REDBOT INNOVATIONS

Problem Statement

Quality is an important concern for every Automotive manufacturing company.

Manual inspection is not practical to achieve 100% quality, is inaccurate and prone to errors. Inspection parameters are many and time consuming. There is gap between speed at which parts are manufactured and speed at which manufactured parts are inspected as most of the companies depend upon sampling inspection.

Even though there are certain camera based solution exist in the market they are not effective. They cant handle **light** and **production variations**. Most of the solutions lack good **repeatability,** good **accuracy** and **not effective** in the **open environment light conditions**.

Manufactures have **little or no visibility into the real-time status(no Quality Data information)** of their manufacturing processes. Lot of **wastage of raw material** incurred due No availability of quality control and inspection at earlier stages of manufacturing processes. resulting in **unplanned downtime.**

Quality inspection market is worth of $15 billion as the online data available.

We are solving quality inspection problems for Automotive, Battery Industry, Electronics Manufacturing, Ceramics Industry, Agriculture, Pharmaceuticals, FMCG

Our Solution :Integrated Industry 4.0 solutions

Camera and Artificial intelligence based automated inspection system using Machine vision, Computer Vision, Image processing, Machine learning . Deep learning, robotics guidance and industrial automation.

Our solutions are intelligent enough to work in open light environment condition. Integrated Quality control and real time (data like, number of defects and non defects item produced per shift) status of manufacturing process.

Redbot Provides integrated single window end to end solutions covering Vision system hardware, image processing software and automation with mechanical rejection systems.

- Develops and delivers Application specific machine vision system which are customized as per the requirements.
- Good integration capability with customers existing hardware systems
- Quick prototype and demo arrangement for developing proof of concept
- Dedicated lab set up for customer requirement research , analysis and development

Technology Overview

1. Uniqueness of our Innovation.
a) Our systems works in open light environment and handles light and production variations.
b) We deliver complete part traceability for quality assurance. Manufacturer will get 1 month quality data traceability.
c) Higher Accuracy, Higher Efficiency, Highly customer oriented flexibility. Higher repeatability
 Product architecture and technology overview
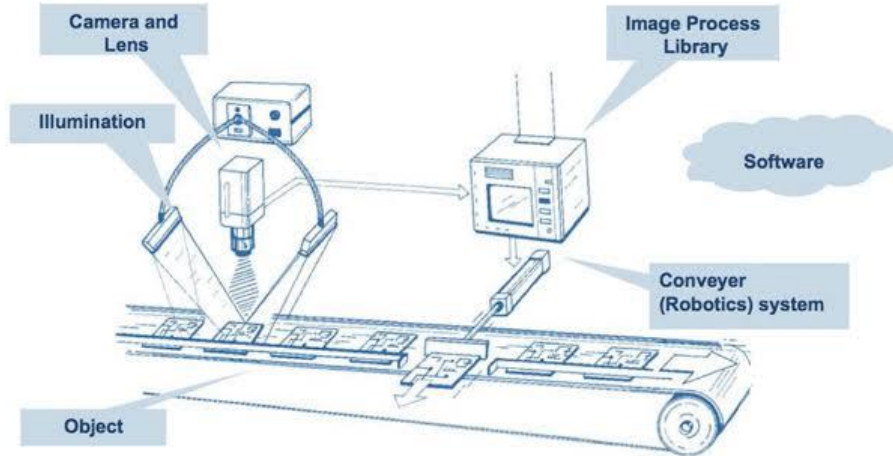
Artificial Intelligence
Machine Vision
Computer Vision
Machine Learning
Deep Learning
Robotic Guidance
Industrial Automation

Business Model

- Our value proposition:

Our main value proposition is that we are single window solutions integrator of automation systems that includes vision system hardware, vision system software and after market sales.

Our key partners and inputs for pricing
- Suppliers of Camera, lens, Processors, Frame grabbers,
- Sensor Suppliers, Industrial lights suppliers,
- Mechanical automation suppliers,

Pricing Model
Skimming Pricing model as the product development cost will be initially high due to high customization, specific to customer.

Customers/Customer segments and Distribution channels of products/services
➢ Direct B2B engagements
1. Battery Industries
2. .Automotive/metal, solar manufacturing companies
3. Pharmaceutical machine suppliers and pharma manufacturing
4. Rubber product manufacturing
5. Electronics like PCB manufacturing
6. FMCG manufacturers
7 Paint industries
8. Any general manufacturing

Market Size/ Opportunity

1. Market need: Why your customer needs your solution

   Increasing production capacity over the years. -Shortage of skilled labor , -Higher customer expectations and global markets, -Aggressive competitive environment.

Over the past few decades, the **production capacity** of manufacturers has increased exponentially, whereas in comparison the pace and capability pertaining to quality inspection has **remained stagnant**.

