



SUCCESS STORY.

Hospital Kitchen Menu Management Application Development

About the Client

The client is a Florida-based engineering and services company. It manufactures a portable handheld patented audio system and cloud-based software that has been adapted across various domains, including healthcare.

Business Challenge

Mobile devices are transforming every aspect of the healthcare industry. The intervention of mobile technologies is revolutionizing the industry and unlocking innumerable opportunities for improving efficiency of healthcare delivery and patient satisfaction.

Tapping on the market opportunity, the client wanted to develop an Android-based mobile app for use in hospitals to help inpatients order food that aligns with their dietary requirements. For a hospital setting, specific needs and requirements needed to be met by the application to help inpatients – especially for those who were older, visually impaired, or otherwise disabled. These requirements included:

- Web portal for hospital kitchen menu management, order processing, patient information management, tablet inventory management, service administration and product configuration.
- Easy-to-use mobile app for patients to place meal orders right from their beds using an Android tablet.

- Audio-based alternate version of the mobile app for visually impaired patients.

- Menu display and filtering according to the patient's language preference and suggested diet plan, respectively.

- Polling service to enable daily (or scheduled) self-update of menus on the tablets.

- Admin portal for hospital staff user management, patient diet information management and audit tracking.

Silicus Solution

Silicus successfully designed and developed web portals for the hospital users (dietitians), kitchen staff, food delivery staff and the application administrator; along with two variants of the integrated mobile app for Android tablets. Below are the main highlights of Silicus' solution approach:

Menu Management Web Portal

- Create Menu Sets and Diet Plans – The dietitian can choose food items from various menu categories and define different menu sets according to diet plans like diabetic or low sodium.

- Menu Update Polling Service – Menus are configured to be rotated during a configurable time period and the polling service automatically picks up the latest menu for the day.

Order Processing Kitchen Web Portal

- Menu Scheduling – Kitchen staff can define menu options according to various diet types for the entire week.

- Patient Meal Order Processing – Kitchen staff can view and print meal order lists received from the patients for breakfast, lunch and dinner along with patient locations. Once an order is

delivered, the order status can be updated.

Reporting – Generates report showing statistics of menu sets ranked by popularity.

Android-Based Mobile App

Touchscreen-based Interface – The basic version of the mobile app allows patients to order using the tablet's touchscreen interface. The order is displayed in the patient's preferred language and is filtered according to diet type. A patient can view a list of menu items, as well as review, place and cancel orders.

Audio-based Interface – An alternate, single-screen tablet interface was specifically designed and fitted with uniquely projected buttons for the visually-impaired. The same menu choices are available in audio format in the language of the patient's preference.

Communication Alerts – The tablet continuously sends a status update to the server to indicate that it is in working condition. Tablet inactivity can be traced by the communication status logs.

Technologies Used



LANGUAGES

Java (JDK1.6)



DATABASE

MySQL 5.1



MOBILE PLATFORM

Android



OPERATING SYSTEM

Linux (Ubuntu), Windows 7



WEB TECHNOLOGIES

J2EE (Servlet, JSP), HTML, JQuery, JavaScript



WEB SERVER

Apache Tomcat



WEB SERVICE

Apache CXF



FRAMEWORK

Spring (3.1.0), Hibernate (3.6.1), Struts 2



DEVELOPMENT

ENVIRONMENT

NetBeans 7.2 (for web portal), Eclipse-classic 3.6.2 (for android app)



BUILDS & RELEASE

Hudson, Apache Ant

Client Benefits

BETTER PATIENT CARE THROUGH MHEALTH TECHNOLOGY

mHealth, if exploited to its true potential can challenge the horizons of patient care. Some tasks which look quite ordinary may be extremely challenging for some patients, especially ones suffering from disabilities. This mHealth solution helps inpatients as follows:

- Patients can easily find the food they want and place an order with just a few clicks; eliminating the difficulty of going through complex menus to find appropriate food items
- Patients can order at their convenience, irrespective of location and time
- Visually impaired patients can listen to the menu options and place orders using the enhanced audio interface

BETTER ORDER MANAGEMENT THROUGH AN EASY-TO USE, INTUITIVE INTERFACE

The online interface to view and process queued orders ensures fewer mistakes in catering to specific diets. Kitchen staff can stay focused on food preparation since they do not need to manage and reference individual orders, patient diet types and patient locations.

UNIQUE FEATURES FOR RELIABILITY & PATIENT ADAPTABILITY

- Language Support – Multiple language text and audio support
- Tablet Tracking – Communication status alerts to keep track of tablet activity
- Unique Interface – Uniquely projected single-screen interface for the visually impaired

ROBUST MOBILE APPLICATION

The app has been tested across various Android versions in the Silicus Mobile Device Lab – a mobile center of excellence using leading devices and tools with highly trained and qualified experts.

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