NSP
Powering Trusted & Connected World

Cross-platform applications development

How NS is reducing development cost by working with Cross-platform applications.

A case study for Cross-Platform applications

Cross-Platform Solutions

Profusion of smartphones has made it essential that applications run seamlessly on multiple platforms such as iOS, Android, and Windows. But native apps for iOS and Android need to be developed and maintained individually and must align the user experience across each platform. The advent of the Cross-Platform framework introduced a development approach that allowed building of applications that are compatible with multiple platforms quickly and cost-efficiently.

Our Scool360, Campus365plus, and ServiceInside - are solutions from the NSP stable that are cloud-native hybrid applications and are available as both web-based and mobile apps.

- **Scool360** and **Campus360plus** – Are complete school management and campus management solutions respectively, designed to enable end-to-end management of educational institutions

- **ServiceInside** – An AI-enabled Field Service Management solution to optimize the delivery of services in the field.

These solutions are developed using the cross-platform framework “Flutter” to enable seamless accessibility of all the features on any platform.

Challenges

Building applications for various platforms in their native development environment posed the following challenges:

- Code maintenance, bugs identification, and support are time-consuming and need serious efforts
- Every new version of the OS needs an application update
- Increased maintenance efforts for each added device
- Development time is long due to the doubling of coding effort
- Requires hiring a bigger team consisting of 1-2 QA engineers, 3 IOS engineers, 3 Android developers, and 2 designers
- Common operational features (navigation between screens) differ from OS to OS which needs to be handled differently.

Complete ERP solution for an educational institution includes a whole gamut of functionalities accessed from a desktop or smartphone. In addition, these applications support many student users on their smartphones with either android or iOS.

Field service management solution supports multiple users on their devices, since they are constantly on the move, and need secure data exchange between the home office, client, and the service engineers.

Hence these solutions needed to be built for multiple platform accessibility.

Solution

To leverage the advantages of the cross-platform development environment, it was employed in the development of these solutions, it offered the following distinct advantages.

Speed of development:

- Developers can create a single set of code for two different platforms, which significantly reduces development time and cost.
- Development is 20 to 50% faster compared to the creation of two native apps.
- Codes are easier to create compared to native codes.
- Sharp learning curve does away with the need to hire experienced profession als

Code Maintenance

- Maintaining a cross-platform app, is much easier since there is just a single codebase for multiple applications.
- Developers can quickly detect issues, support third-party libraries, and source external tools.
- Bug identification and resolution of issues in the application are swift.

Application Development Cost

- The development cost of cross-platform applications is less expensive com pared to native development since a single codebase can be used for multiple platforms
- A small and competent team consisting of 1 QA engineer, 2 Cross-platform app developers, and 1 designer can accomplish the task.

UI/UX Capabilities

- User interface can be optimized for mobile apps and can work with a wide range of devices
- Offers great performance with elegant modern UI designs that seamlessly integrate functionalities across all OS.

Our solutions were designed incorporating:

- A web API was developed using .Net Core or Java support for a multi-plat form deployment that communicates seamlessly between the back end of multiple platforms.
- Google's latest Flutter framework was employed to ensure that the mobile application is compatible with both android and iOS devices.
- User interface that is optimized for mobile apps and capable of working with a wide range of devices was designed using React's front-end framework.
- React-powered web portals were deployed which can be hosted from any web server and is OS independent.

Benefits

- Reduced time and cost of development and maintenance due to the creation of a single set of codes for two different platforms
- Cost-effective solutions at reduced timelines
- Smoother animations and user-friendly interface elements with Flutter de ployment
- Application portal can go live after deployment with just page refreshment greatly reducing on-site development costs.
- Major cross-platform frameworks' drawback of the unpredictable behavior of interface elements and slow animations was overcome.
- Short development cycles supported shorter time to market metrics

Stories

The latest development in technology has confined our lives to digital assets. With the internet and smartphones becoming an important decision-making aid it becomes prudent to make business solutions applications also easily accessible on these devices by leveraging the cross-platform framework for development and deployment.

Applications developed on a cross-platform framework not only reduce development work, time, and the cost they provide high scalability and quality user experience. The agile development environment is one of the major underpinnings of cross-platform development along with ease of bug fixing and modification of a specific portion of the user interface.

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