Internship Report

On

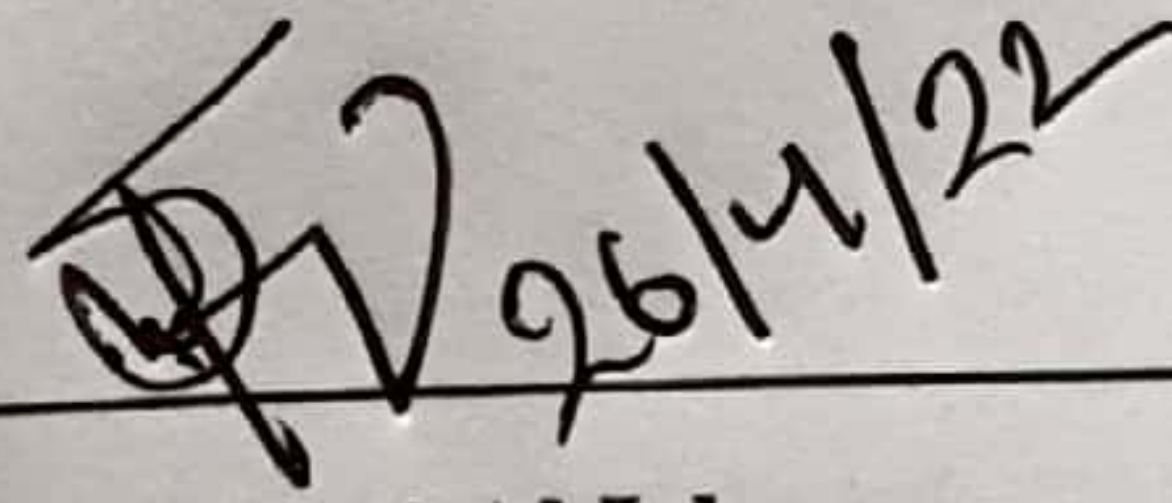**"Product Management of Bondstein Technologies Ltd"**

Submitted To

**Islamic University of Technology & Bondstein Technologies Ltd**

in partial fulfillment of the requirements
for the Internship Program

**Submitted By:**

I understand that my final report will become part of the permanent collection of the Islamic University of Technology BBA in Technology Management Program. My signature below authorizes the release of my final report to any reader upon request.
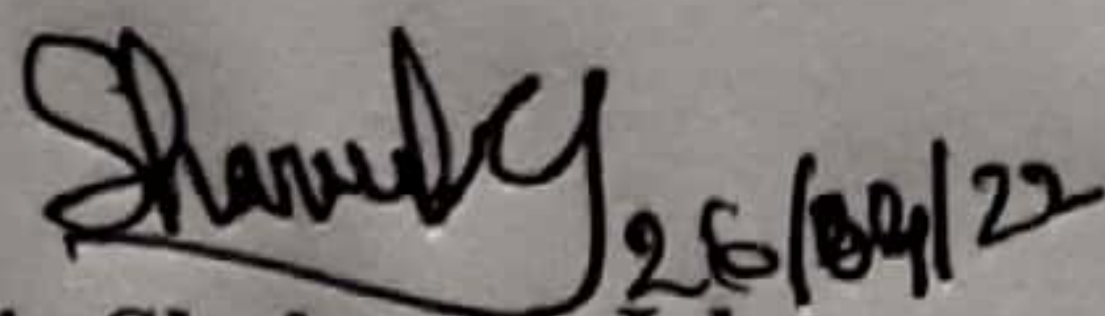
26/4/22

**Shafi Al Islam**

Student ID: 170061070

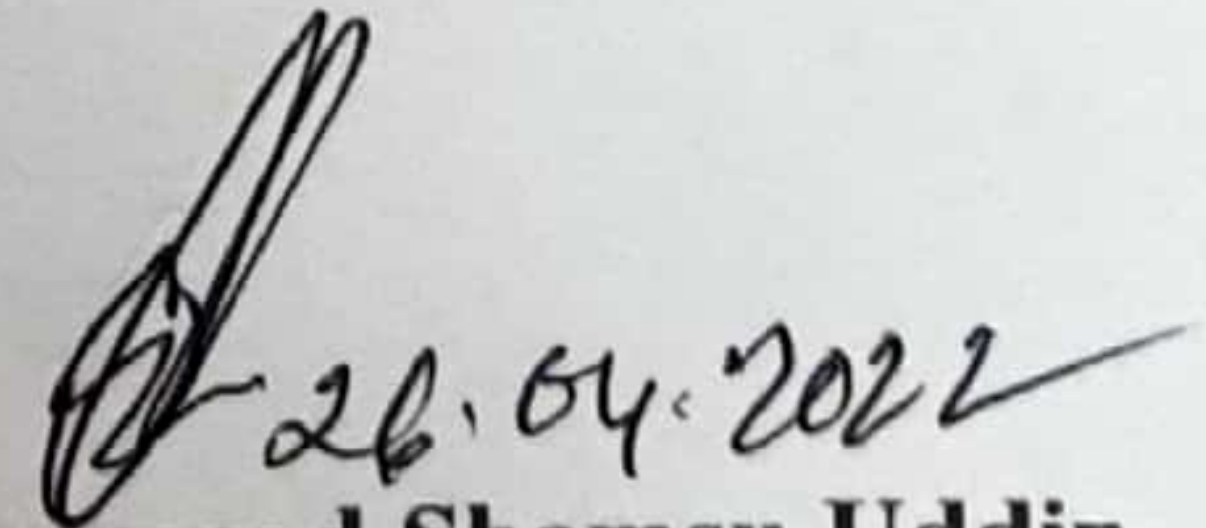Department of Business & Technology Management

Islamic University of Technology (IUT) – OIC

Board Bazar, Gazipur-1704, Bangladesh.

**Approved By**

26/04/22

**Mir Shahrukh Islam**

Managing Director
Bondstein Technologies Ltd

26.04.2022

**Dr. Mohammad Shamsu Uddin**

Assistant Professor
Department of Business & Technology Management
Islamic University of Technology (IUT) - OIC

## Letter of Transmittal

17th April 2022

**Dr. Mohammad Shamsu Uddin**

Assistant Professor

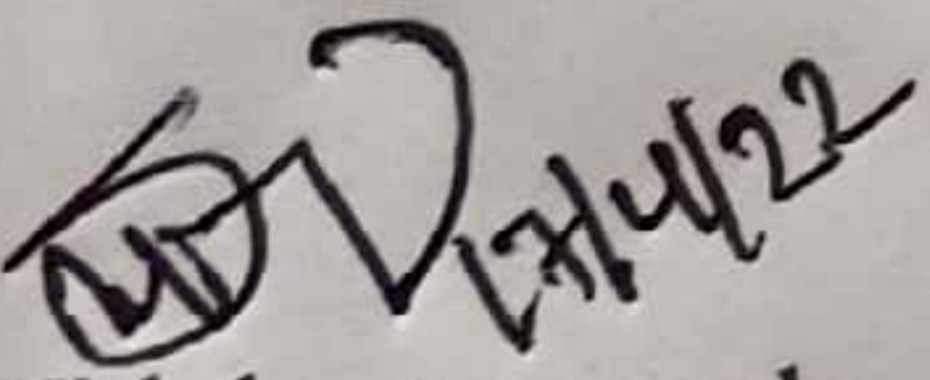Department of Business & Technology Management

Islamic University of Technology (IUT)-OIC

Board Bazar, Gazipur-1704, Bangladesh.

**Subject: Submission of Internship Report on "Internship activities completed in Product Management, Bondstein Technologies Ltd".**

Dear Sir,

With humble submission and due respect, It is to present my internship report for Bondstein Technologies Ltd's Product Management Department's four-month internship program. I have worked exceptionally hard to ensure that this report is both meaningful and successful. This report provided me with an opportunity to reflect on what I had learned about the entire corporate life scenario, organizational policy, the internal work environment, and other facets of the given functions. I'm looking forward to putting my Internship experience to the greatest possible use. I'd want to offer my heartfelt gratitude for your helpful advice and suggestions in preparing the report. I apologize for any errors that occurred during the preparation of this report. If you require any further information regarding any aspect of this internship report, I will gladly supply the information required.

With best regards,

**Shafi Al Islam**

Student ID: 170061070

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# Executive Summary

The purpose of the internship report is to reflect on the learnings from the completed tasks during the internship period. The goal is to identify different skills that have been developed throughout the internship period along with developing the learning outcomes. Bondstein is a market leader in Bangladesh's internet of things (IoT) industry, assisting companies in integrating linked technologies and maximizing operational efficiency. Bondstein's diverse product and service offerings help consumers save time and money. At its heart, it is a firm that is focused on innovation. Bondstein Technologies Ltd's Product Management Department is where I finished my internship. In a technological firm, the product serves as the hub around which the whole operation revolves. Understanding the importance of goods in the success and long-term viability of a company. Working in this area has given me the opportunity to acquire a variety of skills that will be useful in my future career. Along with the abilities I've acquired, I've done my hardest to put my knowledge to work in the company. The tasks I undertook throughout my time in Product Development encouraged me to hone the abilities I already had and develop new ones that would be useful for both my personal and professional development.

The main purpose of the report was to look into and assess Bondstein Technologies Limited's product management processes and performance. The report opened with a basic overview of Bondstein as well as a quick overview of the product management department and my responsibilities there. The focus then switched to my tasks and projects, which was the main topic. Later, suggestions were made to improve the areas that needed it. The experience I had at Bondstein motivated me to learn more about my chosen profession. I learned a lot about working under pressure during the course of the four months. It also demonstrated to me that having a sound plan, an entrepreneurial mindset, and a drive for innovation can assist a firm in thriving in the industry.

