

Mobile GIS: Case Study for Lincoln Heritage Gateway

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exeGesIS Spatial Data Management

Context: Lincolnshire Heritage

- exeGesIS working on “HER21” project for:
 - Lincolnshire County Council Historic Environment Record
 - 7 District Councils
 - English Heritage
 - Institute of Historic Building Conservation
- Aim: to improve the management and use of the historic environment of Lincolnshire, in line with PPS5 and HPR

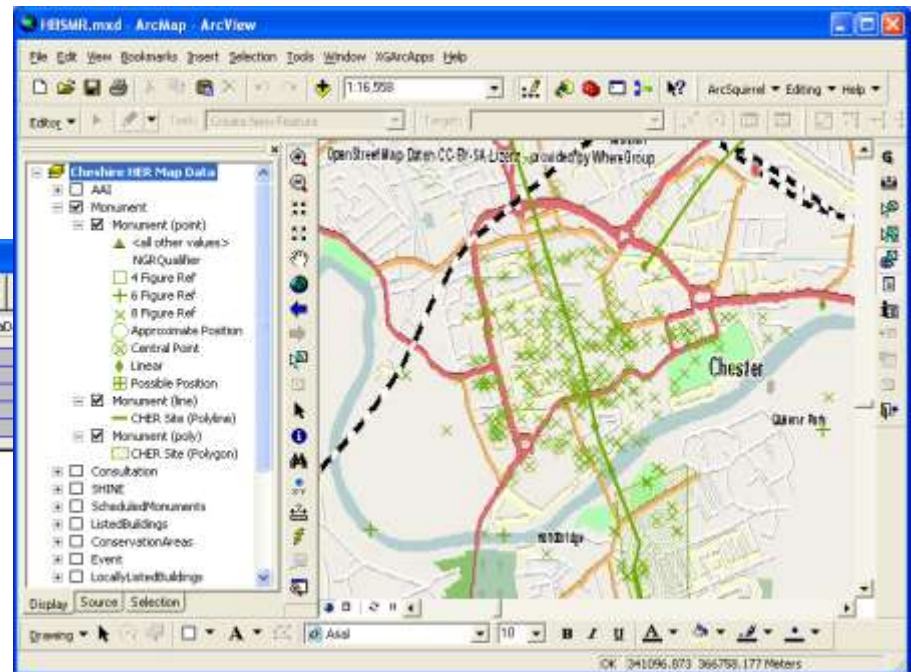
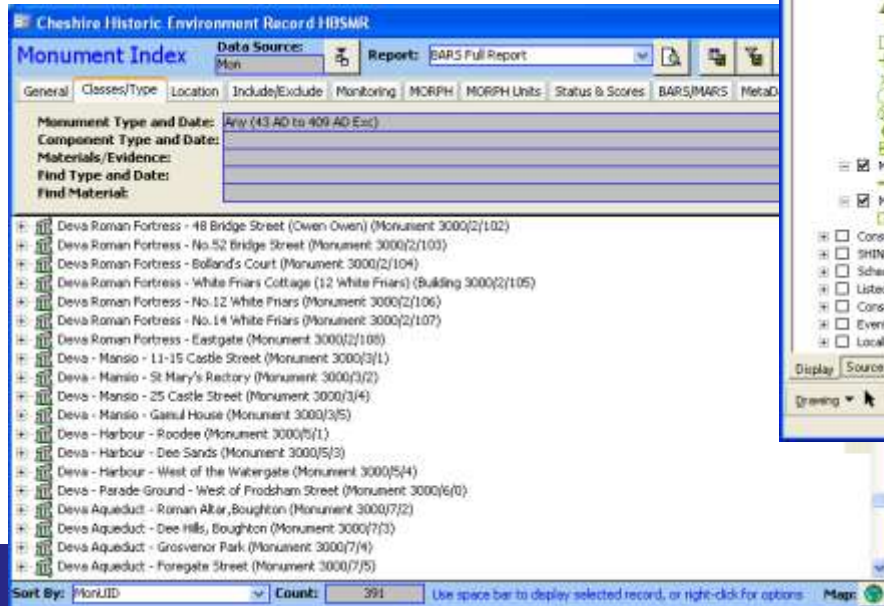