Contemporary quality inspection methods for inspecting auto components
- are prone to human errors and dependent of availability of skilled labor
- use time consuming **contact based quality inspection** methods (like CMM machines, Gauges and Calipers)
- dependent **on sampling techniques** which do not assure 100% quality inspection

Target Market and scalability, demand for solution

Target Market and scalability, demand for solution

Our target market is automotive and battery industry. Automotive part manufacturers,

- **Reason 1**

Every manufacturing requires 100% quality inspection before the product leaves the factory. As the economy moves into knowledge society the manual labour force decreases since quality inspection is repetitive and burdensome job.

- **Reason 2**

Smart factory, Smart Manufacturing and industry 4.0 are incomplete without this online inspections. Even our systems can be integrated for automated process manufacturing. Our intelligent systems can guide the manufacturing robots/Machines.

- **Reason 3**

Since manufacturing lines are multiple ,the same inspection system can be multiplied on to different lines. Annual maintenance service also generates revenue. Even licence based revenue is also possible.

Current Traction

1. Minimum Viable Product

Our minimum viable is ready for most of the manufacturing industries including . We are demonstrating POCs to the customers using our minimum viable product.

He have built already necessary algorithms for basic features of quality inspection like surface defects, assembly inspection, OCR, counting, assembly verification, basic video processing algorithms, measurements.

2. LTV/CAC

We are still in the phase of acquiring different customers. So far customer acquisition time and cost is bit high

3. Customer ROI

The expected ROI would be 1 to 2 years as the inspection systems are capital investments.

5.Revenue

1.3 Cr

Partners : Channel partners like SPM machine builders, automation companies which require vision system for their customers.

Journey So far

1. Growth metrics are key at early stage
We have 100% growth year on year since 2107.

Had given solutions to 12 customers like **Maruti suzuki**, Bajaj Auto, Brakes India,Exide Industries, Amararaja Batteries, Snieder Electric, Mahyco Seeds, Group pharmaceuticals,

RedBot Innovations has been Recognized, Awarded as a winner by Government of Karnataka under its Elevate Idea@POC Programme.

RedBot Innovations has been recognized as Innovative Startup by the Department of Industrial policy and Promotion Government of India.

Competition / Competitive Landscape

Competitiors

   Cognex, Keyence, Omron etc.

Competitive Advantage

we have robust solutions and ease of service, Customer focused customized product development,

Differentiator:

  Our systems works in open condition, have higher customizable features, we deliver full proof interlocking to customer production line, we have robust lighting (Image acquisition expertise – very crucial for vision system).

Entry barrier: 5 level of technical expertise,1. Camera, Optics Expertise , 2. Image acquisition expertise using different lighting methods, 3. In-house computer vison software development expertise, 4. all kinds of PLC integration capabilities, 5. Industrial automation expertise to provide integrated single window end to end solutions.

Funding

No funding raised, Bootstrapped

Founders Details

SHARAN H   CEO Co founder looks after Business Development, Marketing sales, New product Development, Supply and purchase, Recruitment, Planning and strategy.
Equity Held 20%
7 years in tech support and product development in Hardware and 3 Years in Business development and marketing.
Citizenship : Indian

MANJULA PATIL Director Technical looks after Project Implementation, Training, Project Management, Client support, Team development, Customer relations. Financial management.
Equity Held 79%
8 Years of work experience in Machine Vision, Computer Vision, Image Processing, Machine Learning, Deep Learning, Robotics Guidance, Industrial Automation.
Citizenship : Indian

Team Strength
6 Project Engineers,4 Application Developers ,1 Mechanical Engineer,2 Projects Lead

Team Details

Name	Current role	Education	Professional experience
Shiva cj	Business devolvement manager	Engineering	10 years
Annapurna	Team leader	Engineering	5 years
Harshraj	Application developer	engineering	3 years
Akshatha	Application developer	Masters in computer application	3 years
Shweta	Application developer	engineering	2 years
Abhishek	Application developer	engineering	2 years
Praneel	Mechanical engineer	engineering	6 years
Tenmozi	Application developer	engineering	1 Year

6 Project Engineers with Engineering qualification

Total number of directly employed are 16 no's

Achievement & Awards

Redbot Innovations has been recognised and Awarded as winner and Received grant of 10 lakh INR by government of Karnataka under its Elevate2 idea2 POC programme

Award from Maruti Suzuki MAIL Program

REDBOT INNOVATIONS has been selected for **Maruti Suzuki's MAIL (Mobility And Automobile Innovation lab)** Program for the joint Development of innovative automated Quality inspection solutions for CAR manufacturing industry

Maruti Suzuki shortlists three new startups under innovation initiative

PTI | Mar 22, 2021, 12:15 IST

NEW DELHI: Maruti Suzuki India (MSI) on Monday said it has shortlisted three new startups as part of its Mobility and Automobile Innovation Lab (MAIL) programme. With an objective to promote innovation in the mobility space, the auto major said it has shortlisted Nable IT, Redbot and Sleave as part of the fourth cohort of the MAIL programme.