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## Table of Figures

# Introduction

This report is an integral part of the course – Internship 4800 for the 8th semester. This report is written with the aim to share the experiences that I have gathered while working as an intern for 4 months at Bondstein Technologies Limited. This part will contain the purpose of the report, the scope, the methodology I have used, and the limitations I faced while compiling the report.

## 1.1 The Purpose of the Report

All Business and Technology Management Department graduates are obliged to participate in and complete an internship program with the purpose of learning how to do work in a realistic manner after receiving theoretical notions as a business major. It is a fantastic opportunity for each student to gain a practical understanding of the academic material we have learned over the course of our four years of undergraduate study. Furthermore, the study should be carried out in order to put information into practice. It is the outcome of my 4-month long internship as a "Product Management Intern" at Bondstien. This report includes information on the overview of the company, an analysis of the industry of concern, a description of the tasks completed during the internship, a thorough analysis of Bondstein's environment, and some concluding remarks.

## 1.2 Scope of the Work Completed

A reader will be able to get an overview of Bondstein Technologies Limited and its business operations, services offered, working conditions, market size, and the overall idea of the industry. It will also deliver some insights about the IoT industry as a whole and give an idea about my entire internship experience as well as the learnings obtained during the period.

## 1.3 <u>Methodology</u>

I gathered all the required information for my internship report from the following two sources:

- **Primary Sources:** The data has been sourced from regular interaction with the existing employees of the company, personal records, and knowledge exchange sessions with company management.
- **Secondary Sources:** Includes information from the internet, the company website, the company's audit report, and previous internship reports.

## 1.4 <u>Limitations</u>

The report contains the following limitations:

- **Confidentiality of data:** I could not include some information about the company since there are some privacy issues associated with the contents of the report.
- **Lack of data sufficiency:** There was a lack of sufficient information on the internet since Bondstein is a startup company.
- **Time:** Four months is not sufficient for making a complete judgment about an organization as a whole.

# Company Overview

## 2.1 <u>Overview of Bondstein Technologies Limited</u>

In Bangladesh, Bondstein is the market leader in the internet of things (IoT) industry, assisting companies in integrating linked technology and maximizing operational efficiency. With a comprehensive selection of products and services, Bondstein helps customers save time, money, and digital transformation to make companies future-ready. At its heart, it is a firm that is focused on innovation. Bondstein's experience with IoT-enabled technology has allowed establish industry milestones for clients. Bondstein works on real-world issues and is building a world where everything is connected.

### Mission

Bondstein's goal is to ensure that everyone has access to technology and to make the internet of things (IoT) more helpful.

### Vision

Bondstein's vision is to develop a network of connected devices that can be monitored and controlled remotely through a secure method.

### Values

| | | | | |
|---|---|---|---|---|
| Integrity as the basis of any relationship | Innovation at the core of every service | High performance is what we strive for permanently | Quality in our solutions & products | Sustainable Growth to ensure long term impact |

### Topline Services

**Product as a Service:** Bondstein creates bespoke, pragmatic, and inventive solutions for businesses that use products with managed service contracts for repair, replacement, and redistribution. By emphasizing pragmatism over ostentatious spending and efficiency in day-to-day operations, Bondstein helps businesses become more efficient and sustainable.

**Software as a Service:** Bondstein offers cloud-based software solutions that are conveniently available over the Internet, eliminating the complexity of software and hardware management. Bondstein oversees application access, including security, availability, and performance. Bondstein offers SAAS as a monthly subscription service.

**R&D as a service:** For its clients, Bondstein does substantial research and development in order to improve its operations and services. Bondstein is the fourth industrial revolution's torchbearers. Through RDAAS, Bondstein automates procedures to help your business succeed.

**Technologies**

**Core IoT Cloud**

When dealing with connected devices, the most difficult task is to create a stable, scalable, and robust cloud that can manage traffic and handle data transactions more quickly. We are pleased to be Bangladesh's only company with its own original IoT cloud solution. We built it from the ground up using a distributed system design that separates receivers, processors, controllers, client applications, and all other levels. It can handle up to a quarter-million data transactions per minute on a single instance, and it can be scaled up or down in minutes. It was designed with the goal of achieving cost-effectiveness while providing the greatest possible client experience. Managing a connected device using our platform costs only 20 cents in dollars over the course of 30 days. In the fourth industrial revolution, our IoT cloud is a game-changer.

**Robust IoT Hardware**

We aim for innovation at Bondstein. Our clients benefit from our attention to detail, unique approach to an issue and practical expertise. We specialize in creating IoT hardware that is both reliable and stable for capturing and controlling multiple data points at any scale. We've worked on power systems for electronics, communication modules, sensor-based triggers, and other microcontroller-based devices. We work with a variety of platforms, including Arduino, Raspberry Pi, Jetson, ATMega, and others. Our clients can build commercial PCBs

at scale using our SMT machine, reflow oven, and other circuit fabrication facilities. We assist our customers with the appropriate custom hardware unit, whether it's a design or production task, so they can focus on exploiting the benefits of connected devices anytime, everywhere. We're proud of the commercial IoT devices we've designed for local and international clients, including one for a Fortune 500 corporation. We've made PCBs for a variety of commercial applications, including robotics, pharmaceuticals, energy, logistics, and more.

Below are the technologies Bondstein works with:

| TCP/IP | UDT | HTTPS | LORA | ZIGBEE | NB-IOT |
|--------|-----|-------|------|--------|--------|
| Arduino | Jetson | Nvidia | Intel IOT | Raspberry Pi | ATMega |
| SIMCOM | IBM Watson | Azure IOT | AWS IOT | Google IOT | AWS Lamda |
| Sigfox | MongoDB | sPHP | LPWAN | Tensorflow | Kubernetes |
| RFID | BLE | 5G | Tuya | MQTT | ARM |

**Bondstein's Impacts**

- Our effort has an influence on 50 billion+ data transactions on the IoT Cloud and 20000+ connected IoT Devices.

- There have been over 3000 consumers served.

- 2+ Long-Term Business Collaboration Over 300 Stolen Vehicles Have Been Recovered

- For the past six years, I've been securing questions and preventing question leaks in national exams.

**Awards & Achievements**

For its remarkable performance, Bondstein has received multiple honors. Our clients are at the center of all of our accomplishments, whether as a company or on a project for the amazing build that we produced. We are able to construct our distinctive character in the business as a successful destination for building digital products because of those who work with us as partners.

- National ICT Award 2020
- Asia Pacific IoT Champion (APICTA) 2019
- BASIS National ICT Award 2019
- Top 100 Startup ECHELON S2015- People's Choice Award

**IOT Assembly Facility @ Bangabandhu High Tech City, Kaliakoir**

Bondstein is expanding its facility in the Bangabandhu Hi-Tech City at Kaliakoir, Gazipur. We are launching the first full-scale IoT assembly unit here and subsequently expanding it to a full-scale manufacturing unit. We expect to employ nearly 200 employees in the next 5 years and contribute to the nation's economic development. We are investing around 100 million BDT in phases in this high-tech city to increase our capacity and harness the potential of the IoT market not only locally but globally.

**Clientele**

**Local Clients**

| Robi | Grameenphone | Trust | Toma | Partex | Orion |
|------|--------------|-------|------|--------|-------|
| UCB | Bashundhara | Globe | Unilever | Meghna | Pran |
| IDLC | Brac Bank | Runner | Lafarge | DNCC | Padma Bridge |
| SKS | Anwar Group | Igloo | Polar | Nourish | ACI |
| FedEx | Baizid Steel | Raddisson | Beximco | Healthcare | bdjobs |

| Brac | BSRM | Care Bangladesh | CNS BD | Confidence | Golden Harvest |
|------|------|------|------|------|------|
| Max Group | Omera | Dhaka Bank | Securex | G4S | Designtex |
| Gonoshastho Kendro | Navana | Otobi | Peninsula Hotel | Rancon | Rangs |
| SEL | Youngone | Pathao | Aramit Cements | Bitopi | RR Imperial |
| Mahmud Group | AIUB | Gazi Group | IMS | Kings Confectionery | Coopers |
| Edotco | Sunbeams | Labaid | Deligram | GoBD | Metrocem |

**Global Clients**

| Telenor | UNESCO | Strategic Securities | Lafarge | Google | World Bank |
|------|------|------|------|------|------|
| KINY | Mark & Spencer | Coats | | | |

## 2.2 Overview of Product Management Department, Bondstein

Product management is in charge of overseeing the whole product lifecycle. Product management is a strategy for launching a new product or enhancing an existing one. It starts with a notion of a customer-interactive product and ends with an evaluation of the product's success. Product management brings together business, product development, marketing, and sales. The tasks of the department primarily include:

- Recognizing and expressing user requirements.

- Keeping an eye on the competition and performing market research.

- Defining the vision of a product.

- Obtaining the support of all stakeholders for the product's goal.

- Prioritizing features, bugs, and backlogs.

