Success Story

Digitizing rural healthcare: Scaling Poshan Tracker application for 100 million beneficiaries in India

Customer	Country	Industry
Digital India Corporation	India	Government

About The Client

The Digital India Corporation (DIC) is a business division under the Ministry of Electronics & Information Technology (MeitY). It supports the programme management and implementation of e-Governance projects & initiatives at both central and state levels. DIC develops a range of digital solutions for various urban and rural causes. Some of the successful executions under the Digital India initiative include the National Academic Depository (NAD), MyGov platform, Academic Bank of Credits, etc.

Technology Stack

Laravel	mongoDB.	aws
MySQL	python™	

Business Situation

Anganwadis are courtyard healthcare centers spread across suburban and village districts of India that function as mother and child care centers in rural areas. In order to track the health and nutritional statistics of women and children in rural areas, the DIC initiated a pilot programme called Poshan Tracker. Poshan Tracker is a web and mobile-based application that Anganwadi Workers (AWWs) use for tracking the nutritional intake of beneficiaries such as lactating mothers, adolescent girls, toddlers, etc.

Poshan Tracker, in its existing state, was a small-scale solution and had only been rolled out to a limited number of village districts in India. DIC's original aspiration for this application was to enable thousands of Anganwadi Centers (AWCs) spread throughout the country to improve the lives of mothers and children.

DIC was on the lookout for a technology partner who could re-engineer Poshan Tracker to track a nationwide database of health stats. The company chose Daffodil for its successful track record of achieving economies of scale in digital solutions by leveraging the latest cutting-edge technologies.

Daffodil analyzed the existing capabilities of Poshan Tracker. It took into consideration DIC's vision for the application, and determined the following key expectations for the modernized solution:

- Accommodate usage by hundreds of thousands of Anganwadi workers.
- Scale up the application for tracking crores of beneficiaries across thousands of Indian village districts.
- Eliminate errors faced by AWWs when logging into the application.
- Provide the facility to migrate beneficiary information from one Anganwadi Center (AWC) to another without redundancies or data distortionIntegrate beneficiary grievance redressal systems and state-level help desks for AWWs.
- The application must generate detailed nationwide and state-wide reports with charts and graphs for perusal by higher-ups in the Ministry of Women & Child Development (WCD).

The Solution

Team Daffodil implemented a range of enhancements in the Poshan Tracker so that it could help vastly scale up user and health data volumes, enhance reportage, improve grievance redressal, and much more. The application was enhanced in the following ways:

Setting up the infrastructure for enhanced accessibility

Initially, the client relied on their own servers for their system, which brought about several challenges such as difficulties in expanding, frequent system downtimes, and high initial costs. This setup struggled to keep up with the increasing demands of the Poshan Tracker application, limiting its potential to expand nationwide. In response, Team Daffodil proposed a solution: transitioning the client's system to the AWS cloud.

Following a successful transition to AWS, the Poshan Tracker application experienced improvements in its performance, reliability, and capacity to accommodate growth. The upgraded infrastructure allowed seamless access for users across thousands of Anganwadi Centers, enhancing the efficiency of health and nutrition data tracking for millions of beneficiaries. Despite transferring large volumes of data between healthcare centers, there were no issues of data distortion, as a previously problematic compression mechanism had been eliminated.

Empowering care providers for better health outcomes

Utilizing Poshan Tracker, health workers can record the health details of beneficiaries such as height, weight, diseases, stunting, signs of malnourishment, etc. They can allocate vaccinations, Take Home Ration (THR), and Hot Cooked Meal (HCM) based on the specific nutritional needs of the beneficiaries. The health improvements in beneficiaries are recorded and charted in the Growth Monitoring module. The positive outcomes for beneficiaries are then presented as the Efficiency Measurement on the application and the Anganwadi initiative itself.

Facilitating stakeholders with data-driven insights

All activities related to AWCs, AWWs, and beneficiaries that take place through the application are monitored and recorded. While a public dashboard on the Poshan Tracker website gives a transparent view of the services rendered, the Daffodil team has ensured that more comprehensive and detailed reports can be generated.

