VisualPharma Windows Phone App

Interaction, features and characteristics

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Introduction: The VisualPharma App for Windows Phone 8

- VisualPharma is an App aimed to help patients better understand pharmaceutical drugs, mainly focused on people with accessibility problems reading or understanding the drug prospects.
  - The main benefit will be the increased security when taking pharmaceutical drugs.
- The patient can just enter the drug name or just use the smartphone camera to let the App recognize it from its box.
  - Great level of recognition accuracy due to the legal mandate to use readable fonts, with big size over clear background for pharmaceutical products.
- It will make use of Windows Phone 8 speech interfaces (both TTS and ASR) and videos for avoiding reading text on the screen if needed.
  - The videos are a key feature for improving the comprehension of the drug administration and its proper dosage.
- Will have additional helper features, based on key Windows Phone 8 characteristics:
  - Location of the nearest drug store (location services with Bing or Here maps).
  - Drug administration reminder (notification center).
  - Etc.

VisualPharma: Typical sequence for typical usage

1. First, the drug must be identified, so the user can:
   - Directly enter the drug name (typing or using the speech interface).
   - Aim the smartphone camera to the drug box and let the App automatically recognize it.
2. Once it is identified, the App presents the information to the user.
   - He can navigate through it by using the touch screen or the speech features.
   - The user also be able to select different languages
     - Important on countries like Spain, where there are several official languages besides Spanish, but that aren't usually used for pharmaceutical products.
   - The info will be fully multimedia (speech, videos, images, text, etc.).
   - All the information will be retrieved from cloud-based databases.
     - Always updated information.
     - Smaller App size.

1.- Take a snapshot of the drug box with the smartphone camera

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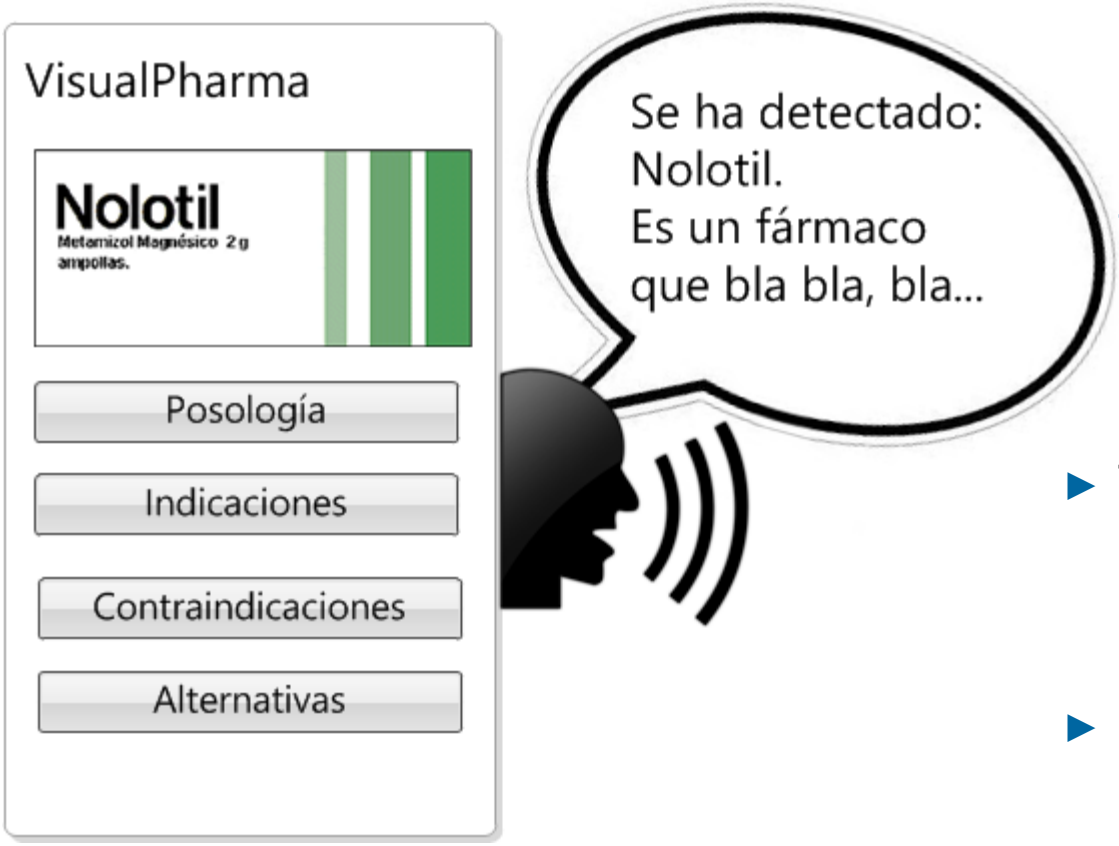
- A cloud-based OCR is used to recognize the pharmaceutical product.
  - Simple image filters can be automatically applied to increase OCR accuracy.
    - Mainly a perspective correction.
  - Very high OCR accuracy is guaranteed due to the legal mandate of using readable fonts with clear background for pharmaceutical product labeling.
  - Detected OCR texts are matched against a cloud database:
    - Product name, brand, etc.
  - Barcodes are not used, since on many countries they are removed for legal purposes (to attach them to the prescription).
- The smartphone continuously takes snapshots until the products is clearly identified.
  - The uses doesn't need to make several photos until getting a good one, just aim the smartphone to the box and wait for an audio signal (a sound followed by a speech like "product captured").

2.- With the recognized product, the App presents the data to the user



- Once the product is recognized, the user can use touch and/or speech interfaces.
  - Targeted to users that cannot read, neither the small fonts of the drug pamphlet not text on a small smartphone screen.
- The App will show / read data about the drug, retrieving it from the cloud database.
- Images and videos will also be used to improve comprehension.

3.- A (bidirectional) speech user interface can be used anytime

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- The touch interfaces may not be the best for the elder or for people with disabilities, so the user can "talk" to the App and the App will talk to the user.
  - Will use the Windows Phone Speech capabilities, but also can use cloud services or download pre-recorded locutions.
  - Can be disabled if the user wants so.

What kind of content and information the App will provide?

- Drug metadata (encyclopedic information).
- The drug prospect, with several improvements over printed text:
  - Translation to several languages.
  - Speech.
  - Increased font size for accessibility.
- Videos:
  - Mainly about the drug administration (by instance, there are some inhalers that are difficult to use).
- Multimedia advertisement:
  - Promotions, campaigns, etc.
- Links to patients associations, to related Webs, etc.
  - To be opened on the device's Web browser.
- By-phone-call to the pharmaceutical company call center for customer support.

App. additional features

- Medication Reminder, fully programmable by the user, where he can add snapshots (of the box, of the pills or capsules, etc.) for helping avoiding mistakes.
  - Will make use of Windows Phone notifications service.
- Drug store location
  - Use of cartography (Bing maps or Here maps) and Windows Phone location services to find the nearest drug store.
    - Plan pedestrian or by-car routes.
  - Use of an cloud-based drug store database.

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