- To enable independent decision-making, bigger organizations should develop a shared brain.
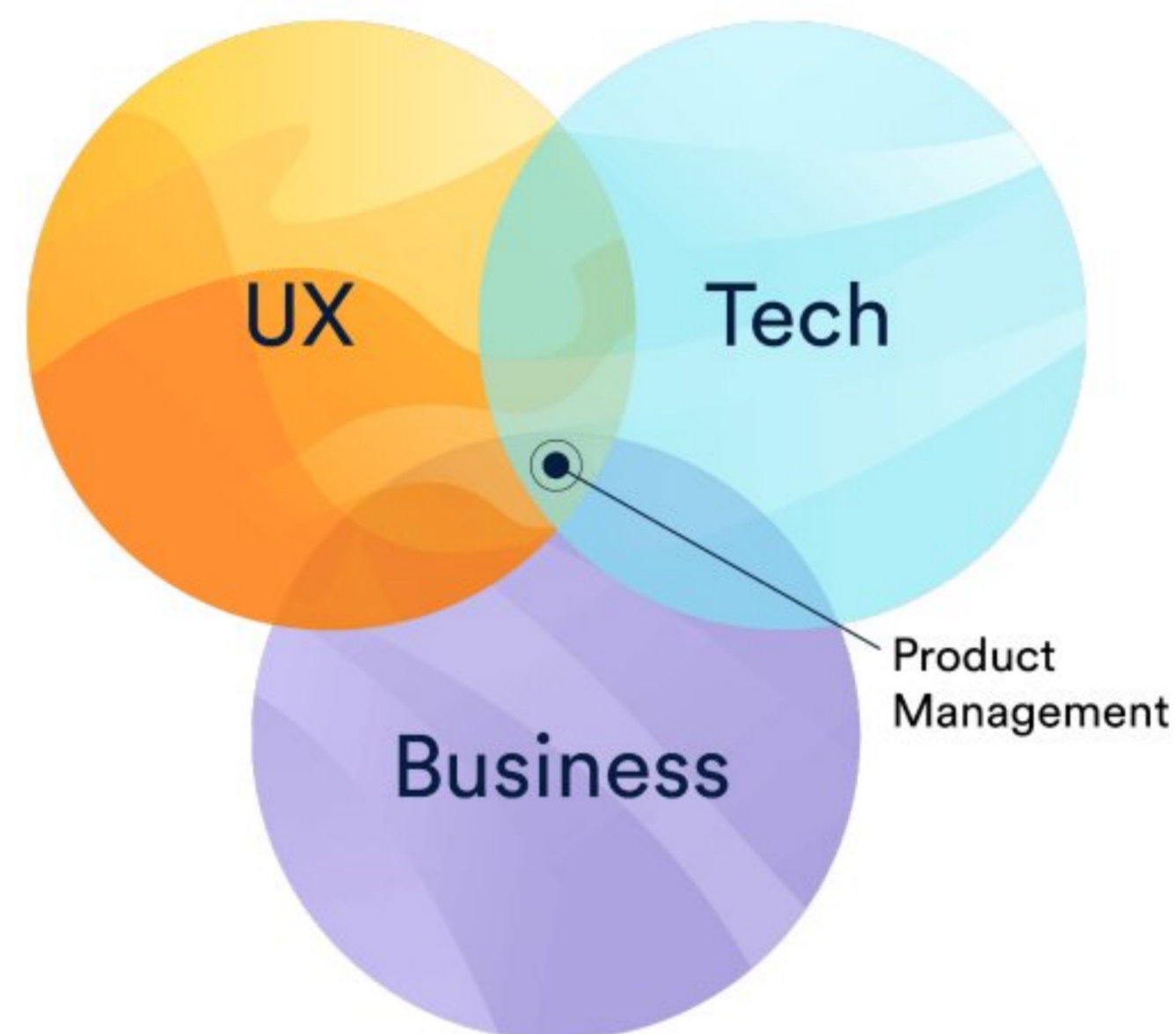


FIG 1: Product Management Venn Diagram

## 2.3 Offered Products

**Track My Vehicle**

To tackle local difficulties, Track My Vehicle offers the most robust vehicle tracking solution available, complete with all advanced control functions available in the telematics market. Customers can use a dashboard established on the web and mobile applications to view where their vehicles are traveling with this solution. It also allows the user to view previous movement data on a map, turn off the vehicle's engine remotely by activating the remote engine disarm feature from the panel, and access more than 24 analytical reports that include mileage, position, and alerts on the dashboard.

| VTS Bike | VTS Lite | VTS Regular | VTS Regular + Voice | VTS Regular + Thermal | Portable VTS |
|----------|----------|-------------|---------------------|-----------------------|--------------|
|          |          |             |                     |                       |              |

- Track your vehicle's live movements on the map while you're on the go.
- Anti-Theft Procedures: To safeguard your vehicle in the event of theft, you can use a remote engine override.
- Analytical Reports (Analytical Reports): To manage your fleet, get analytical reports right on the dashboard.
- Reduce the cost of logistics: Use our service to reduce the cost of logistics transportation.

**Remote Power Generator Monitoring Solution**

Our remote power generator monitoring technology allows our customers to keep an eye on their generators' load consumption from afar. It gives them a comprehensive picture of their operations. We deliver load metrics, voltage parameters, and current flow status over a secure cloud network using this system.

- Activity Tracker: Automatically log all of a generator's events in the cloud.
- Monitor Load: Keep an eye on your load in the cloud to see how much you're using.
- Analytical Reports: Analytical reports can be accessed right from the dashboard.
- Reduce Energy Operations Costs: Our solution can help you reduce your energy operations costs.

**Drive Mark**

Bondstein's primary product, DriveMark, is on a quest to make our roads safer. It uses the telematics dataset to assess driving trends in real-time. It sends out intelligent alerts and keeps track of each driver's driving score. In real-time, DriveMark can detect severe acceleration, harsh braking, rough turning, and lane changes. DriveMark with Excessive Honking, seatbelt tracking, and real-time Overspeed alarm can all be enabled with an advanced telematics solution. DriveMark is an example of how IoT and data points may be used to make roadways safer.

- Scorecard for Drivers: Create a driver ranking based on their driving statistics.
- Alerts that are intelligent: Any violent driving behavior should be reported.
- Analysis of the Trends: Track a driver's driving history in the cloud.
- Improve Road Safety: Reduce the likelihood of an accident and make the roadways safer.

**Smart Box**

The MBBS first-year medical admission test is Bangladesh's largest public examination. Hundreds of thousands of students take the exam every year as the ultimate test to see if they can achieve their dream. In total, 100,000+ students are scheduled to take the exam in 55+ locations across the country. However, a syndicated network of criminals has been disclosing inquiries concerning medical examinations on a regular basis. Dreams of hardworking and meritorious students were being sold off, resulting in a national crisis as nationwide rallies questioned the authority's trustworthiness. How can you deal with a national crisis that has lasted seven years? We figured it out in just seven days! We created a unique IoT device that could send notifications if the boxes containing questions were opened unlawfully the day before, thereby making the boxes smart. This is an example of how the Internet of Things can be used to help solve a national catastrophe.

- Intelligent Alert: A custom sensor is employed to detect unauthorized entry.
- Live Monitoring: Allow question bearers to be seen from afar.
- Visual Map: A visual map with all essential data points is provided.
- Managed Solution: Assuring our clients of a managed solution.

## 2.4 Offered Services

**API Services**

Bondstein offers a commercial API for community mapping. Aside from the standard APIs, we can create custom APIs for our customers as needed. Commercial APIs are available that give traffic metrics, mapping data, and more. Leading mapping companies in the United States and around the world use these APIs.

- Traffic Analytics: Display real-time traffic data on a map.
- Dynamic Path: Creating a trip's optimal dynamic route.
- Noise Filter: Removes noise from a large dataset, allowing you to focus on the important data.
- Historical Study: Use a traffic dataset from the past as a research instrument.

**PCB Design & Fabrication**

Bondstein designs fabricate and assemble printed circuit boards and related electronic subassemblies using a variety of highly precise and standardized manufacturing technologies, ensuring flexibility, cost savings, time savings, and precision. Our clients benefit from our attention to detail, unique approach to an issue and practical expertise. We specialize in creating IoT hardware that is both reliable and stable for capturing and controlling multiple data points at any scale. We've worked on power systems for electronics, communication modules, sensor-based triggers, and other microcontroller-based devices.

- Advanced PCB Machinery: We have advanced PCB machinery to back us up.
- Engineers who specialize in design: Engineers who are well-versed in the use of contemporary tools.
- Stations for Soldering: PCB packaging partners: Dedicated soldering stations for PCB preparation and testing Managed packaging solution using a commercial mold or a three-dimensional print

**IOT R&D Services**

We aim for innovation at Bondstein. We assist our customers with the appropriate custom hardware unit, whether it's a design or production task, so they can focus on exploiting the benefits of connected devices anytime, everywhere. We're proud of the commercial IoT devices we've designed for local and international clients, including one for a Fortune 500 corporation. To assist our customers in unlocking their future, we deliver R&D as a service with proprietary ownership.

- Custom Requirement: A one-of-a-kind solution tailored to your requirements
- Design Engineers: Engineers who are well-versed in the use of current tools.
- Solution Design: Working at the architectural level to come up with a viable solution.
- Clients as Partners: In R&D, we treat our clients as partners

## Industry Analysis

As per the extensive research study by Facts and Factors, the demand study of the Global Internet of Things (IoT) market size & share revenue was estimated at around USD 310 billion in 2020 and is expected to reach around USD 1,842 billion by 2028, with a CAGR of 24.5 percent between 2021 and 2028. General Electronics, Microsoft Corporation, Amazon Web Services, International Business Machine (IBM) Corporation, Google Inc., Cisco Systems Inc., Hewlett Packard Enterprise, SAP SE, Bosch Software Innovation GmBH, Intel Corporation, PTC Inc., and Oracle Corporation are among the companies whose sales, revenues, and strategies are included in the report.

