Radiology Mobile Contact List Application

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Background

Being a large radiology department in a teaching hospital, effective communication is essential to smooth and efficient operation. With many physical locations as well as a large number of staff it can be difficult to remember the various phone, mobile and fax numbers required to perform our daily tasks. In the past this was dealt with by using printed phone lists containing important contact information. This has proven difficult to manage for a number of reasons, including, 1) personnel frequently change, causing the list to be out of date quickly; 2) contact details frequently change; and 3) it is difficult to distribute a frequently changing list.

In this presentation we will describe a mobile software application we have developed which is specifically designed to distribute contact information for various personnel and locations throughout our radiology department.

Evaluation

The informatics team software development group created a mobile radiology contact application based on requirements provided by informatics leadership. The basic requirements were, 1) the application should work on both Android (Google, Inc., Mountain View, CA) and iOS (Apple Inc., Cupertino, CA) mobile operating systems; 2) users should be able to access the radiology contacts without logging in or using the corporate virtual private network (VPN); 3) both people and location contact information should be available; 4) contacts should be easily searchable; 4) It should be easy for users to initiate a phone call or email directly from the application. Informatics leadership felt it was important that both persons and locations be included in the list of contacts. This would allow users to quickly look up modality scanner control rooms, reading rooms, and registration desks, and other important locations.

 Based on the requirements, the application was developed using the following technologies, 1) Microsoft ASP.NET v4; 2) Microsoft SQL Server v2012; 3) JQuery Mobile; 4) HTML5; and 5) CSS3. This combination of technologies allows the application to be used on multiple types of mobile devices including phones and tablets. The use of mobile desktop shortcuts makes the application virtually indistinguishable from a native mobile application. In addition, applications developed using these technologies have the added benefit of being accessible via a desktop web browser. A separate web-based user interface was also created which allows an administrator to easily add or delete contacts or update contact details.
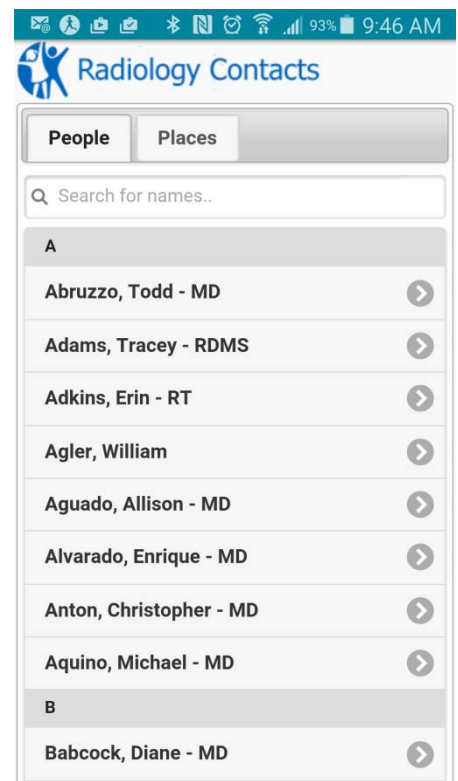
The application is hosted on a server with direct internet access which allows users to access it without logging in directly or using the corporate VPN. Security is provided via a pass-phrase that the user must enter periodically. Once correctly entered by the user, the pass-phrase is cached on the mobile device and the user need not enter it again until radiology informatics personnel change it. This level of security was deemed sufficient while not being so obtrusive to the user to cause them to not use the application.

Discussion

The application was deployed with a database containing 150 person contacts and 87 location contacts. Users can easily search for persons or locations based on their name and/or title and can easily initiate a phone call or email right from the contact details page. Initial pilot testing of the application was performed by a small group consisting of radiology leadership as well as informatics team support personnel. Minor changes to the application were made based on pilot test feedback. Based on the success of the initial pilot, a phased roll out of the application has begun with the eventual goal of deploying it department-wide. In the second phase roll out, the application was made available to all radiologists within the department. All of the users will again be surveyed as to the usefulness and usability of the application. Analytics gathered over a four week period after the second phase roll out show that the application was used more than 300 times.

Future planned enhancements to the application include, 1) the ability for users to modify their own contact information; 2) the ability for users to create a list of "favorite" contacts; 3) the ability to export the list of contacts in Microsoft Excel format.

Conclusion

The development of an easy to use, mobile radiology contact application has produced a flexible, efficient method for distributing our radiology department contact details. Initial usage statistics of the solution indicate that users find it useful and are embracing this new method for deploying the contact list.

Modern mobile technologies can be used to provide radiology department personnel with up-to-date, important contact information allowing them to be more efficient in their communications.

Keywords

Mobile Software Development