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Operation Management & User Verification System

CLIENT INTRO

The BCIL had started its business activities in 2001. They work on Government projects and schemes with Multiple Banks such as National Bank of Pakistan, Bank of Punjab, Muslim Commercial Bank, The Bank of Khyber and Meezan Bank to verify and validate the national-level data.



KEY SERVICES INCLUDE

- Govt Business Information Reports
- Government Employees Income Estimation reports
- Corporate Search Report
- Registration, modification of loans reports
- Regularization of corporate matters on the instructions of banks like enhancement of capital filing of forms etc.

EXECUTIVE SUMMARY

BCIL project involves a central operations management system with some additional features that will magnify the performance of the Government level projects and national schemes data verification process and achieve the highest level of efficiency with day-to-day operations.

It's a kind of data management application along with OMS (Operations Management System) that helps to run, monitor, and schedule day-to-day internal team activities.

BCIL operations management system software is able to collect data in different formats and provide data-backed reports that will allow the team to make the right business decisions. BCIL also provides insights into the status of business operations as well as the demands on production capacity.

Their existing systems were posing serious challenges in their day-to-day operations and weren't helpful to maintain the data records in a well-organized manner. We found that the biggest challenge is to execute different projects and their data verification and validation process in the backend simultaneously in different formats.

So, we wrote the complete BCIL application from scratch to fulfill the following set of requirements to deliver the most stable and smooth executions for their daily operations. We have developed the following:

✓ **Team Management System**

We designed a system to help register BCIL's internal team and grant them access based on their role. Even external users like Bank Members can register in the system based on the newly integrated government projects and can access the system with the required data.

✓ **Roles & Permissions Management System (ACL System)**

An ACL(Access Control List) which registers users in the system based on their roles and permissions. The users can keep track of their monthly team performance and project's status.

✓ **Project Management System**

A Project Management System that will allow the admin to add projects and allocate relevant resources to manage the projects. Admin can assign tasks to each team member in any relative project and keep track of the project's progress. Admin can track internal and external team's performance with respect to projects.

✓ **Data Verification System**

The projects are assigned to the banks by the government. BCIL assists banks in data verification. BCIL gets data from the Government in a system that helps to secure the data verification process. The data verification process is done in the following way, the status of a case is changed after each step:

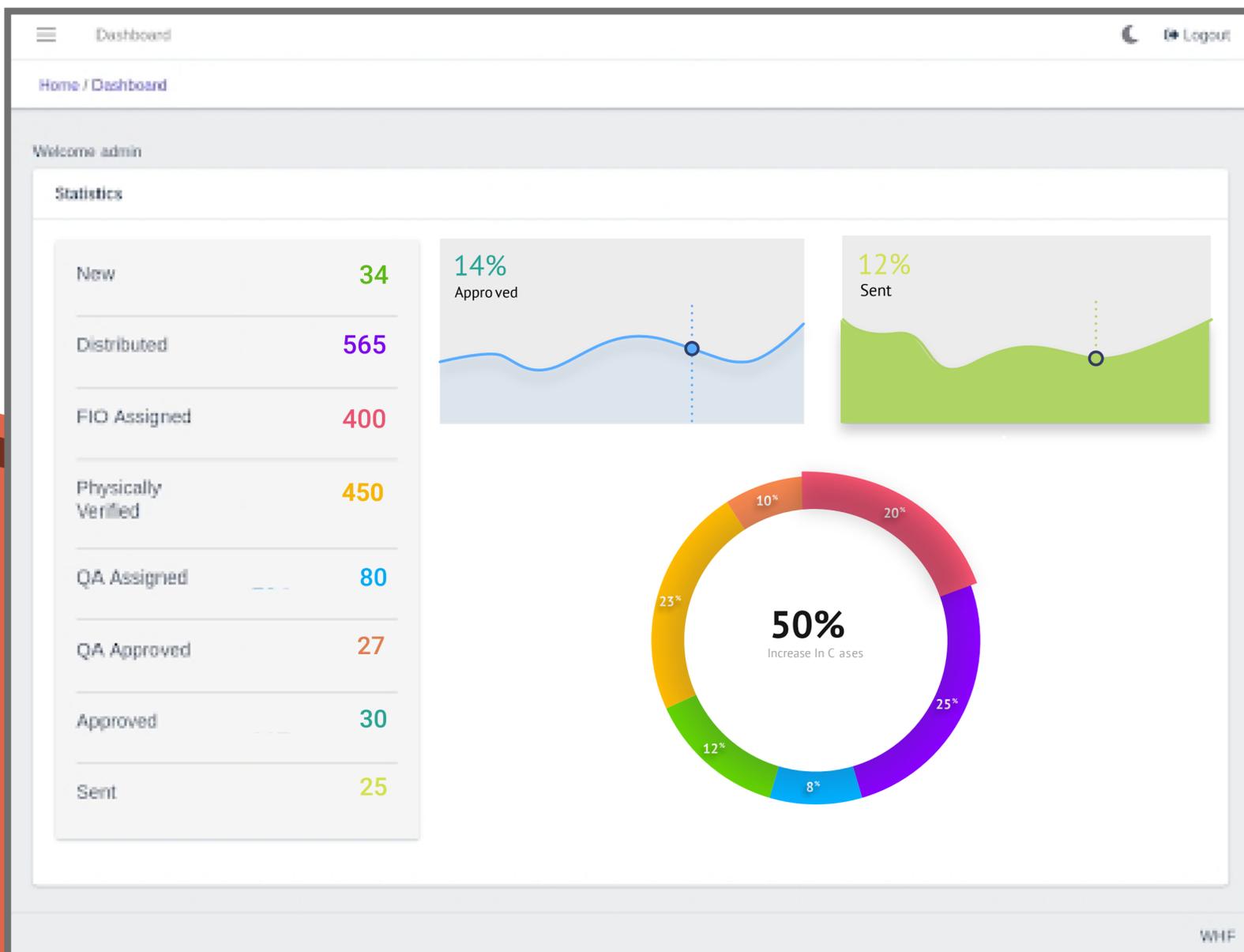
1. First admin gets the data/case from the relevant bank and the task is assigned to the BCIL Branch Manager. The Branch Manager then forwards the case to the FIO(Field Investigation Officer) team. It is the duty of the FIO team to verify the case. The status of the case is, "under verification" at this stage.
2. The FIO gets the details of the case in his/her mobile application. When the case verification is done, the status of the case is changed to "verified".
3. After getting the approval from the FIO, the case is sent to the Quality Assurance team for quality checks. The status of the case is, "under QA verification" at this stage.
4. When the case is verified by the Quality Assurance Team after running QA checks, the status of the case changes to, "QA verified". These verified cases are added to the QA Approved Projects list and the project admin will be able to reverify them.

5. In the last verification step, the admin verifies the cases on his/her end and approves them. System automatically sends the verified/completed cases to the relevant bank panel.

In short, each case goes through 8 steps and the status of the case is changed at each step. The admin can track each status in the web application.

✓ Invoicing Management system

A complete invoicing management system that keeps record of team's completed cases and generates team and government invoices based on the project agreement.