# GLOBAL IOT LANDSCAPE

IOT IS BEING PICKED BY GLOBAL GIANTS

| | | |
|---|---|---|
| (intel) **INTEL (2018)** $115 Million | **IBM** $3 Billion | G **GOOGLE** $3.2 Billion |
| **SIEMENS** **SEIMENS** $10 Billion | **HUAWEI** $6.3 Billion | a **AMAZON** $4.1 Billion |

### Global Internet of Things (IoT) Market:

| Report Attribute | Details |
|---|---|
| Market Size in 2020 | USD 310 Billion |
| Projected Market Size in 2028 | USD 1,842 Billion |
| CAGR Growth Rate | 24.5% CAGR |
| Base Year | 2020 |
| Forecast Years | 2021-2028 |
| Key Market Players | General Electronics, Microsoft Corporation, Amazon Web Services, International Business Machine (IBM) Corporation, Google Inc., Cisco Systems Inc., Hewlett Packard Enterprise, SAP SE, Bosch Software Innovation GmBH, Intel Corporation, PTC Inc., and Oracle Corporation, and others. |

## 3.1 IoT in Bangladesh

The IoT market in Bangladesh is expanding at the same rate as the rest of the world. In 2018, Bangladesh's Telecommunication Regulatory Commission (BTRC) issued an order to make the Internet of Things (IoT) legal. According to the report, there are nine sectors where IoT technology can be used in the country: smart buildings, industrial automation, smart grids, water management, waste management, smart agriculture, telecare, intelligent transport systems, environment management, smart urban lighting, and smart parking. The sectors that contribute the most to our country's economy are gradually adopting these technologies. For example, the agriculture sector, which employs the majority of the country's workforce, has begun to adopt IoT technology. For example, the agriculture sector, which employs the majority of the country's workforce, has begun to adopt IoT technology. Local entrepreneurs have started to offer innovative farming solutions based on the Internet of Things, such as systems that track cattle sleep, heat cycle, and behavior in real-time and provide farmers with timely recommendations. Smart home assistants, such as Amazon's Alexa, are increasingly relying on millennials to provide more convenience in their daily lives, indicating a growing market need in this region. IoT has tremendous untapped potential in various areas in Bangladesh, including transportation safety, environmental monitoring, healthcare management, energy management, smart grid management, and social security management.

## 3.2 Challenges

Despite the tremendous market potential of this technology, several obstacles must be overcome first in order to enable rapid industry expansion.

First and foremost, the country must ensure that a reliable internet connection is widely available, as it is the most important component of IoT technology. Although Bangladesh has successfully tested the launch of 5G mobile internet, the country still lacks widespread 3G coverage.

Second, there is a shortage of technologically trained persons as a result of a shaky industry-academia cooperation in the local relevant industries, resulting in a significant R&D resource deficit.

Third, the bulk of market leaders is either cautious about or uninterested in reaping the benefits of IoT technologies. One of the reasons for these concerns is that implementing such technologies into their regular procedures could create bottlenecks.

Finally, the most pressing issue is the nationwide instability in electricity supplies, which affects both consumers and businesses. To function at its maximum potential, IoT technology requires a continuous power supply. One of the reasons for these reservations is that incorporating such technology into their routine activities may result in bottlenecks.

Finally, the most important issue is nationwide electrical supply volatility, which has an impact on both consumers and companies. IoT technology requires a constant power supply to perform at its full capacity.

### 3.3 Porter's Five Forces Analysis

The following analysis identifies five competitive forces that shape the company's competitive position within its industry and helps to formulate a better business strategy to conduct its business proficiently and be more competitive.

**Competition in the industry: Moderately strong**

**Bargaining power of suppliers: Moderately strong**

**Bargaining power of buyers: Moderately weak**

**Threat of substitute products: Weak**

**Threat of new entrants: Moderately Weak**

## Overview of Main Activities

As part of the academic requirement, I completed my internship for 4 months working for the Product Management Department in Bondstein Technologies Ltd. During the 4 months period, I had to carry out different tasks and activities in different sectors of the department.

My duty was not limited to only one function within the department, rather I was liable for conducting different tasks at different times.

## 4.1 Regular tasks

1. Backlog Grooming

A backlog is a list of tasks collected over a time period from end-users and internal stakeholders that are to be developed in a future timeline.

As a part of the product team, I was responsible for collecting requirements from customers and stakeholders, documenting the requirements, and maintaining them in software.

### ⟲ Backlog ···

| Platform | Type | Name | Status | Assignm... |
|---|---|---|---|---|
| System | Proposal | TDS 2, Landmark New Approac ↗ OPEN | | |
| YBX  Panel | New Feature | Payment Gateway Integration | | |
| YBX | New Feature | Expiry Setup | | |
| System | TDS | 📄 Engine off/Speed Positive Case Resolut | | |
| System | Server | RAL Server Resource | | |
| System | New System | Landmark Deployment Plan | | |
| System | TDS | TDS 2 | | |
| YBX | New Feature | System Status Page | | |
| System | V2  Server | V3 > V2 Data fetcher update | | |
| App | Bug | iPhone 13 Mini - current location and vehi | | |
| System  YBX | API | Robi API **Admin | | |
| App | Bug | Password OTP Fix | | 👤 TAWFIQUE |
| System | Server | Staging Server | | |
| System | New Protocol | Banway - Piloting, testing & integration | | |
| System | New Protocol | Meitrack Integration in TDS | | |
| YBX | | Distributor agent access to other distribut | | |

FIG 2: Notion software

## 2. Prioritizing Backlog items

Product management is responsible for prioritizing features by ranking them against the strategic goals, strategic alignment, and business metrics. Difficult decisions are required to be made based on the opportunity costs and the trade-offs between competing features.

| EPIC / FEATURE | DESCRIPTION | IMMEDIATE USE CASE | Longer term vision | Impact to Metric 1 (1-5) | Rating | Impact to Metric 2 (1-5) | Rating | Strategic Alignment (1-5) | Technical Feasibility (1-5) | Ops Feasibility (1-5) | Total Score |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Current Location Page Optimization | | | Screen to ground latency below 10s | Revenue | 5 | Retention | 5 | 5 | 2 | 4 | 21 |
| Live Share | | | | Value addition | 4 | Satisfaction | 4 | 4 | 4 | 4 | 20 |
| Notification UI/UX + Notification Details | | | | Value Addition | 4 | Satisfaction | 3 | 4 | 4 | 4 | 19 |
| Alert Management | | | | Value Addition | 3 | Satisfaction | 3 | 4 | 3 | 4 | 17 |
| Bangla/Eng | | | Hyper-localization of product | Value Addition | 3 | Satisfaction | 3 | 4 | 3 | 4 | 17 |
| VTS Lite App | | | | Acquisition | 5 | Revenue | 3 | 4 | 2 | 3 | 17 |
| Drawer Enhancement | | | Everything that the user aim to do should be just one click away, however, the drawer must present users with just the right and correct amount of information. Personalizing infromation and recommendation based on data may be an area to explore here. | Acquisition | 4 | Value Addition | 3 | 3 | 3 | 4 | 17 |
| Paid Feature | | | A unique approach to the local industry to enable users with add-on, trial, special, complimentary | Revenue | 4 | Value Addition | 3 | 5 | 2 | 3 | 17 |
| Dashboard Page | | | | Value Addition | 3 | Satisfaction | 3 | 3 | 3 | 4 | 16 |
| Virtual Fence | | | | Value Addition | 3 | Satisfaction | 2 | 3 | 3 | 4 | 15 |

FIG 3: Prioritization Framework

## 3. Writing PRDs

Product Requirement Document (PRD) is the singular piece of communication tool used to describe what is required to be built and is used to align all stakeholders. The effectiveness of a PRD is crucial to the effective use of resources in developing a new feature or module.

I had to write a PRD for every feature in every sprint in every week. Writing PRDs is an art and a science. One has to understand the nuances of the feature and also the technicalities of it to write a PRD. It is also the tool that guides developers and provides them with a perspective of customers. A sample PRD is given below:

| # | R-01 |
|---|---|
| Title | Analytics Button on Menu |
| Description | -This should allow users to navigate to analytics screen<br>-It should be placed immediately below |
| Wireframe/Notes |  |
| Priority | HIGH. |
|  |  |

FIG 4: Product Requirement Document

4. Sprint Management

A sprint is a short, time-boxed period where a set of work is developed for release. For Bondstein, we have defined different sprint lengths for different teams understanding their capacity and optimum amount of reporting. For the platform team, the sprint length is 1 week and for the app team, the sprint length is 2 weeks.

