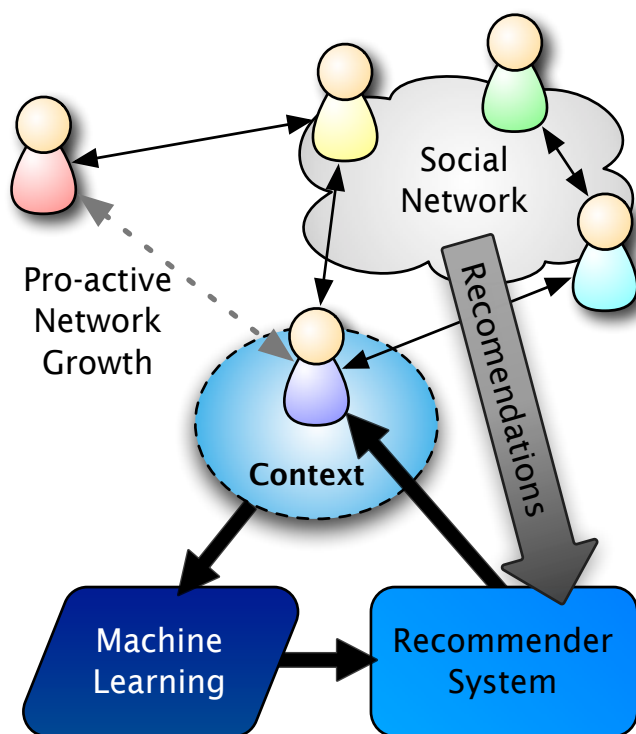


## Instant Knowledge: Nodobo Capture Brief

### IK Concept

Instant Knowledge enhances the value of any organisation's most important asset—the information held by its employees. Rather than requiring staff to fill out skills profiles, which are very general, become outdated, and require significant effort, IK uses an application on employees' smart phones and laptops to gather information on what they are doing and who they are communicating with. This context is used to build dynamic skills profiles along with a social network map for the enterprise, which provides a resource to proactively offer recommendations to participants. Using IK, staff can always find the best person for the job.



*IK Concept: It's not what you know, it's who you know, and who they know...*

### Nodobo Capture Concept

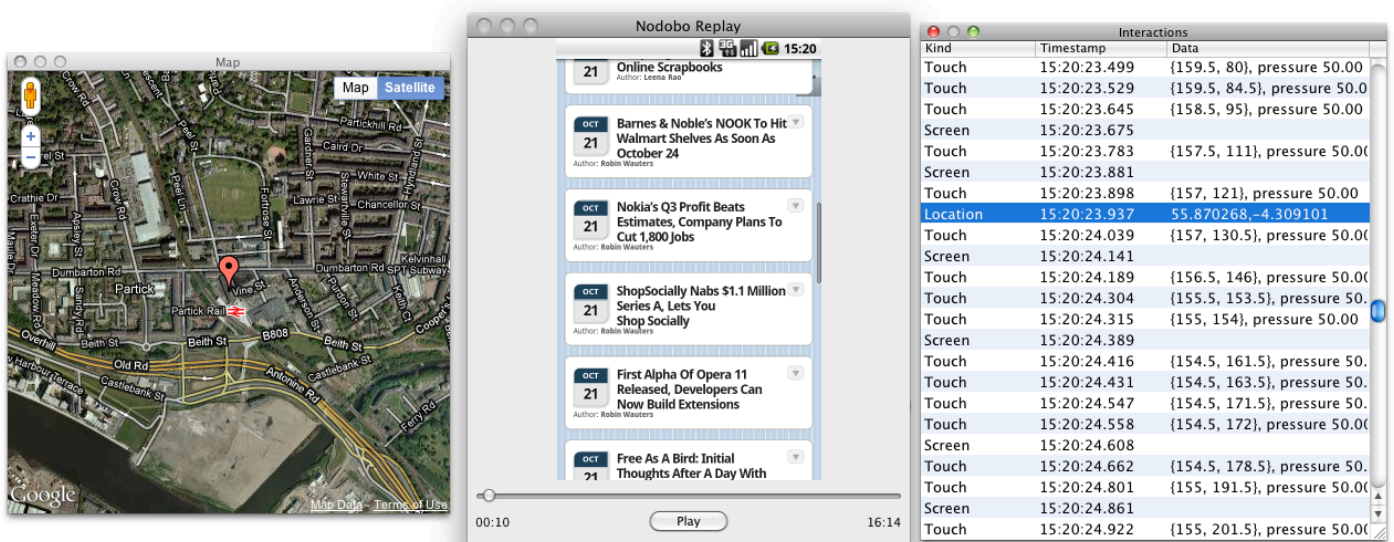
Nodobo Capture is a tool for recording interaction sessions on mobile devices. Software running on the device records a user's interactions, the screen state before and after these interactions, and context information gathered from available sensors. The gathered data can then be synchronised to a PC to be analysed in a complementary playback application, Nodobo Replay.

