



Cygnets **Infotech**  
IT is about you

# Intelligent Elevator Maintenance Enabled by Intuitive IoT Solution

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## Client Profile

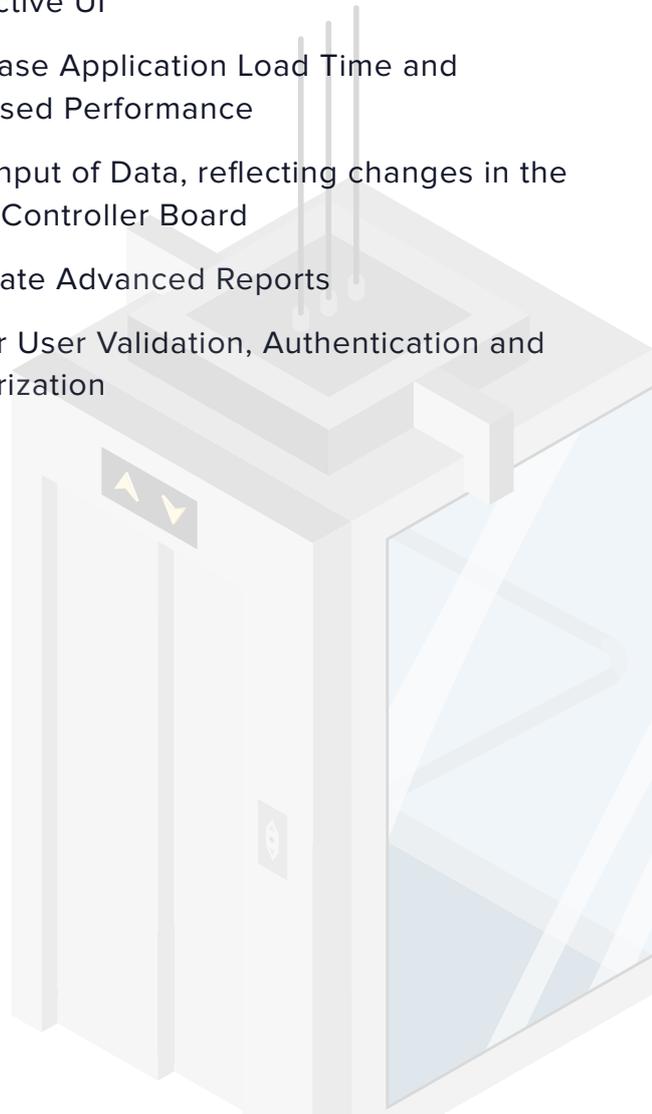
Our client is amongst one of the world's largest manufacturers and suppliers of complete lift systems and components; manufacturing electronics, mechanical and energy efficient valve blocks, single and multi-stage telescopic cylinders, car frames, cabins, safety catches for passengers and cargo elevators. Founded around 50 years ago, the company is maintaining around half a million elevators and escalators by having a network of research, engineering facilities and test towers worldwide.

## Business Scenario

Our client was faced with challenges while handling customer complaints. Their elevator technicians had to manually update technical issues of each elevator in the mobile application which led to value mismatch in the application and micro-controller boards. Being a pioneer in customer service, they required a role based mobile application for end-users and technicians; and a desktop application for the supervisor to manage the value input by the technicians. Client also required IoT integration for some of the elevators.

**To manage their customers efficiently and improve their quality benchmark, they needed a technology partner who could work closely with their local team in Germany to build a solution**

- Manage Workflows and Technicians' Profile from Different Regions
- Engaging, Feature Rich, Simplified and Interactive UI
- Decrease Application Load Time and Increased Performance
- Easy Input of Data, reflecting changes in the Micro-Controller Board
- Generate Advanced Reports
- Proper User Validation, Authentication and Authorization