Lincolnshire HER21 - Aims

- Problems:
 - Disjointed service delivery
 - New information being lost
 - No shared information base: “Historic Environment Record” at LCC; local datasets for Listed Buildings etc at the Districts
- HER21 deliverable = map-based web site for Conservation and Planning Staff, giving full access and feedback

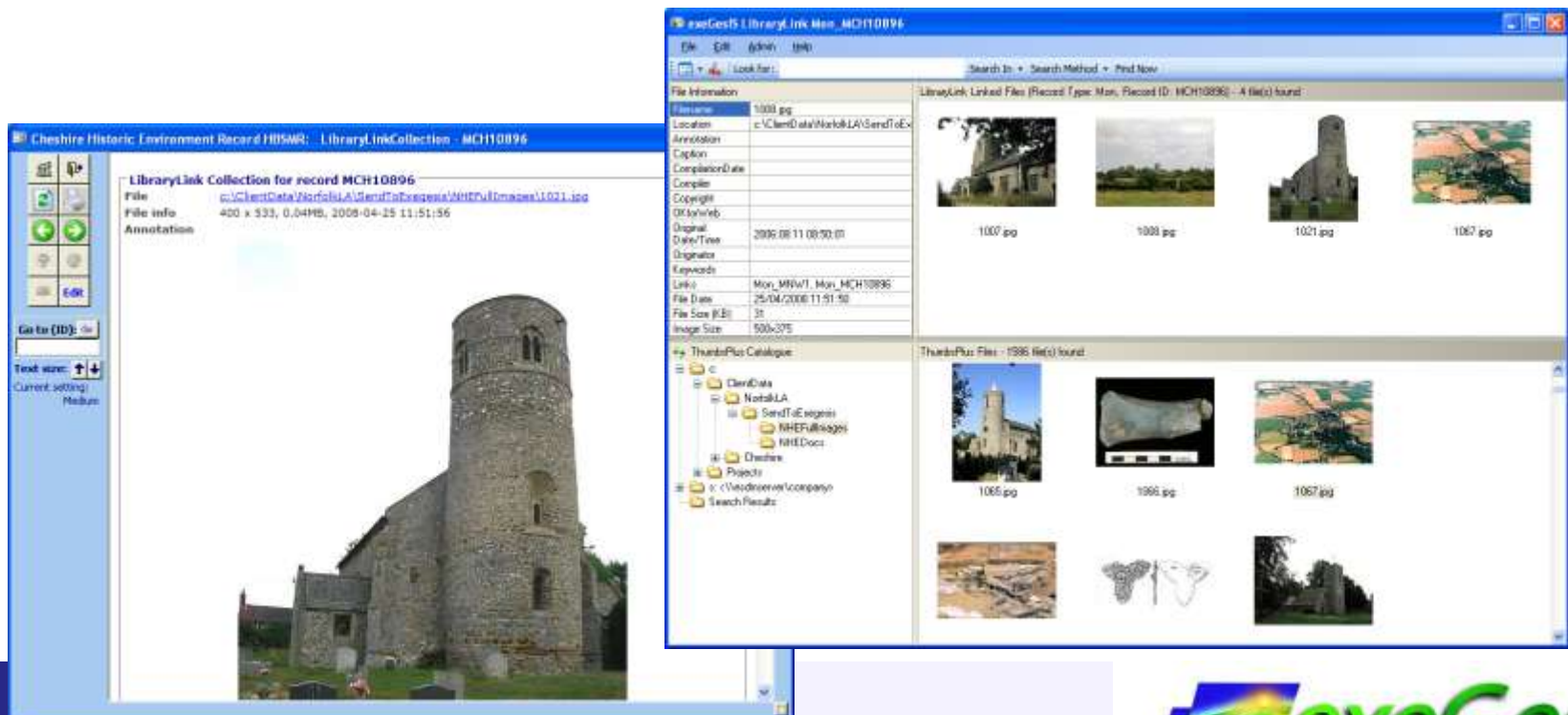
HBSMR sample screens

- Roman sites in Chester on OSM (2 clicks)



