it into your mobile app. When you reuse your bag next time, you will get



reward points. It is automatic. There is nothing you need to do. The mobile app simply keeps track of everything like how many smart bags you have and number of times they have been reused. As you accumulate reward points, different levels of Sustainability Badges will be awarded to you on the app's personal dashboard.

All the reuse actions are converted into a personal sustainability score based on greenhouse gas emission (CO₂e) reduction. Each person becomes aware and accountable to his/her sustainability actions and know how his/her actions contribute to a more sustainable future.

TG62-USE can operate as a standalone system, but it is far more effective and powerful when combined with [TG62-RECYCLE](#) and [TG62-REFILL](#). Together, they create a network effect that accelerates the transition to a more sustainable living. The solution consists of the following components:

1. **TG62-REUSE-BAG** – working with [Returnity](#), our strategic partner, we designed a smart bag that is both functional and smart. The smart bag is equipped with both RFID and QR code to maximize its trackability while minimizing human interventions for data collection.
2. **TG62-EDG-RFID** – Edge Data Guardian (EDG) is a digital appliance, a hardware and software edge computing device. In the TG62-REUSE configuration, the EDG is equipped with a RFID scanner to detect and read the data from the smart bags for real-time data processing.
3. **TG62-MOSAIC** – a consumer mobile application called MOSAIC designed to encapsulate our REFILL, REUSE, and RECYCLE solutions seamlessly into a single social app. It is used for user profile, account management, order processing, item inventory, rewards tracking, social network, and user support.
4. **TG62-MOSAIC-CONTROL-CENTER** – a web-based app for the city or sponsor organization to operate the solution. It has a DASHBOARD to give vital statistics and analytics to the city or sponsor organization about the reuse operation. It covers essential functions to securely keep track of PEOPLE, THINGS, and PLACES data in the entire ecosystem.

Benefits of our Solution

TG62-REUSE makes using reusable bags for everyday shopping easy and rewarding. It is a fully digital and frictionless experience integrated seamlessly into the user's everyday life. The solution is designed with a simple goal – eliminate single-use plastic bags from our everyday life!

1. The reusable shopping smart bag enables digital tracking and data collection for analytics and modeling
2. Each smart bag registered to individual's mobile app creates accountability for sustainability actions



3. The sustainability social network on the mobile app promotes friends & families and community level engagement to make reusing shopping bags fun, engaging, and rewarding
4. The reward points and sustainability achievement badges built into the mobile app encourages responsible behavior for everyday living, and significant cost savings to participating retailers
5. The in-app marketing features such as coupons and ad banners enable retailer direct access to customers local to their precinct
6. Reuse actions are converted into carbon dioxide emission (CO₂e) reduction metric, giving participants meaningful data on how they are contributing to a more sustainable environmental future

Who are the target customers?

TG62-REUSE solution is designed for cities and retail chains looking to eliminate single-use plastic bag from everyday shopping such as grocery. Our solution brings IoT technologies and mobile app into the process to create a game changing way to engage the digital and socially conscious generations.

Retailers such as Walmart, Kroger, Tesco, Target, Loblaws and the like looking to significantly reduce single-use plastic bags circulation can achieve operational savings while contributing to the environment.

Cities and municipalities looking to accelerate their sustainability goals now has a vehicle to create a self-sustaining program.

The role of TG62 Distributed Data Exchange

Participating retail stores are equipped with our Edge Data Guardians for real-time collection of data from the reusable shopping smart bags. All data captured and processed are safely encrypted and sent to the operator's data center or private cloud. The Edge Data Port at the operator's data center or private cloud will then aggregate, anonymize, and further process the data to create a data catalog for external sharing with the operator's approved data subscribers. The subscribers are individuals who need to use the data to perform data analytic functions, such as planning, forecasting, behavioral analysis, demographic preference, etc. They could range from employees of the operator's ecosystem partner to marketing companies looking to analyze behavioral patterns, or even governmental agencies. All data, sensitive and anonymized, are securely stored at the operator's data center or private cloud. The Edge Data Bridge is the only component exposed to the outside world for the purpose of sharing the data catalog.