Sprint management means planning a sprint and executing the same to deliver objectives. Effective sprint planning ensures the effective utilization of resources.
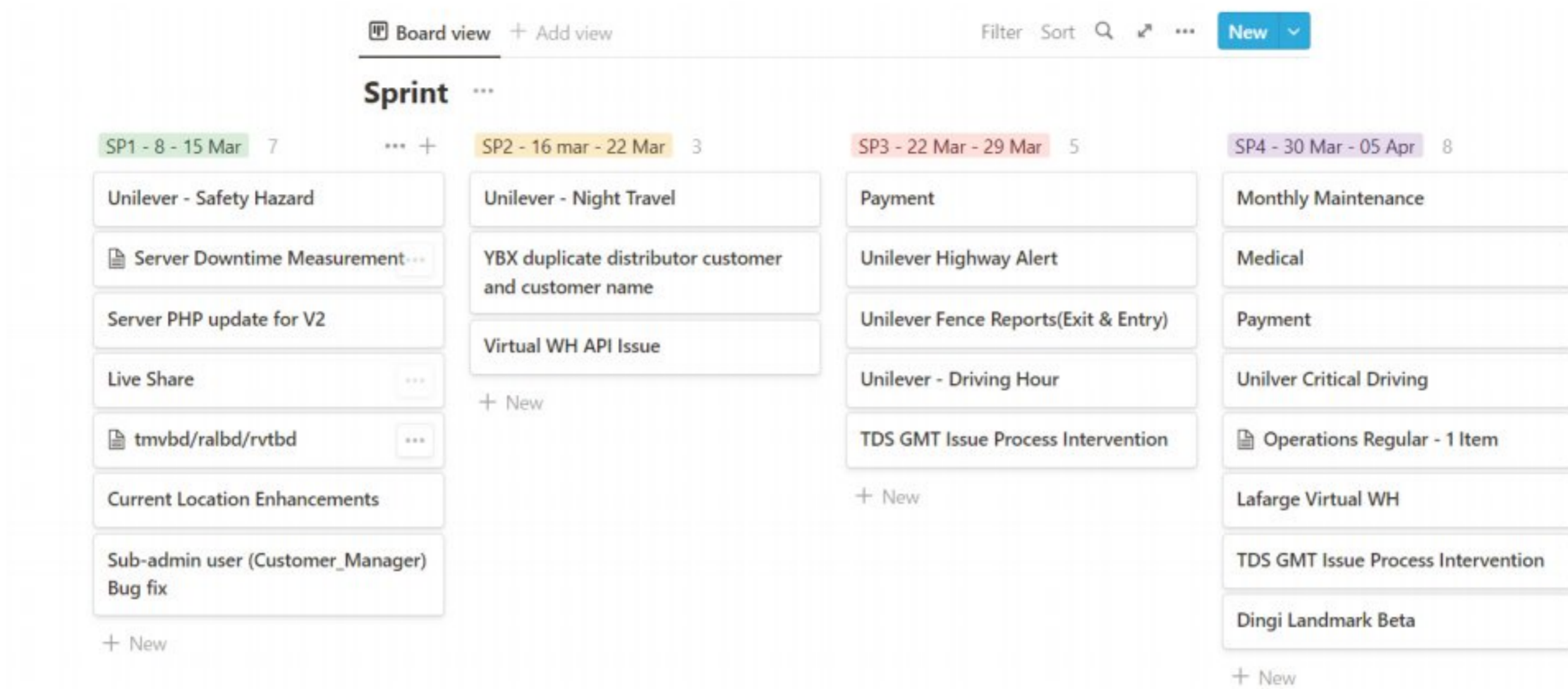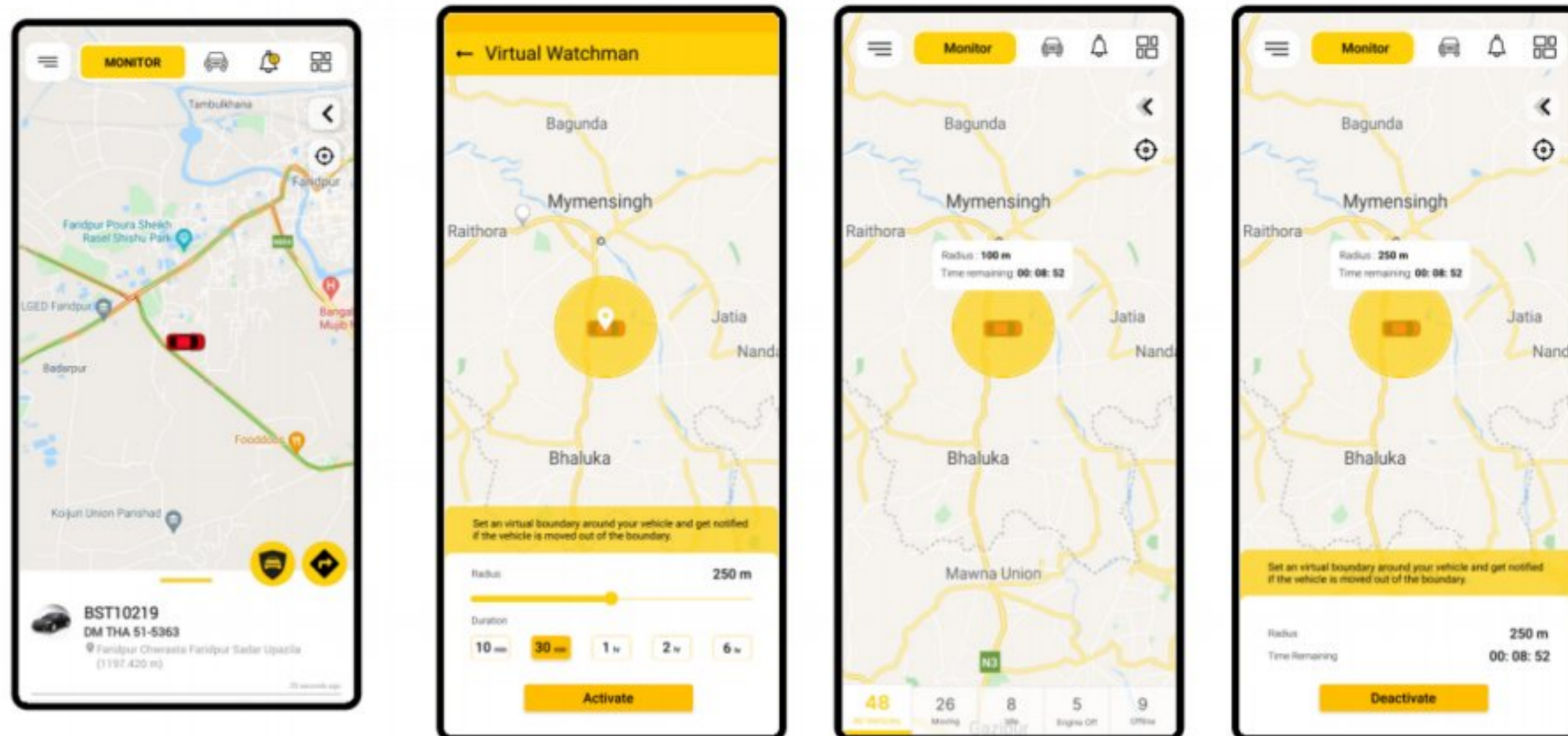
FIG 5: Product Roadmap

## 5. Defining releases

A release is the deployment of new developments from the development environment to the public that is obtainable by the end-users.

It is one of the core elements of product management to effectively plan, schedule, and meet releases. Our team was responsible for all of the tasks required to bring new products, features, and functionality to market, including managing the release process and cross-functional dependencies. This entails bridging gaps between the company's many departments and aligning important stakeholders, such as marketing, sales, and customer service.

## 6. Wireframing and UI Design

Given that Bondstein is a startup, by nature, it is a resource-constrained organization. Thus, its employees have to wear many hats going above and beyond their roles. In my role, I facilitated product development by wireframing and designing UIs of features. Below is a sample of my work:

Radius is to start from 50 m and end at 500 m.

FIG 6: UI Design

5. Building and sharing strategic roadmaps

A product roadmap depicts how the product will fulfill business goals and aids in work tracking.

It is a quarterly task of the department, I assisted in developing the roadmap that sets the broader goal of the product team aligning itself with the strategic objectives of the organization at large.

6. Progress analysis and reporting

Great product managers are obsessed with outcomes, both for consumers and for the company as a whole. To understand how your product is functioning, you need a complete picture of progress toward goals.

- Consider the following list as a starting point for ideas and to keep your team focused on producing its finest work:
- Effectiveness of the group
- What is the status of the most important initiatives?

- Which inefficiencies or roadblocks must be overcome?
- Are we happy with our team's speed?
- Are there any difficulties with capacity that need to be addressed?

Use of the product

- What are the most and least used product features?
- Where do users become trapped and forsake our service?
- How many trial accounts convert to paying ones?
- How many accounts are expanding while others are shrinking?

7. Product Analytics

As an initiative to partake in Data-driven decisions, the department regularly analyses data collected for its applications and web panels in Google Analytics and Firebase. I spent at least 2 hours a week analyzing these collected data to understand bottlenecks and see trends.

## 4.2 Atypical Duties

The uncommon duties were bestowed upon me as challenges. This section is dedicated to briefly explaining the irregular activities as a part of the internship:

### Client Visits

Understanding customer needs is a crucial step in the product development journey. To understand customer needs, I used to visit clients with the Business Development team and understand and capture their requirements.

### Proposal Preparation

Given that Bondstein is a customized IoT solution designing firm, a lot of requests for proposals are received by business development. I had to support business development by understanding the needs and translating them into product solutions in collaboration with the R&D team.

### Business Pitch

This is one of the most highlighted experiences of the internship as I was given the opportunity to pitch solutions to a lot of clients and some of them were some of them was industry and business leaders of Bangladesh.

**Tender Documentation & Filling**

Bondstein Regularly files for tender against 'Request For Quotation' for multiple agencies and corporations such as Robi Axiata Ltd., Dhaka South City Corporation, etc.

**Operational Visit**

The best learning is found where the product is in action. This is one of my favorite activities to do. I had to occasionally visit the sites of clients to oversee and supervise operations and learn about how it's ground realities.