THE NEW INDIAN EXPRESS

| STOCK MARKET | BSE | 49022.14 | ▲ 289.59(0.59%) | NSE | 14754.50 | ▲ 76.70(0.52%) |

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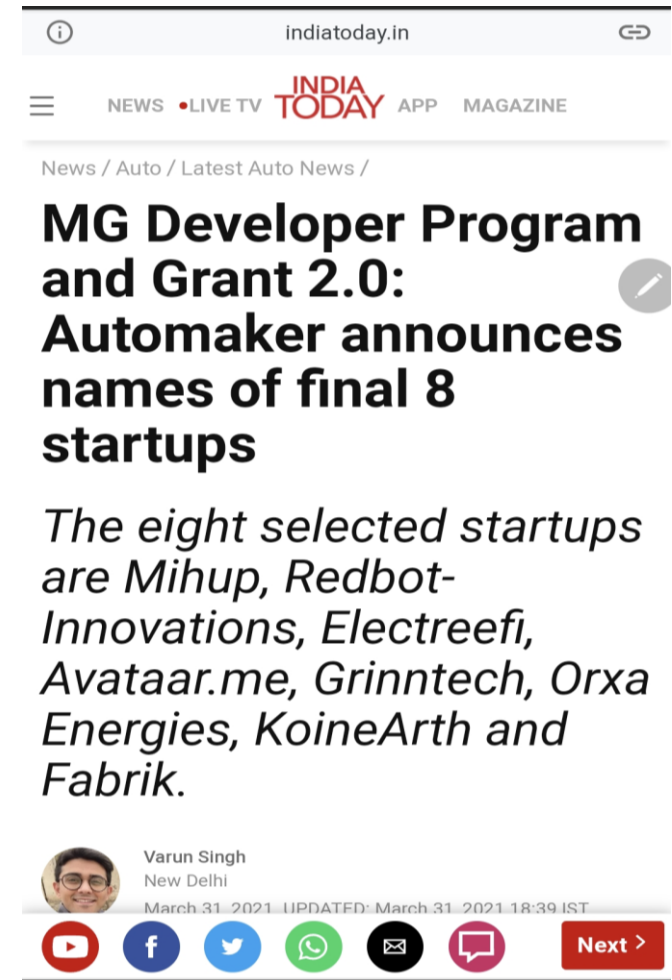
Maruti Suzuki India (File Photo | Twitter)

By PTI

NEW DELHI: Maruti Suzuki India (MSI) on Monday said it has shortlisted three new startups as part of its Mobility and

Award from MG Motor Developer Program

REDBOT INNOVATIONS has been selected for MG MOTORS Developer and Grant 2.0 program for the joint Development of innovative solutions for CAR manufacturing industry.

MG Developer Program and Grant 2.0: Automaker announces names of final 8 startups

The eight selected startups are Mihup, Redbot-Innovations, Electreefi, Avataar.me, Grinntech, Orxa Energies, KoineArth and Fabrik.

Varun Singh
New Delhi
March 31, 2021 UPDATED: March 31, 2021 18:39 IST

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Customers List

Solutions Given (All projects with 100% success and 99% accuracy) like

- **MARUTI SUZUKI** – Car Door Sealant Inspection ,Implemented with 100% Repeatability and 99% Accuracy, Single camera can identify a effect of 1mm from a height of 2.5 meter

- **BRAKES INDIA** – Car Drum Brake Assembly Inspection

- **EXIDE INDUSTRIES,**

  AMARARAJA Batteries – Battery Plates Alignment check, Polarity verification, Packaging Inspection

- **CONTINENTAL AUTOMOTIVE** – PCB pin orientation with measurement accuracy of 100 microns

- **MAHINDRA AEROSPACE** – Artificial Intelligence Based counting system , can count 700 types of aerospace parts

- **CUMI MURUGAPPA** Groups- Ceramic part surface defect inspection at the speed of 15,000 parts per hour.

- **SNIEDER ELECTRIC** – Integrated Chip Data Reading verification with a moving camera

- **GROUP PHARMACEUTICALS AND GLAND PHARMA** – Sensodyne Tooth paste Batch code , MFG ,EXP DATE verification at the speed of 10,000 parts per hour.

- **MAHYCO SEEDS** – Smart Phone based Inspection for Chili, Brinjal, Okra –Measurement for seed breed development

Product fit for Car manufacturing industry

1. Our Integrated **Industry** 4.0 innovative solutions can cater car manufacturing needs.

Redbot can create a network of quality control solutions with a integrated centralized(data base) monitoring system for different production lines. Our systems can be interlocked with car manufacturing production lines.

Camera inspection solutions can be installed at various stages and in different departments like PRESS SHOP, WELD SHOP, ASSEMBLY SHOP, PAINT SHOP,ENGINE SHOP.

Various kind of customized solutions like **Weld Inspection, Assembly Inspection, Assembly process inspection**
Surface Defects Crack Inspection on car panel, Non Contact Measurement Application
Optical Character Recognition Identification like Chassis Number Identification,
Robotic roof Centering and Robotic Guidance applications, Interlocking with the production line.
Car tyre assembly inspection, Car Windshield Inspection, Speedometer alarm indicators inspection
Paint inspection, Color identification, Paint uniformity, Child parts assembly inspection, various car model identification. Sealant inspection,

THANK YOU

Open For Discussion