ID	name	code	address	website	Phone	profit	fax	lat	lon
1	Mozar Bank	MZV	6C Umr Bismarck Gulberg	https://www.mozarbank.com	(011) 35679830	MZB		2	
2	The Bank of Egypt	BOE	The Mall Boulevard Central Nasr City	https://www.boe.com/eg	011-111 200 255	BOE		2	

Add New Bank User

username * email * password *

password-confirmation * role * bank region *

branch * Status



Questions

bank * Project * Sector *

This field is required

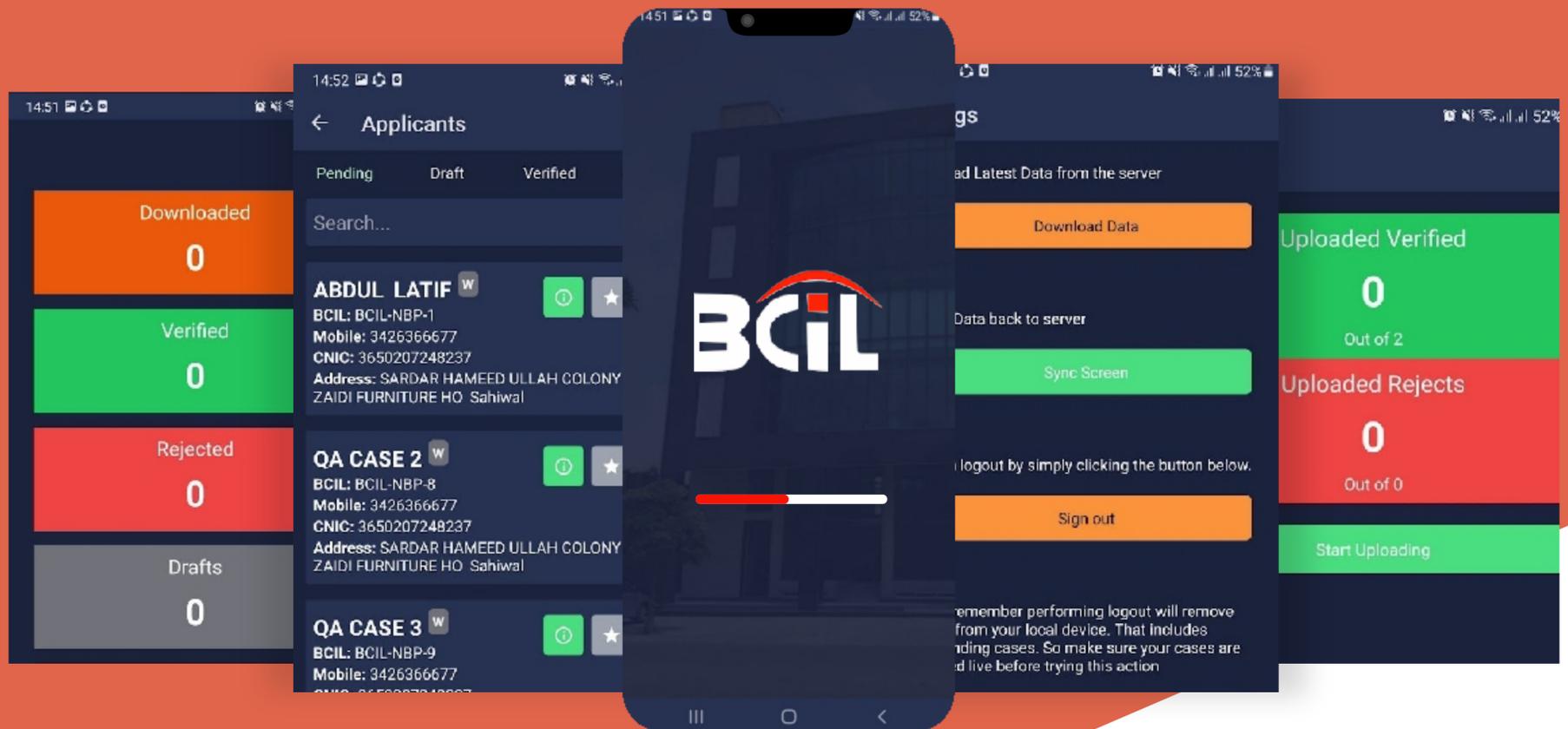
Input type * Question Description *

Bank Question id * Cmbx * group in Sport * is Register * Satisf *

✓ Mobile App Development

A full fledged user friendly mobile application for the FIO team to receive and submit verified data after physical verification. The data is constantly synced with web panels through the APIs. It helps the FIO team to go through the data with ease.