HBSMR sample screens - LibraryLink

- LibraryLink for documents and multi-media



HBSMR web interfaces

- Simple web publication, e.g. Kent, Cheshire, Highland, Buckinghamshire,



Lincolnshire HER21 - Feedback

Images and documents (2)

Details

Resource ID:

Caption:

Originator:

Date/time:

Copyright:

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Date/time:

Copyright:

Site type and period

- BURIAL (Medieval - 1066 AD to 1539 AD)
- CATHEDRAL (Medieval - 1066 AD to 1539 AD)

Designation(s)

DL10557 Conservation Area 36: Lincoln No 1 Conservation Area - Cathedral and City Centre

DL5431 Listed Building (I) 486141: CATHEDRAL CHURCH OF ST MARY AND CLOISTERS AND CHAPTER HOUSE AND LIBRARIES

Full description

PRN 70012

The cathedral is essentially of three periods, two of them divided into two phases each. The first is the Norman west front. The original cathedral was built by Bishop Remigius starting sometime between 1072 and 1075, and consecrated in 1092. It was enlarged by Bishop Alexander. The second phase is Early English from 1192 to 1250, and 1256 and about 1300, by Bishop St Hugh and his successors. The final medieval building phase was carried out in the 14th and 15th centuries. [1]

Archaeological investigations were carried out during installation of electricity cables. Inside the cathedral trenches were dug in the north transept, the nave, St Anne's chapel and the cloister. Structural remains associated with the Romanesque church were identified, including a stone slab floor. There was also

Show on map

Leave Feedback

Date of site visit: No date specified Clear Date

Feedback:

Mo	Tu	We	Th	Fr	Sa	Su
20	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Attach files (maximum 10 files) upload files larger than 5MB

To add one or more files (e.g. a photo of the site) please click the "Browse" button to locate the file on your computer. Enter a description of the file and click the "Add File" button to upload the file.

Select file:

Description of image/document:

Is file confidential: ☐

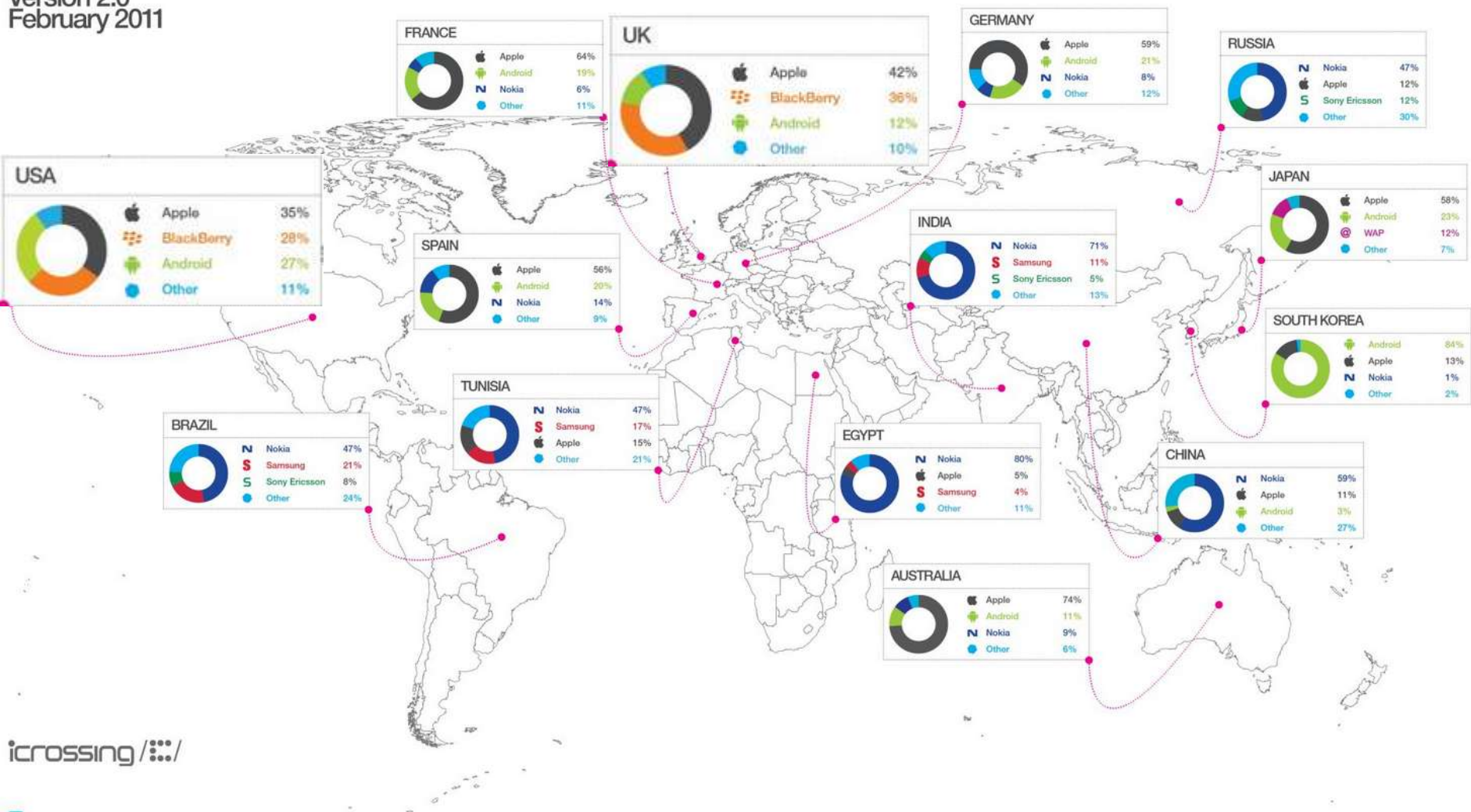
Lincolnshire HER21 – Mobile?

- Limitations?
 - Conservation staff want information *with them in the field*
 - Lots of *new information* is collected during site visits to Listed Buildings
 - Lots of historic environment features remain unrecorded (e.g. milestones, K6 phone boxes, etc) = *ad hoc survey requirement*