These reports contain bars, comparative charts, and drill-down analytics of every service delivered and related improvements in the health of beneficiaries. The WCD can use these reports to ascertain where their initiative is lacking and how the service delivery can be improved and spread wider. There are daily, monthly, and quarterly reports that can be generated with the authorized national or state-level WCD login.

Ensuring healthy pregnancies through monitoring module

To support expectant mothers, Daffodil created a module to monitor the health of pregnant women, focusing on gestational weight gain and overall health status. Simple graphs showed how much weight a woman had gained over time, helping healthcare workers ensure healthy pregnancies. Visual cues helped identify if a woman's weight gain fell below or exceeded healthy ranges, prompting caregivers to offer additional support or guidance as needed. The module also allowed for easy tracking of prenatal visits and other important milestones throughout the pregnancy journey.

Moreover, Daffodil developed an intuitive module for monitoring the health and growth of children, utilizing graphical representations to present growth monitoring data comprehensively. The module included features such as color-coded graphs to indicate the health status of children, distinguishing between underweight, moderately underweight, and normal weight categories. Additionally, The module also incorporated built-in alerts for critical health indicators, ensuring timely interventions and follow-ups for children at risk of malnutrition or other health issues.

Digitizing inventory for transparency

The Daffodil team also focused on digitalizing the stock management processes, streamlining inventory tracking and consumption analysis. The module provided caregivers with real-time visibility into stock levels, usage patterns, and expiration dates for essential supplies. Automated reorder alerts and inventory tracking features helped prevent stockouts and minimize waste, optimizing resource allocation and reducing operational costs. The team also integrated the module with existing supply chain systems, enabling seamless coordination and enhanced transparency across the entire stock management workflow.

Data-driven approach to social analysis

We introduced a family survey module to gather important information about families in the community. Anganwadi workers could conduct home visits and capture demographic data, socioeconomic status, and household composition. The module focused on ease of use, with prompts and guidance to ensure accurate data collection. Additionally, the team integrated built-in analytics tools, allowing stakeholders to derive actionable insights from the collected data and tailor interventions to address specific community needs effectively.

Heatmap and trend analysis for improved service delivery

Another unique module that we implemented was a heatmap feature that visualized the operational performance of Anganwadi centers across different regions. By analyzing attendance rates, distribution patterns, and operational efficiency, the platform provided valuable insights into areas for improvement and resource allocation. Additionally, the heatmap feature enabled trend analysis over time, allowing caregivers to identify seasonal variations in service utilization, thereby maximizing the impact of their programs.

Simplifying care coordination

Furthermore, We developed a module to help track referrals between Anganwadi centers and healthcare facilities. Caregivers could easily submit referral requests and track their progress in real-time. Automated notifications kept caregivers informed of any updates or changes to referral statuses, ensuring timely follow-up and coordination of care. The module also provided a centralized repository for referral history, making it easy to track outcomes and identify areas for improvement in the referral process.

Enhancing support systems for all users

Our team optimized the application by reducing payload, latency, and caching time. This improvement ensures seamless experiences for all users, eliminating errors and system downtime. Additionally, we've integrated a new grievance redressal system accessible to both beneficiaries and Anganwadi Workers (AWWs). Beneficiaries can create tickets directly on the web application without logging in, while AWWs can do so via the mobile application. Every stage of ticket escalation is now trackable.

The Impact

The collaboration between Daffodil and DIC led to an upgraded Poshan Tracker, benefiting over 13 lakh registered Anganwadi Centers (AWCs). This modernization ensured that vital health services reached over 90 million beneficiaries, including pregnant women, lactating mothers, and children. The upgraded platform streamlined processes, allowing caregivers to track health data efficiently and provide timely interventions. With enhanced reporting features, officials gained insights into service delivery, aiding informed decision-making. The impact extends beyond numbers, touching lives by fostering healthier communities and ensuring equitable access to healthcare resources.

700+	districts covered
100M+	beneficiaries served
1.3M+	active Anganwadi centers

Services Used

Product Engineering