Usability testing is an important aspect of user interface research and development. It can be used to verify a proposed new interaction method, evaluate an individual application or test the quality of a near-market device as a whole.

### Novelty & Contribution

Nodobo Capture is a new approach to usability testing of mobile devices. Rather than relying on traditional methods such as laboratory testing, user-recorded interactions, and third-party monitoring, Nodobo Capture uses the device itself to record its usage removing the requirement for field observation by either examiners or user-attached observation devices.

Handheld devices are becoming more powerful, with increased processing power, memory, and mass storage capacity. This technological progress allows software running behind-the-scenes to record a user's interactions as well as additional context information. Modern devices are rich with context sensors, including GPS receivers, tri-axis accelerometers, and ambient light-level readers. These sensor readings, along with other software sensors, allow researchers to recreate the user's actual conditions.



Complementary Nodobo Replay application for PC showing user location, screen content, and environmental context.

## Application Scenarios

Nodobo Capture can be used to perform observation studies. Interaction sessions are recorded with the device before being synchronised with a PC for replay with Nodobo Replay.

## Demonstration Results

Nodobo Capture has successfully been deployed to a Google Nexus One running the Android operating system. The captured data can be synchronised with a PC, and played back in the Nodobo Replay application, which enables the usability examiner to view the recorded sessions.

Currently, generated location data is combined with Google Maps to provide a map showing where the user travelled. Orientation clues are used to change the orientation of the screen display in Nodobo Replay, and the timestamped user interactions are shown in a separate window. Interactions with the touch screen are visualised by compositing a transparent pink circle onto the screen images.

Discussion with usability engineers has led to a list of features that will be implemented in later versions: being able to filter the interactions based on a particular context, or application, the ability to flag points in the captured sessions for later, and the ability to compare two recorded sessions.

## Conclusions

Nodobo Capture is a tool for recording user interaction sessions and their context. It can be used to gather data for use in mobile device usability evaluation studies, removing the potential for observation interference in traditional in-the-field methods. The capture system runs independently of the higher-layer software, and so works with all applications without modifications.

The capture system gathers user interaction data and screen contents around the interactions. This data is augmented with context data gathered from various device sensors. This allows an accurate reproduction of the user interaction session to be played back on a computer with a complementary software application for PC, Nodobo Replay. Nodobo replay shows the screen content of the device as well as user location and environmental context.

## Further Information

Videos and Technical Reports for all of the Instant Knowledge research outcomes are available to members on the Mobile VCE web site. For non-members the Instant Knowledge overview sheet is available at:

[www.mobilevce.com/infosheets/InstantKnowledge.pdf](http://www.mobilevce.com/infosheets/InstantKnowledge.pdf)

For further information and to register for information about future MVCE IK events please email Jerry Horton: [jerry.horton@mobilevce.com](mailto:jerry.horton@mobilevce.com)