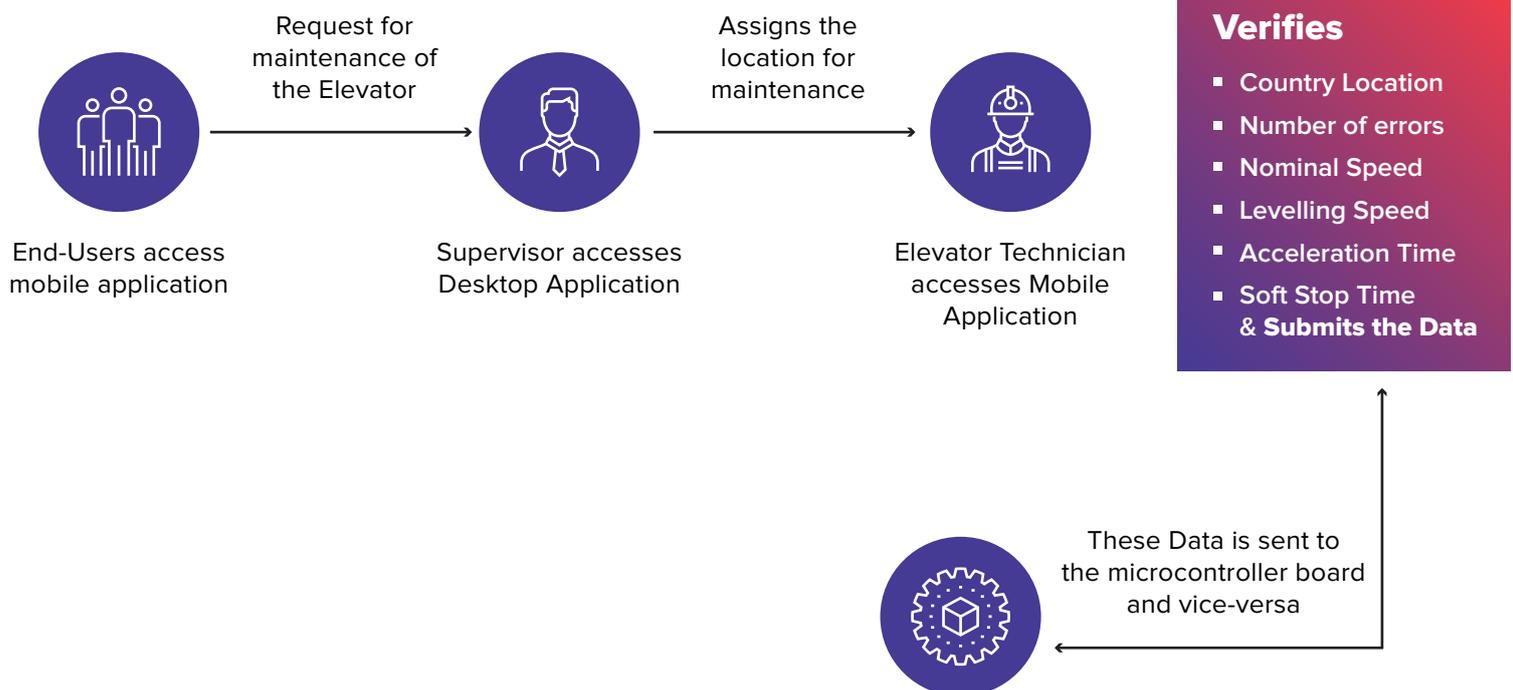
# Cygnnet's Solution

Cygnnet helped in developing innovative application for elevator maintenance which was connected to the Micro-Controller Board using Bluetooth and USB. Desktop Application was handled by the supervisor to assign the tasks to the technicians according to the locations, whereas end-users could raise a request for elevator maintenance.