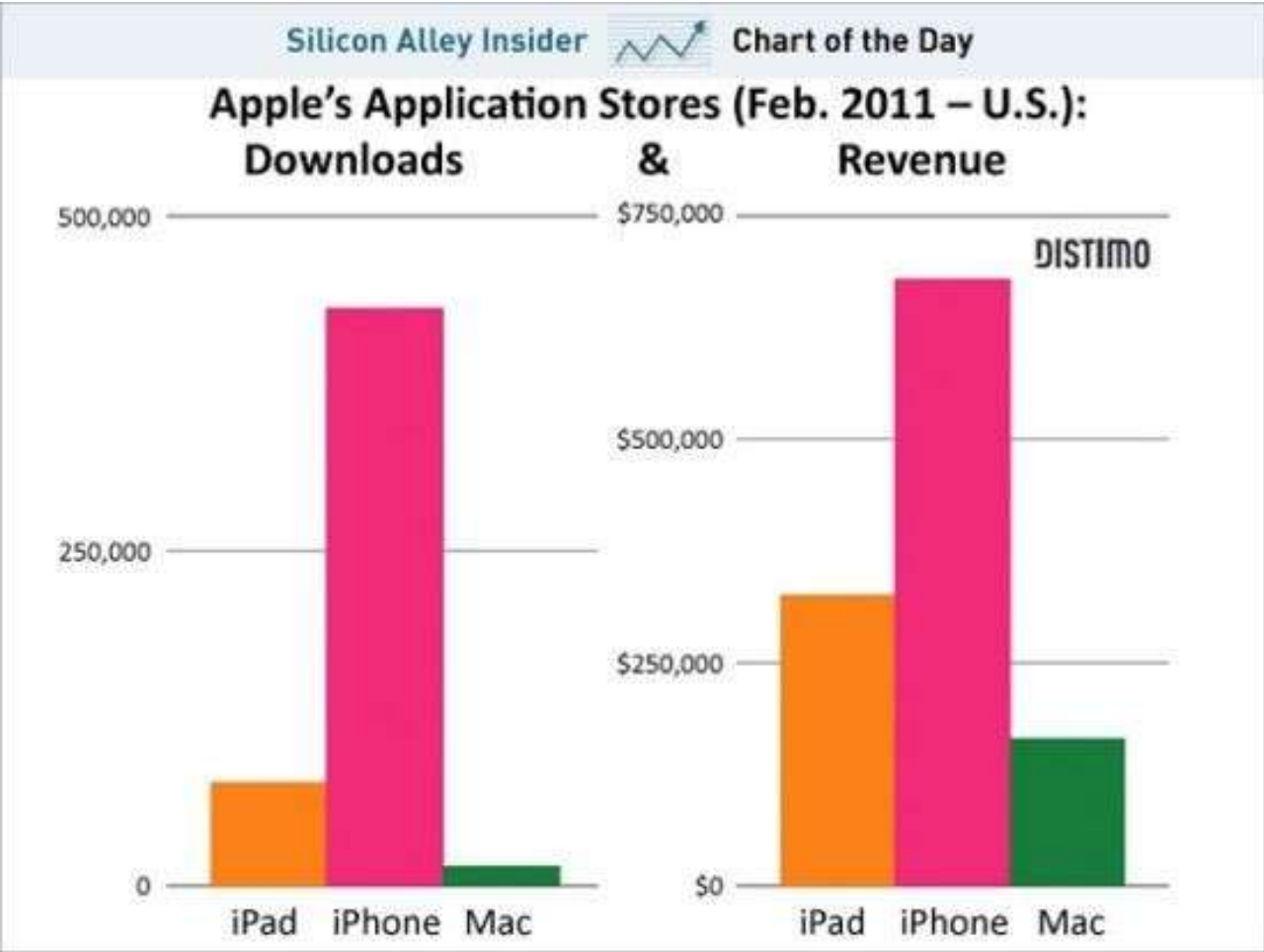
MOBILE OPERATING SYSTEM MARKET SHARE

Version 2.0
February 2011



icrossing /

Data Source: <http://gs.statcounter.com/>
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Ref: phbeta.com

Native or Non-Native?

Stability **Multiple Codebases**
App Store 'Frontage'