This application works offline as well. This technique helps to avoid any kind of internet disruption. With the accessibility of internet data gets synced automatically with the system. An advanced google map is also integrated with this mobile application that helps to get the exact location of the applicant.



CHALLENGES

✓ System Centralization

The core responsibility of the system is to process requests and jobs from different banks as individual parties on different government projects. Every bank and project has its own set of data and processing requirements. Streamlining this process for BCiL posed a serious challenge in this project.

Furthermore, to verify the integrity of the data submitted by the BCiL agents, the accurate location of the place where the data is coming from plays a vital role. Getting the latitude and longitude values to track the exact submitted location depends heavily on the device's GPS sensors.

✓ Assembled BCiL Business Statistics

The User Jobs Statistics dashboard displays user roles. For analogy:

- Statistics will pop up in the customers (Bank) account related to its respective data as per the client's requirement.
- Statistics will pop up in team members e.g. Branch user FIO user and QA officer accounts to monitor their jobs based on different filters.

Transparently, Super Admin and bank users can monitor company business statistics, Branch's business statistics and team statistics for monitoring BCiL team performance.

✓ **Data Security Risks**

As BCIL is working for the government sensitive data, therefore, the biggest challenge in this project was maintaining the security of the system. We had to develop dedicated Web APIs for dedicated banks and projects. We had to take care of data transfer through proper channels so we formed a direct path from BCIL to the relevant Banks. It was necessary to focus on building a highly intelligent security system to detect any unauthorized activity.

✓ **Develop ACL System that helps to assign and track the single case status**

Develop an automated system that will define the user roles, permissions and data security. In this Project, multiple users work on a single case simultaneously.

Therefore, it was a challenge to simplify workflows, reduce human errors, and automate the tracking system. It was a necessity for the admin to track the status of any case and project online easily.

✓ **System Flexibility**

Another challenge was the development of a fully flexible solution in terms of code structure and database structure that helps enhancing the system as much as the client wants.

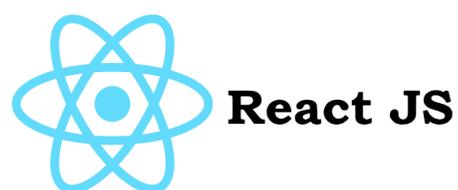
PROPOSED SOLUTIONS

After identifying BCIL business challenges, our core development team which includes the technical team and the management team had a meeting with the BCIL's management. Our team drafted a top-notch solution and presented it before the client to meet their business and security needs.

We went through the following path to design the this System:

- 1- Gather all the requirements and clarify the user journey with the stakeholders.
- 2- List down all the challenges and their solutions.
- 3- Define the technology stack and plan its benefits & drawbacks.
- 4- Design the user journey interfaces for Web and Mobile Application.
- 5- Design the database structure to centralize & automate all the projects and case tracking procedures to avoid human error and efforts.
- 6- Maintain the Web API flexibility in terms of coding structure that helps to enhance and change the system at any point without any hurdles.

After detailed discussions with the stakeholders, we chose the following platforms to develop a fully automated solution:



CONCLUSION

It was a challenging project because we had to manage the data which had sensitive information about the clients of Banks and BCIL (Banks are the clients of BCIL). We had to make sure to develop a system which would insure the confidentiality and integrity of the data. As we have a very strong technical background, we were able to develop a system which was perfectly structured and was as secure as a bank vault.

Our client is really happy with our work and is willing to hire us for the future expansion of this system. It is our policy not to provide just a working solution but to provide a solution which is both working and scalable. Thanks to our vast experience and expertise, we were able to achieve another milestone.

Thanks For Watching!



Contact us today and we will turn your ideas into successful projects.

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