## Milestone Projects

1. **Forklift Telematics - British American Tobacco**

   An industrial scenarios a huge number of forklifts are used for moving inventory and palletizing racks. A common issue faced is the drivers driving too harshly for meeting the KPI and in reality, causing a huge amount of incidents that pose a threat to the ground employees and product damage-causing further production inefficiency. To tackle this issue, we developed an in-house IoT device capable of monitoring events like harsh acceleration, harsh braking, overspeeding, and runtime of the vehicles in real-time 24/7. The device detects the events through local thresholding and filtering of the raw data and transmitting through SMS-based protocol. The events can be viewed through a dashboard along with scoring for each driver/shift.
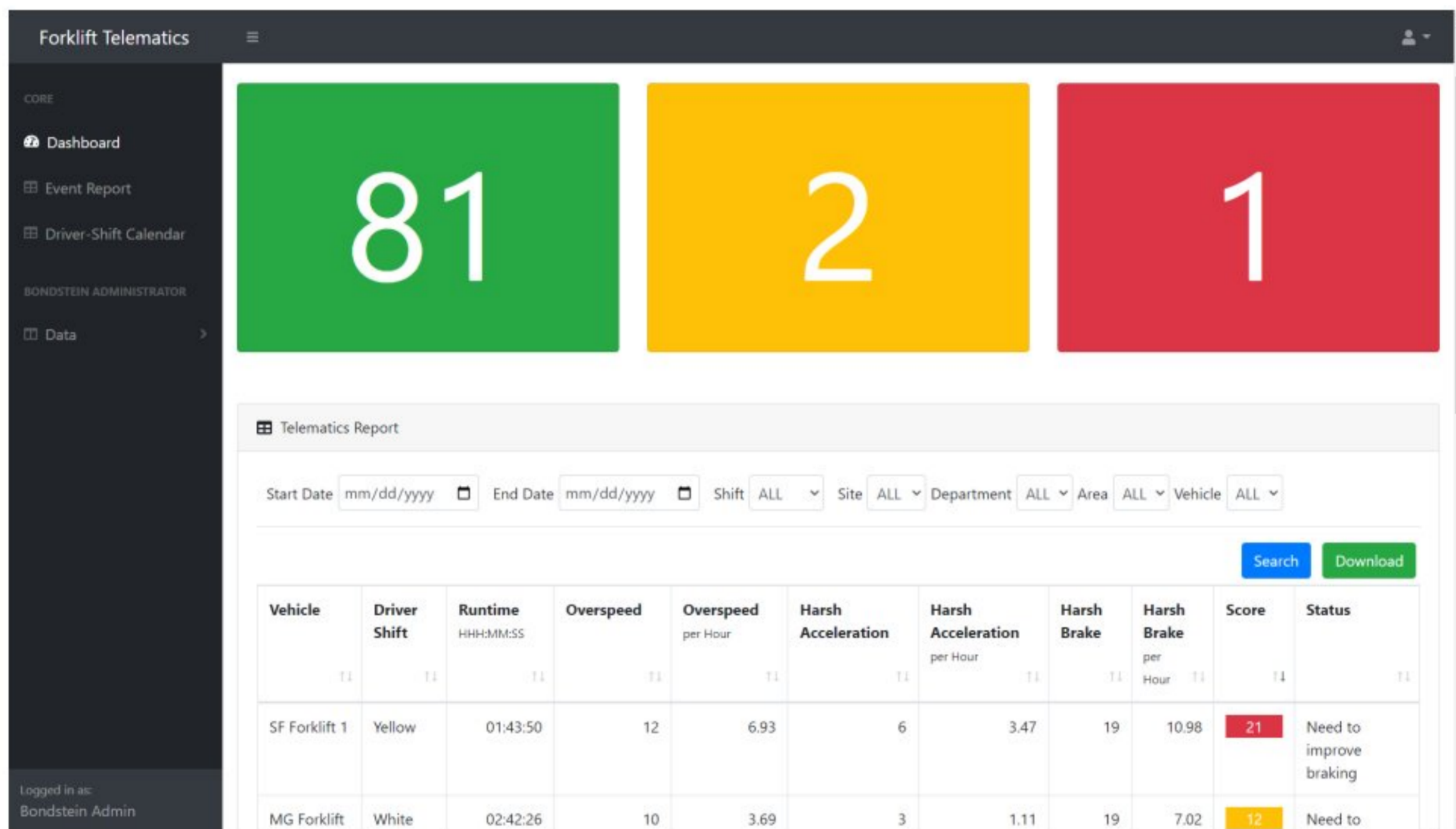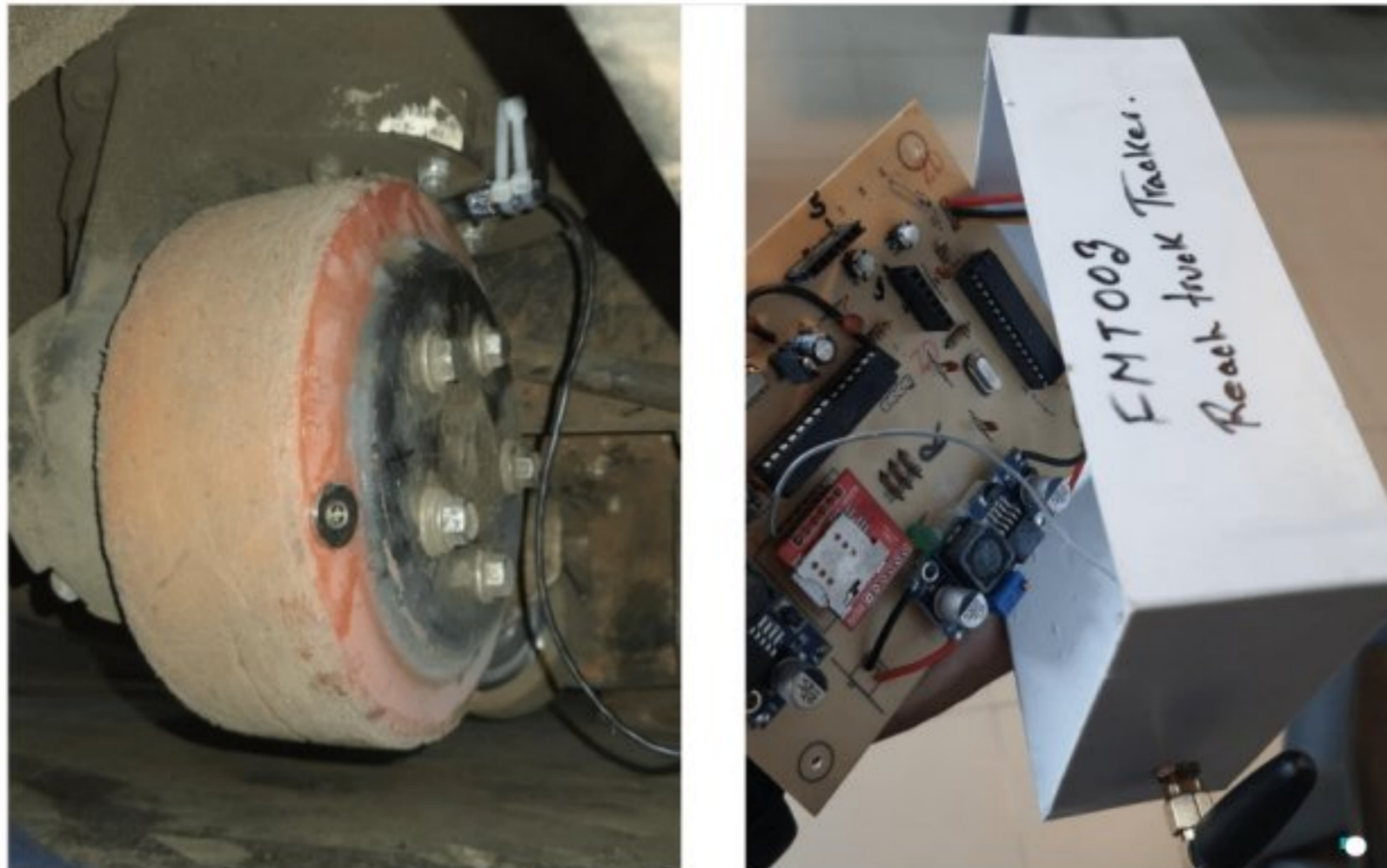
FIG 7: Software Product - Forklift Telematics

## 2. Remote Cloud Printer - Lafarge Holcim

LafargeHolcim encountered an operational inefficiency and went out of the box to solve it. In order to increase PoS with easy deployment and scalability at a very low cost, we had devised, developed, and deployed a Virtual Warehouse and Cloud Challan Printing solution.

## 🟡 My Role

I, and my team, worked with the client to expand the product vision from an online printing solution to a virtual warehouse solution. I managed the product as it passed through the various stages of scope, user interviews, design, validation and initial MVP.

My responsibilities extended to coordinating a diverse team that spanned various domains across RND, Tech and Operations parallel to regular communication with client.

### PROCESS: BUILDING PRODUCT WITH THE USERS

1. USER INTERVIEWS + CONTEXTUAL ENQUIRE = UNDERSTAND HOW END USERS TEND TO USE THE PRODUCT AND THEIR PAINPOINTS.

2. CREATE USE CASES + UNDERSTAND BUSINESS GOALS = PRODUCT FITS PURPOSE

3. VALIDATE WITH USERS FIRST THROUGH MOCKUPS AND THEN IN EVERY STEP OF THE MVP

4. DEVELOP AND ITERATE AND VALIDATE AND REPEAT.

5. DELIVER

### KEY TAKEAWAYS:

1. AS ONE OF MY FIRST PRODUCTS WITH EXTERNAL STAKEHOLDER, IT TAUGHT ME THE IMPORTANCE OF UNDERSTANDING AND DEFINING THE SCOPE OF PRODUCT.

