GeoReal: Location-based Services for Real Estate Agents in Florida

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Extended Abstract

We present initial investigation and requirements analysis results on Geo-Real, a location-based mobile app for real estate agents in Florida. The app will support real estate agents on-site, e.g. during showings, and while traveling. Through this project we explore new location-based services for realtors, and, eventually, for other traveling sales personnel. We will also explore how complex geo-tagged and location based data is optimally presented in a user-friendly mobile interface.

The GeoReal mobile app will be based on TerraFly, an online geospatial big-data analysis and visualization system developed by Florida International University's High Performance Database Research Center (http://hpdrc.fiu.edu/). The TerraFly system serves worldwide web map requests providing users with customized aerial photography, satellite imagery, and various overlays, such as street names, restaurants, services, and demographic data (Rishe et al. 2005, Zhang et al. 2015). Available spatial data sources in TerraFly include demographic census, real estate, disaster, hydrology, retail, crime, and disease related data.

Real estate agents are licensed experts who provide services associated with the purchase and sale of properties on a commission basis (Barwick & Pathak 2015). They usually have a greater knowledge concerning property transactions than their clients, either through access to a localized Multiple Listing Service (MLS) and, naturally, through their day to day business experiences (Johnson et al. 2015). They are typically involved in advertising property, suggesting listing prices, conducting open houses, and negotiating with buyers (Barwick & Pathak 2015). Current marketing strategies include MLS Virtual Tours, and MLS Photographs (Allen et al. 2015). Augmented Reality is also discussed as a service that can be of value to real estate agents when showing a property to a client (Paredes 2014). Additionally to MLS services, many real estate agents already use a range of mobile apps

and web services, e.g. specific real-estate related websites and apps (e.g. Zillow, RPR mobile), routing and neighborhood exploration tools (Google Maps), recording and video streaming apps (e.g. BombBomb, Periscope, or Hyperlapse), floor plan assistants (Roomscan), and general document management tools (Sign Easy, DropBox).

In our research we apply a user-centered design approach with three iterative stages as described in Rogers et al. (2015). First, we conduct in-depth interviews with realtors in Florida to gather user requirements and user needs. Second, we create an interactive prototype running on mobile devices, and third, we test the prototype with realtors. The in-depth interviews were conducted to gain insight about the specific user needs of real estate agents. During the interviews we requested the agents to elaborate on a number of topics, including: desired mobile support for the planning and conducting of showings and follow-ups with clients; information needed to present to different groups of clients during showings; day-to-day work-related usage of mobile phones, apps, and websites; and current trends, desired improvements, and problems when out in the field.

Within the first interviews some initial user needs were identified:

- When a client wants to view a property, the real estate agent needs routing and parking information, and information on how to enter to the property. Often, doors can be opened with an e-key via the smartphone.

- If the property is part of a condominium building or estate, information about the whole site and common property is often missing during showings. The information needed includes e.g. the location of and access to swimming pools, gyms, basements, or garbage cans.

- During showings, there is often the need to reschedule subsequent meetings, (re-)plan tours, and to inform associated colleagues about any schedule changes.

- A relevant number of customers buy property without actually visiting the estate. Virtual showings with video streaming for clients that are not present during showings are thus another important need.

- Information about the neighborhood is mostly gathered by the clients themselves (either locally or via the internet). Due to the US Federal Fair Housing Laws real estate agents cannot discuss neighborhood demographics that could indicate discrimination.

- Information about the property itself, a condominium building's common property, and the neighborhood clearly has to be tailored for different demographic groups: age, number of children, pets, professional occupation, and other characteristics will result in different information needs.

- Keeping in touch with their network of colleagues, business partners and other acquaintances is very important for real estate agents, be-

cause anybody in the network might sooner or later buy or sell a house. The smartphone's versatile communication applications are already central tools for keeping in contact with acquaintances and scanning updates in their timelines.

- Statistics about the prices of sold and currently advertised houses in the area are important information that is currently not available in aggregated form. Matching property recently sold and on sale based on certain criteria could help real estate agents to more easily estimate an realistic price for the current object on sale, and help to match buyers and sellers based on financial information.

Our research is still in the first phase of requirements gathering and analysis. The analysis of the first interviews already shows user needs for innovative location based services. We will evaluate the current findings and identify more user needs by conducting more interviews. Based on the final results we will then design the location-based mobile interface, and evaluate it in a further step.

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