Functionality
Developer Skills Technical Roadmap

Available APIs **Vendor Lockin**

Performance
Cross-Platform

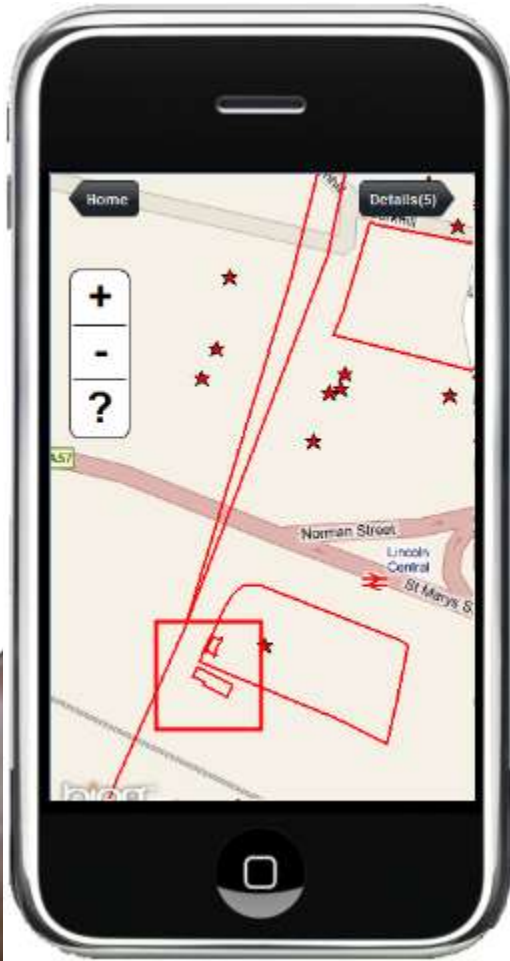
Third option: Hybrid? (e.g. PhoneGap, Airplay SDK)

Technical Solution

- Architecture
 - SOA, non-native, HTML5, CSS and JS
- Framework
 - Dojo Mobile, ESRI JS API
- Delivery
 - Rapid prototyping with client
- Testing
 - Restricted, emulators, limited devices



- Started with a simple map
- Tested various API's
 - OpenLayers 2.3
 - ESRI JS API 2.1
 - TouchMapsLite
 - Google Maps API
- Various testing environments
 - On-device, emulator, browser

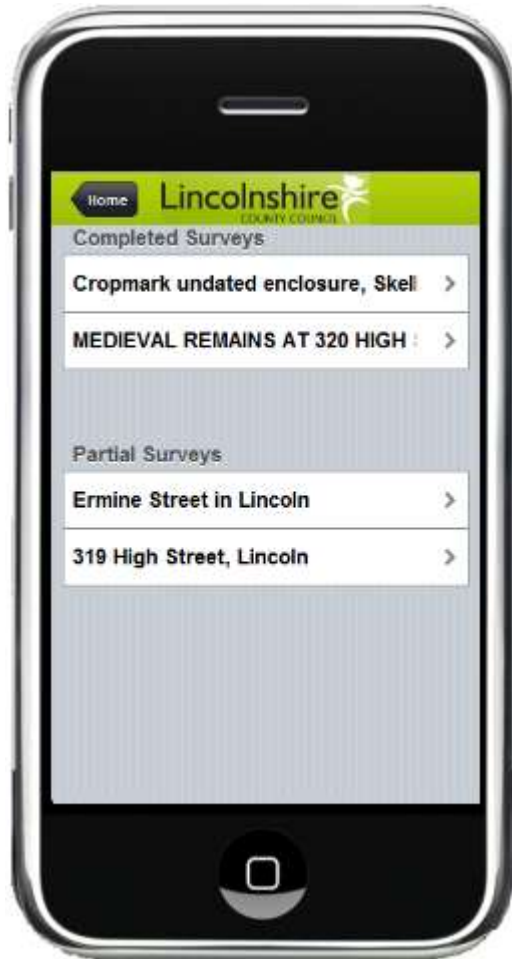


- UI considerations
 - Map navigation
 - Pinch zoom/performance
 - ‘Identify’ results
 - Feedback to the user
 - Follow standards (Google?)
- Consume existing services





- Standard methods for data entry
 - checkboxes, free text, etc
- Ability to add photos and comments
- Metadata also auto-captured
 - Username, Date, etc
 - Geo-tag photos



Advanced Functions

- Offline app storage (HTML5) ✓
- Photo upload ✓₂
- Cache data locally ✓
- Cache map tiles locally ?
- Redlining ✗



Technical Lessons Learnt

- Non-native solution has major benefits
- Choose your framework carefully
- Be aware of connectivity
- Explicitly plan your test strategy
- Pay particular attention to the UI

Design for rapid development

Lincolnshire HER21 - Outcome



- The client loved our idea and demonstrator!
- Quickly added into HER21 contract
- Application now in final build & testing
- Future?