2. LEARNT A GREAT DEAL ABOUT HOW MQTT AND PHP COMMUNICATED TO DELIVER AN IoT SOLUTION.

3. FACED THE MOUNTAIN CHALLENGE OF DELIVERING IN 30 DAYS AND HOW TO DEAL WITH UNFORESEEN DIFFICULTIES.

4. LEARNT TO MAKE HARD DECISIONS.

## FINAL PRODUCT
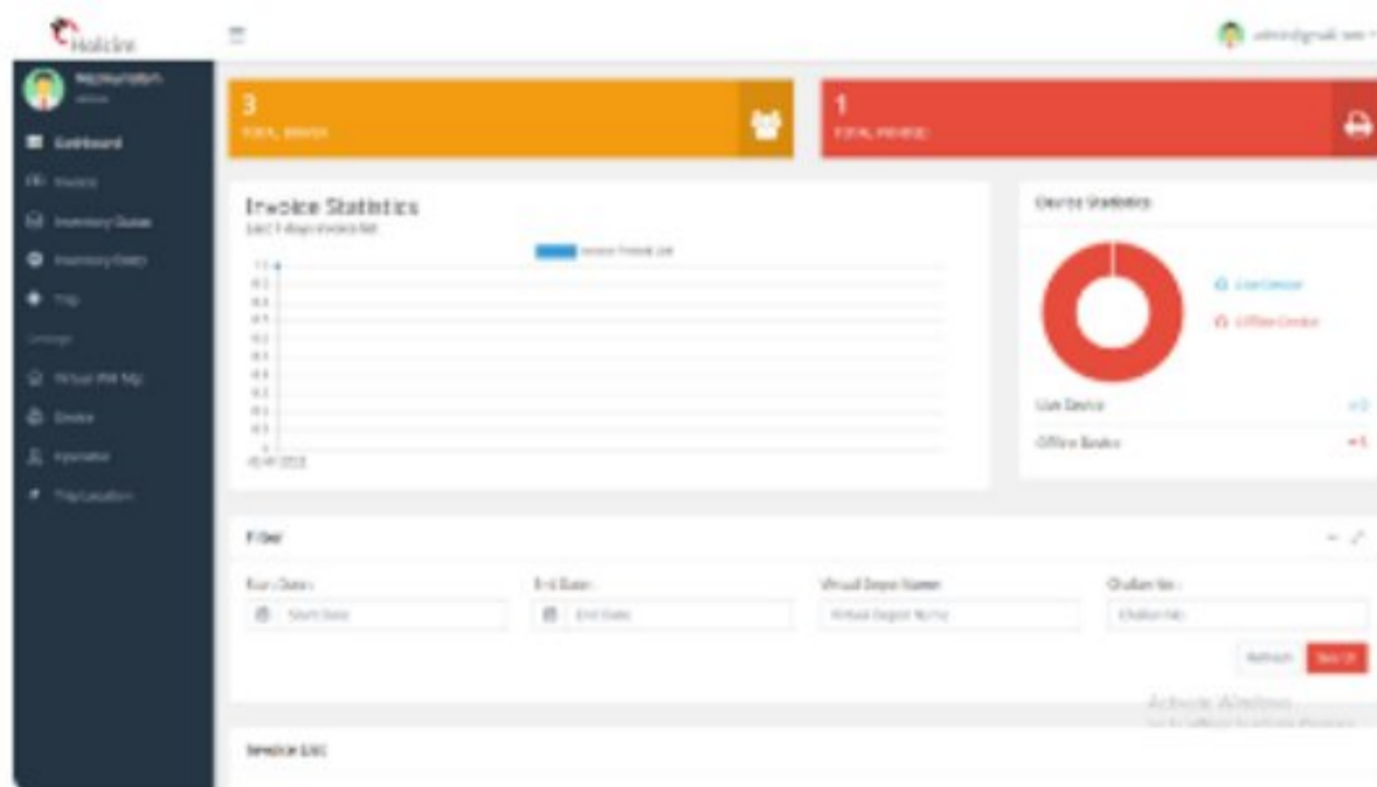


SOURCED HARDWARE
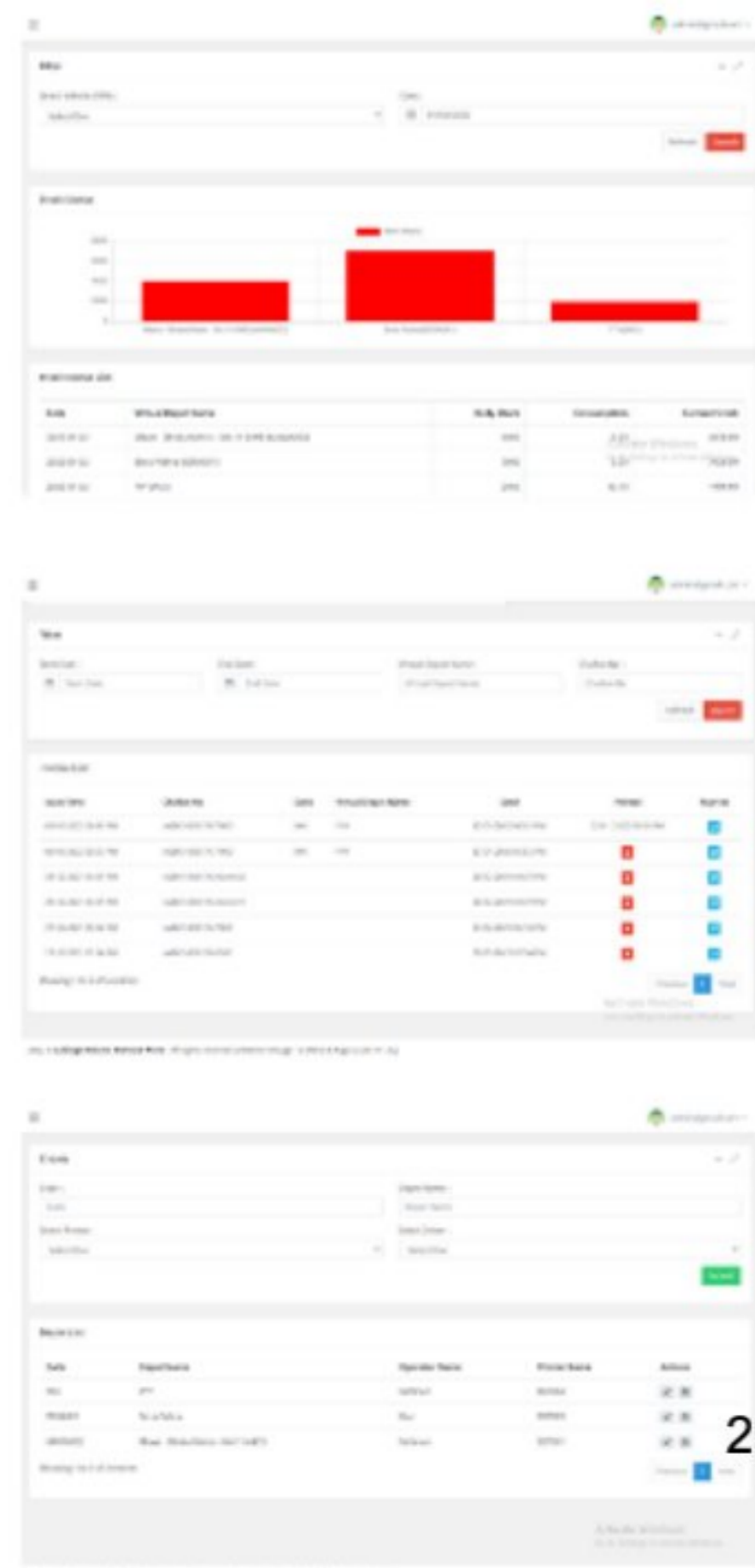
## 3. Support Request System - Bondstein

