



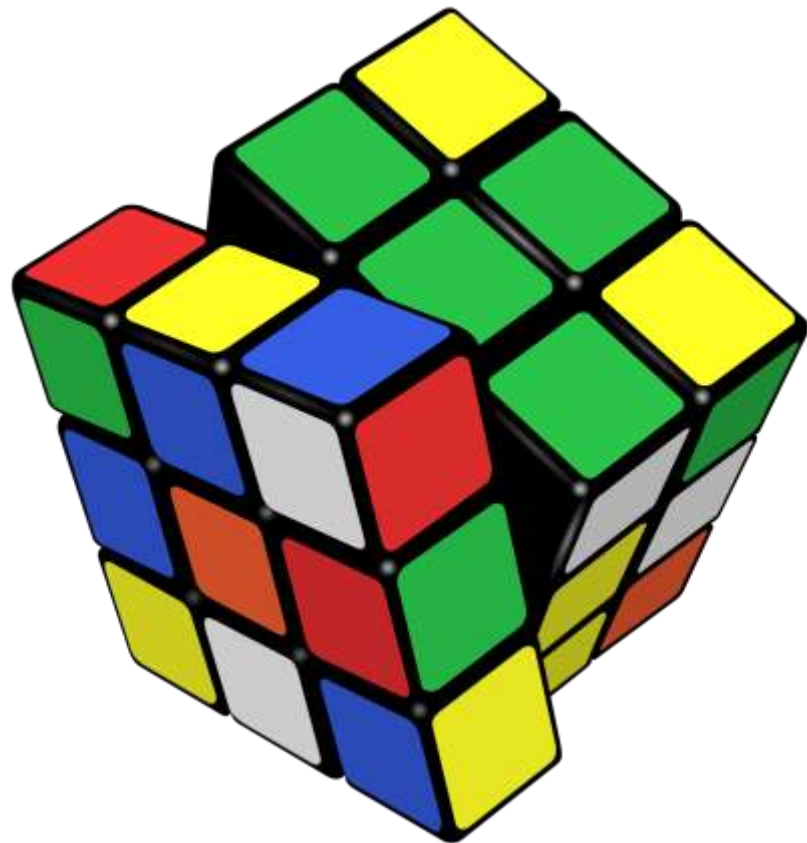
# IoT Use Cases Beyond AgTech

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# INTERNET OF THINGS

EXISTS TO SOLVE PROBLEMS



# INTERNET OF THINGS

## TOOLS IN THE IoT TOOLBOX



# INTERNET OF THINGS

LPWAN CONNECTIVITY BUILT  
FOR SMALL MESSAGES



# USE CASE

## ASSET TRACKING IN TRANSIT

**The need:** The need was two-fold.

First, find lost pallets, which results in millions in lost revenue annually.

Second create a new revenue stream (Logistics as a service).

**The solution:** A tamper proof low cost tracking device supported by geolocation.

**The results:** Currently in pilot





# USE CASE

## ASSET TRACKING WITHIN A CLOSED LOOP ENVIRONMENT

**The need:** Inventory control of fleet of portable oxygen cylinders for billing purposes inside one of Texas's largest hospitals.

**The solution:** Tracking devices in hundreds of cylinders.

**The results:** 1.) Reduction in cylinder loss and rental fee for customer  
2.) New offer for customers  
3.) Optimization of supplies



# USE CASE

## ASSET MANAGEMENT

**The need:** Track parts leaving manufacturing site to suppliers.

**The solution:** Remotely monitor location of assets indoor and outdoor and record data to have a traceable record.

**The results:** 1.) Real-time visibility  
2.) Improved supply control



# USE CASE

## OPERATIONAL EFFICIENCIES

**The need:** Back-up connectivity that is resilient to GSM jammers to ensure alarm transmissions.

**The solution:** Securitas Direct upgraded their alarm system over the air with LPWAN connectivity. In the case the GSM connectivity is jammed, alarm transmissions can still get to the central alarm system.

**The results:**

- 1.) Peace of mind for end customers
- 2.) No end customer impact during upgrade, as the back-up connectivity was performed “over the air”
- 3.) New IoT devices and services now possible for Securitas Direct
- 4.) Robustness of service a commercial differentiator





# USE CASE

## OPERATIONAL EFFICIENCIES

**The need:** Provide a seamless guest experience by streamlining waste management collection.

**The solution:** Remote battery powered waste level detection device.

**The results:** Started with an e-waste trial with the opportunity for additional business including pedestrian count, toilet monitoring, and more.



# USE CASE

## OPERATIONAL EFFICIENCIES

**The need:** Improve the air quality in building facilities.

**The solution:** Remotely monitor of CO2 levels along with ambient room temperature and humidity, sending an alert when thresholds are reached.

**The results:** 1.) Improved working conditions, leading to increased cognitivity and performance.  
2.) Improved management of ventilation and heating systems



# USE CASE

## Remote Monitoring

**The need:** Monitor underground sewage conditions to know when salt from the ocean was seeping into sewage pipes. Salt is harmful to water treatment plants.

**The solution:** Alert notifications when salinity spikes in prior to reaching the treatment plant.

**The results:**1.) Reduce labor costs  
2.) Address regulatory compliance



# USE CASE

## Crop Management

**The need:** Kiwi is a quality sensitive fruit. In order to reach best quality, farmers need a sophisticated irrigation strategy to prevent loss.

**The solution:** A wireless monitoring solution to help farmers develop a more accurate irrigation system strategy.

Sensors deployed in different depths to monitor moisture and fruit diameter sensors to measure size.

In addition, temperature and humidity sensors monitor environmental conditions.

**The results:** During 2016 season between March and October the decision support system has worked well and continuously. Farmers have been able to monitor without interruptions soil water status to have irrigation always under control.





# USE CASE

## Crop Management

**The need:** Increase the yield of truffle cultures.

**The solution:** A wireless monitor provides soil moisture, soil temperature, outdoor temperature, and pluviometer providing insight on the amount of water needed.

Dashboards and maps optimize watering process.

**The results:**

- 1.) 2-3x more truffles
- 2.) 25% reduction in water usage
- 3.) 46% less trips to check soil humidity





# USE CASE

## OPERATIONAL EFFICIENCIES

**The need:** Cost efficient way to maintain fields and parks in a diverse biographical region.

**The solution:** A wireless solution that monitors and measures the water, air, soil quality, water flow, and irrigation system of areas in real-time to help workers optimize resources and save costs.

**The results:** 1.) Data is collected and stored to forecast long term predictions based on trends.





# Thank You!

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