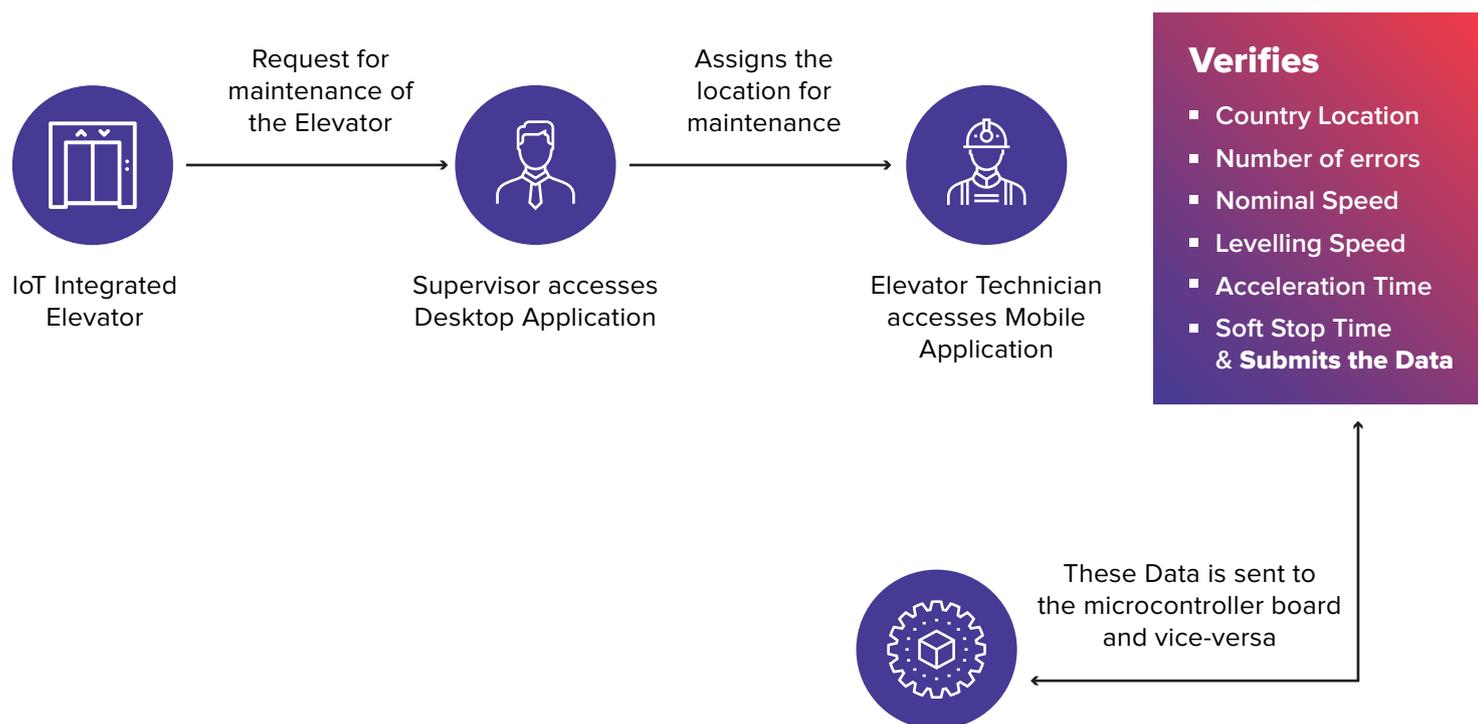
Cygnnet offered IoT integration for around 1 lakh elevators that were connected to 3G, 4G or Wi-Fi and would send signals to the supervisor if the elevator required any maintenance.



## The flow managed through the applications was defined as:



## The flow of the communication initiated by the elevators was defined as following:



## The functionalities of the application were defined as :

### Remote Monitoring:

Integration of sophisticated sensors, circuits, hardware and software with the elevators that accumulated, analyzed and communicated data from the elevators to the servers using internet.

### Predictive Alerts:

Alert messages for the upcoming elevator maintenance cycle were prompted to the elevator supervisor who further forwarded it to the technician for maintenance.

### Monitoring of Elevator Life-cycle:

Any glitch in the elevator is detected automatically and then the data is analyzed and diagnosed. An alert message with the cause of the problem and elevator location was sent to the elevator supervisor who assigned the task to the technician.

### Role-based Access Control:

The end-users logged into the application through email-id/ mobile number and password whereas the technicians logged into the same application through employee id.

## Complaint Forums:

The end-users mentioned their queries and maintenance requests in the complaint forums. The supervisors in-turn assigned the tasks to the technicians

## Task Management:

The supervisors activated the technicians and assigned tasks for elevator maintenance according to the technicians' current location.

## Task Planner:

Technicians were assigned new tasks of elevator maintenance each day which were highlighted in the task-planner. At the end of the day, the technicians could update the status of the assigned tasks.

## Map Integration:

Technicians located the elevator maintenance spot on Google Maps that helped them reach the destination easily.

## Advanced Reporting:

Reports in the form of graphs and charts were generated based on the data entered by technicians like country-location, number of errors, nominal speed, levelling speed, acceleration time, soft stop time, medium speed, inspection and rated deceleration. These data in turn was sent to the microcontroller board.

## Online Chatting:

The technicians could communicate with their supervisors through texts in-case of any concerns while repairing the elevators.

## Feedback Forum:

The end-users mentioned the satisfaction level through rating and review in the feedback forum.

## BENEFITS TO THE END- USERS:

- Increase in business efficiency by 55%
- Integration of IoT with elevators helped in monitoring the life-cycle
- Effective task allocation and huge savings in administration cost
- Effective and up-to-date data moving between the application and microcontroller boards
- Easy tracking of technicians' movements
- Accurate evaluation of performance through reporting

## Tools & Technology



# About Cygnet

Cygnet Infotech is one of the most trusted names in the IT space delivering technology solutions to global clients across 29 countries. Born out of a vision to create software development company where quality, innovation and personalized services trump low cost, makeshift solution, Cygnet partners with its client to help them transform in to high performance businesses.

Cygnet has deep industry and business process expertise, global resources and a proven track record in delivering innovative technology solutions. Cygnet can mobilize the right people, skills and technologies that improves business performance.

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Founded in 2000,  
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900+ Employees  
Delivered 2000+  
Projects



18 Years of Experience  
Serving 750+ clients  
in 35 countries



95% Client Retention



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