Bondstein Technologies LTD at its core relies heavily on the subscription-based business model and measures its success on this key parameter as a startup. Predominantly, It relies heavily on its service to the end-users. With that as the ultimate objective, we need to improve our service delivery by improving our Support Ticket Management within the controller(YBX).
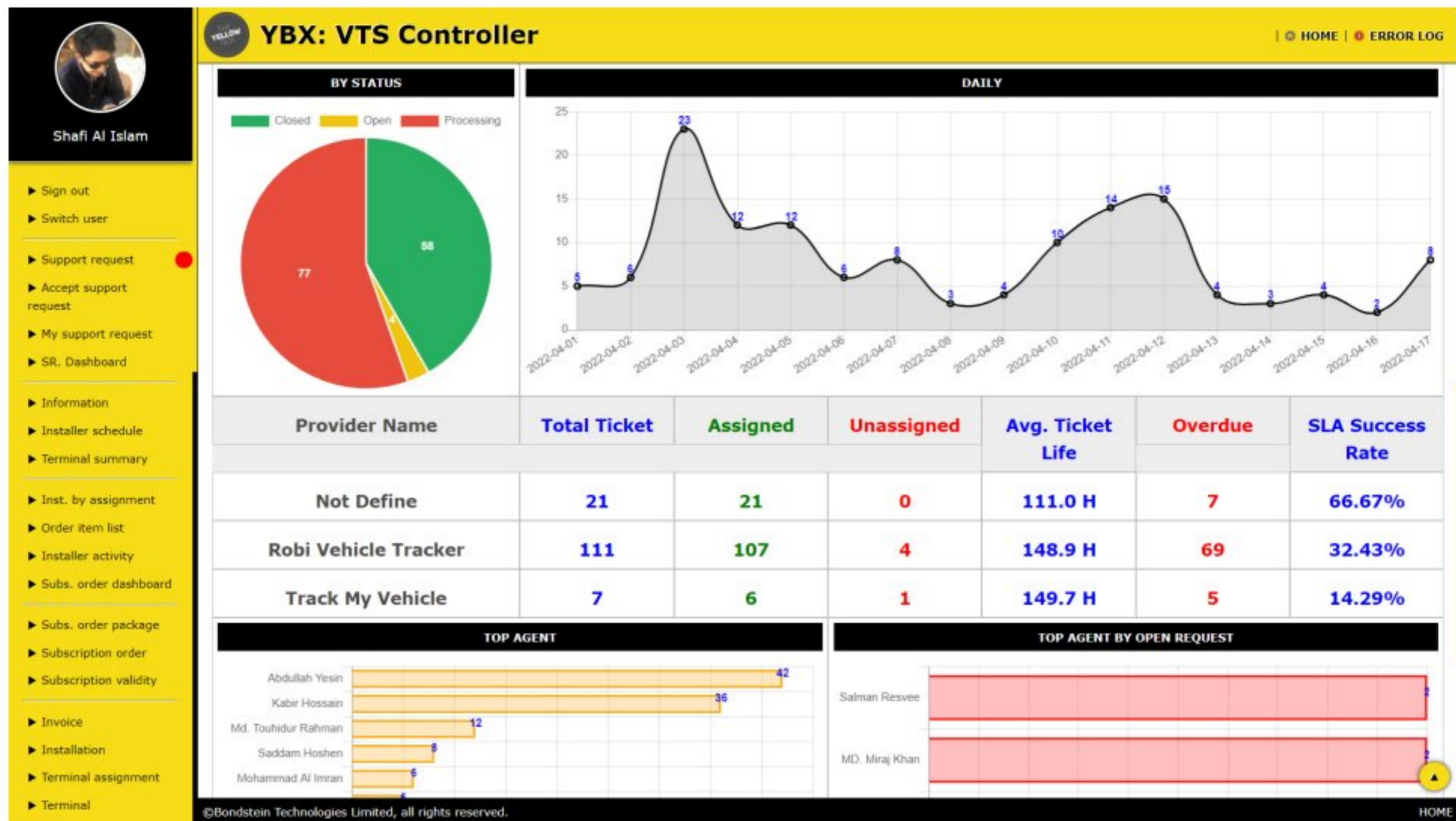


FIG 8: Software Product - Bondstein Yellow Box

## 4. Track My Vehicle App - Bondstein

App is the most crucial point of contact for Bondstein's customers. In my duration as an intern, I have successfully launched multiple features on the app.

## Analysis of Internship Activities

This section of the report is dedicated to analyzing the internship activities and relating the completed activities with the learning outcomes and the skills developed and improved throughout the internship period.

**6.1 Company Level Analysis**

The observed efficient and inefficient processes during the period of my internship are explained below:

**Efficient Processes:** Since Bondstein is growing at a fast pace, I found some of their processes of task accomplishment extremely efficient.

- **Goal setting and accountability of tasks:** Employees at the individual level within the team set their own goals at the beginning of the day during the standup meetings regularly. They used to set their OKRs (Objective Key Responsibilities) for accountability purposes and take on the tasks as planned by the whole team.
- **Use of cloud services:** Bondstein uses Notion, Jira and In-house built Yellow Box cloud services to run their overall operation. Cloud provides them with a streamlined organization-wide distribution of information that is readily available.
- **Streamlined communication:** All the employees are connected to the internet 24/7 and they use Microsoft teams for communication purposes among themselves. All the major updates are communicated via the channels so that everyone is aware of the changes.
- **Efficient project management techniques:** The agile framework is being used to carry out most of the project works. The work breakdown structure is written on a board of scheduled tasks. Each task is assigned, ordered, and removed based on the progress of the overall project. It ensures efficiency in the tasks performed and accelerates the project performance over time.
- **Robust employee hiring and training processes:** Each of the employees go through an interview process. Technical incumbents are given practical assignments that they are obligated to perform on spot within a specified period of time.
- **Individual consideration and consulting periods:** Employees are given the opportunity to consult both their personal and professional needs with the top management anytime. They are given the full autonomy of work so that they can

evolve over time. The CEO takes good care of his employees at an individual level to promote motivation among the employees. Therefore, a friendly work environment exists within the organization.

**Inefficient Processes:** Bondstein has only recently begun to scale, and there is yet room for progress. Its growth potential is great. Within the company, there are no substantial inefficiencies. However, I discovered that some staff is overly reliant on top management or the CEO himself for approval on every minor detail. Although they strive to retain clarity throughout, this propensity might cause delays in project timetables, since coworkers may be required to wait for the previous task to be done before moving forward. As a result, the intended procedures became inefficient, and the staff was forced to work longer hours to restore normalcy to the overall work schedule.

## 6.2 Market Level Analysis

Bondstein's product, nationwide operations, and business network created a core competency for their business within the IoT industry. The popularity has already started to grow among the businesses of Bangladesh. They are able to compete in the market with the following competitive advantages:

- **Industry knowledge and experience:** The pioneers of Bondstein are very good at what they do. They know the challenges, and pain points of consumers and businesses all along. Employees are given comprehensive training so that they can understand the actual need in the market before they start developing any solution for the client.
- **Technological know-how:** Employees are well aware of the market demands and have the technical knowledge to design and develop the systems required to meet those.
- **Collection of data:** Bondstein has the largest collection of IoT data crossing the 50 billion mark.
- **Nature of business:** Considering the impact created on the existing market, the number of players in the IoT industry is not so many. Bondstein is focused on hyper localization and hyper customization as their USP.
- **Networking:** The sustainably efficient services provided by Bondstein have brought them to the limelight within the existing business organizations of Bangladesh.

Therefore, they are able to develop a good relationship with the existing businesses being popular by providing their uninterrupted services.

**6.3 <u>Professional Level Analysis</u>**

Internship at Bondstein has definitely been an exciting experience. It has provided me freedom and ownership of tasks and allowed me the platform to portray my skills and at the same time challenge my limitations. Working with so many diverse projects in multiple business functions has definitely helped to grow professionally. Nonetheless, there are definitely certain drawbacks. It is noted that at times delegating such a degree of ownership leads to a lack of direction and leadership that often promotes the risk of failure.

To conclude, the organization being very young is fairly well-structured and highly professional in its work and ethical parameters. It is definitely an excellent choice for anyone with an entrepreneurial spirit.

**6.4 <u>Learning Outcomes of the Internship Program</u>**

Throughout my internship period, I was able to work alongside different individuals from the organization and it has given me a chance to gain a holistic view of the activities conducted by the entire business entity. The learnings that I have gathered from my internship period are discussed here briefly.

- **Understanding the importance of always listening to customers**
- **Gaining insight knowledge of the industry**
- **Understanding End-to-End digital product development process**
- **Understanding the IoT and Technologies in the field of IoT**
- **Shaping ideas into visuals**

- **Holistic understanding of operating a startup and business in Bangladesh**

## 6.5 Skills Developed during the Internship Period

As I was assigned to complete different tasks, I had developed many skills which will be useful for me in my future endeavors. In this section, the gathered skills and the relevant experiences that led to me gaining these skills will be discussed.

- **Business communication**
- **Networking**
- **Pitching**
- **Problem solving**
- **Time management**
- **Delivery management**
- **UI/UX Design**
- **User Research**
- **Business Commercial and Case Development**
- **Collaboration**
- **Team Leadership**
- **Remote Team Management**
- **IoT Cloud Basics**
- **Client Servicing**
- **Business and Partnership Development**
- **Stakeholder management**

# Conclusion & Recommendation

## 7.1 <u>Recommendation</u>

I'll include some of my key observations and recommendations for Bondstein below, which may be valuable to the organization as a whole:

- Redesign their operations in more efficient and modern methods.
- Facilitate environment to nourish innovation and ideas even more.
- Put more focus on service quality along with growth.
- Introduce and establish credible employee reward programs.
- To generate an accelerated growth possibility, the number of personnel in the business department should be raised by hiring professionals in the sector.
- Employee communication should be improved to the greatest extent practicable.
- Although the staff is given clear instructions, they occasionally do not comprehend the next task, which causes delays in the project's overall timetable.

## 7.2 <u>Conclusion</u>

After the successful completion of my internship period under the Product Management Department of Bondstein Technologies Ltd, I have successfully learned how the processes of the department are completed. The activities of this department vary from conducting user research to developing products. I have been able to gain knowledge of all the processes through participating in the activities. I had different theoretical knowledge about the activities conducted in an organizational setting, but after the completion of the internship program I have successfully understood the practical knowledge, I required and have been able to align the theories with the real-world scenario. Bondstein Technologies Limited has been trying its best to create a sustainable ecosystem for its customers. Enabling users with the power of accessible and affordable connected technology is the vision of the company. I have tried my best to reflect upon the activities that I have completed in my four months tenure and the learnings I have gathered in the timeframe. The working environment of Bondstein Technologies Limited was extraordinary which helped me to focus on the assigned tasks and complete them effectively. The employees of Bondstein Limited were extremely friendly and assisted me in every way possible. I have completed my four-month internship with the learnings of a lifetime which will help me both personally and professionally throughout my career.

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