TiE HYDERABAD
FOSTERING ENTREPRENEURSHIP

SR Engineering College
Innovation . Creativity . Entrepreneurship

Executive Summary

TiE GRAD
FOSTERING ENTREPRENEURSHIP

Grand Finale

March 9th, 2019, Hyderabad

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Introduction:

Sagely Solutions is a student-owned startup, bringing innovation to the public water distribution system by creating a Smart Water Monitoring and Management product enhanced with IoT, mobile and cloud technologies. We also provide services to enable customers to use our products better. We hope to bring about greater awareness and economy in water usage. We are established in October 2018 and incubating with SR Innovation Exchange, Warangal.

Problem Statement :

The importance of saving our most essential natural resource, WATER, cannot be over-stressed. Growing population and adverse environmental conditions are adding to the problem.

In just 10 years, India's water demand is projected to be twice the available supply.*

The deeper problem is the lack of scientific assessment and measurement of water demand and supply, in both industrial and domestic consumer markets. Water consumption data is available only at an aggregate (very high) level.

Data systems related to water in the country are limited in their coverage, robustness, and efficiency. Data collection procedures and tools are technologically outdated, unreliable and not in real time.

The Solution:

“What gets Measured gets Managed”

Our belief is that the solution to the looming water scarcity problem is to use available water in an efficient way. In order to do that, we need to measure water at a granular level and deduce optimum water usage metrics and create awareness on adherence to those metrics. The solution should also help in controlling excess water usage as well as allow authorities or groups in penalizing the wastage or over-use of water.

The solution includes a real-time water usage data collection system at a household level and combines it with aggregate data analysis using cloud technologies.

Product description :

Our product consists of:

- An IoT-enabled Water Meter
- A Mobile App for remote monitoring/controlling and
- Comprehensive Cloud storage and Reporting system for insights.

We have designed a Prototype that consists of a very low-cost flow sensor which is used to measure the quantity of water flowing through the pipe. A 12v battery powers the device.

We developed an android application for meter owners to login and get access to their consumption data. The user can also compare to optimum usage level and be aware of excess usage at anytime.

Water usage can be monitored, controlled and billed based on individual usage by community/apartment managers or municipal authorities. It will be possible to bill a customer based on efficient or inefficient consumption.

Apparatus: Arduino IDE, ESP32 wifi module, Solenoid valve, Flow sensor, 12v battery.

Domains: Android application and Cloud connectivity.

How it Works :

Solution:

Our solution can be implemented in apartment blocks, gated communities and industrial areas in a simple process:

1. **Install the device**

   The device is installed at the main supply source or at the consumption point in the water pipeline. We may need different models based on the layout. We have 1, 4, 8 and 16 channel models to accommodate as many connections in a single device.

2. **Registration, activation, and setup of customers on Mobile App**

   All end users/customers will be registered and their consumption limits, slab rates etc will be setup. Login ID access will be given to all users.

3. **Customers/End Users Use App**

   Users log in and use the app to monitor, control, pay/purchase for the water they need/consume directly from the app.

4. **Facility Manager / Society Manager monitors aggregate consumption**

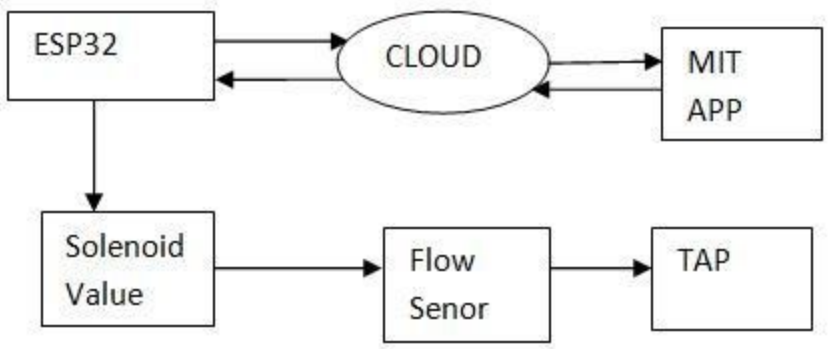
   We provide a separate cloud account for society managers or municipal authority with high-level reports. They can view and monitor Water usage across all apartments or houses in the society/block.

Payment models can be based on a pre-paid subscription method or post-paid method with higher slab rates for water consumed over and above pre-set limits.

Product:

After the installation of the device, the flow of water can be started with a click on the secure mobile app. The sensors in the device will send relevant data to the cloud which allows the user to monitor the water consumed in real time.

The block diagram indicates the flow of data between various components of the solution:



Customer Analysis :

Segment A: Housing societies, gated communities of independent houses.

Segment B: Apartments Blocks with individual apartments having independent water connections from overhead tanks

Segment C: Water Distribution and Management Departments of Cities and Towns

Segment D: Industrial Areas

Market Analysis :

Countries are looking up to technology to help them manage water resources in an efficient way. Global trends are clear on using Smart Water Meters and Cloud technologies to change the way water conservation is done.

Market Analysis can be approached from different perspectives:

Growth in Housing Sector: Increasingly people are moving to the cities and are living in communities. For eg., The growth of population in urban areas was 55% over the last 10 years. Expected number of new apartments getting completed in just Hyderabad is 55000 over the next 3 years.

Smart City Initiatives: India is aggressively developing 100 Smart Cities and water distribution and monitoring using IoT and Cloud technologies is a key factor.

Global focus on Water Scarcity: The Smart Water Management market is expected to grow at a high rate globally. And several organizations are working with third world countries to improve water management processes and funding technology solutions for better management of water resources in these countries.

Intellectual property :

We have applied for our patent rights through Udyog Aadhar scheme, which is an initiative for student startups with Central Govt recognition. The application is under process.

Sales and Marketing Plan

Initial Plan:

- Direct Sales to Gated Communities and Apartment Blocks
- Reseller Agreements with existing meter channel partners
- Social Media Marketing

Financial Information :

Our product cost for the basic Model is : Rs.1650 /-

Installation charges : Rs.1500/-

Total : Rs.3150 /-

Capital Required:

Sagely Solutions Smart Water Utility monitoring System			
Particulars			**Cost(Inr)**
Cloud Application Development			356250
Cloud Storage			109000
Internet and conectivity charges			87350
Mobile App Development			247000
Electronics	Quantity	Cost(Inr)	
Model 1	2	1650	3300
Model 2	7	1800	12600
Model 3	7	7950	55650
Model 4	5	15150	75750
		Total	**946900**
		HR	558000
		R&D	300000
		Required Capital	1804900

NOTE: We require Rs.18 lakhs to for Development and sustenance for the next 10 months.

ADVISORY:

Business Advisors :

1. Raj Samala , Founder - Revalsys
2. Sreedevi Devireddy, CEO - SR Innovation Exchange

Technical Advisors :

1. Ravi Devulapally, Vice President - Technology & Business Incubation, SRiX
2. NarsimuluCinasi, Manager- Technology, SRiX

Founding Team :

1. Shashi Preetham -Visionary
2. Polneni SriVidya - Hustler
3. Sandeep Mittapally - Hacker