

Mobilising London Journey Planning

Conceptual Designs for Transport for London's Mobile Journey Planner

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White Paper



Human Factors
International

“Navigating London with a mobile phone should be easier than with a paper map.”



White Paper: Mobilising London Journey Planning

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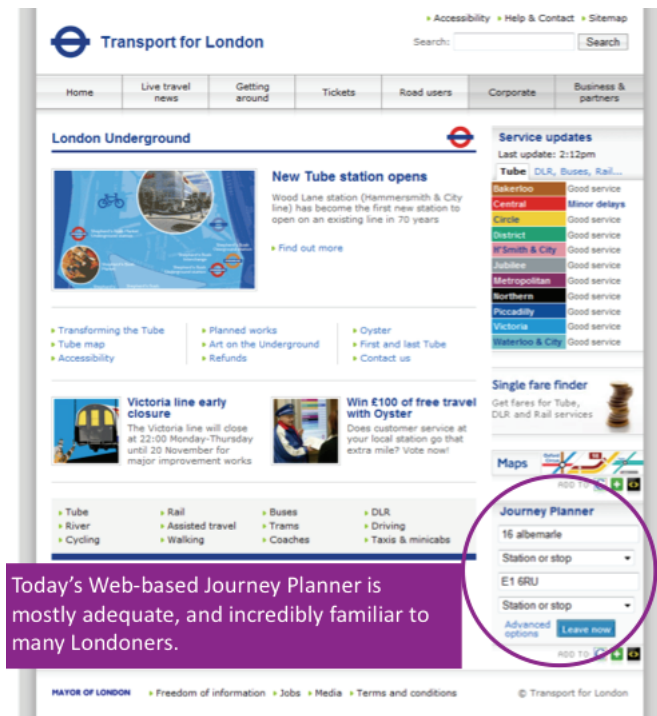
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What is it like today?

Transport for London (TfL) is the local government agency responsible for most aspects of the transport system in Greater London in England.¹ The transportation network managed by TfL is vast and complex, covering the London Underground, London Rail, and various forms of surface transport, including the infamous Congestion Charge, and even walking!

The Journey Planner is a handy tool available from TfL's web site, at <http://tfl.gov.uk/jourenyplanner>. It is a well-designed and helpful means for way-finding in Greater London. One enters his or her origin and destination, by address, landmark, or post code, and the tool engages the user in a dialogue to find the best route.



The Journey Planner, however, is only available from a desktop Web browser. Users on the go can use TfL's WAP services, from which a mobile version of the Journey Planner is available from tflwap.gov.uk. WAP is the Wireless Application Protocol, the technology transport mechanism for mobile services—not a language or anything users need to worry about.

The existing mobile Journey Planner has usability and branding challenges, so we decided to have a go at a re-think.

Strategy before design

The first step in a successful redesign project is to step back and develop *personas* and *scenarios*. A persona is a concrete “characterisation” of a single user group, a synthesis of information about users, such as:

- › User
- › Task
- › Environment

HFI has already followed this road map to successful implementations at major financial and technology enterprises. Our top-down framework captures and aligns executive stakeholder vision to clarify your direction, and then works with customers, employees and other users to give it concrete, actionable form.

There are a variety of personas we could have developed for the mobile Journey Planner, but we focused on Lori:

Lori, 24 years old, works for an advertising firm in Soho as an ad copywriter for television ads. She stays in touch with dozens of friends from school and work via text messaging from her late-model feature phone. Lori frequently travels throughout Greater London to help out on location, as copy changes frequently during filming. When outside work, she meets her friends for meals and at the pub, and goes clubbing at the weekends.

From this persona, we can infer some things about Lori. She’s young, has a hip job, is very social, and is always on the go. From here, we need to design a scenario, from Lori’s perspective.

A scenario is a user story, describing a persona’s situation and goals:

Mid-day, while Lori was on location on Brick Lane in Shoreditch, East London, she got a text from Gina, her best mate. Gina invited Lori to join a group going for drinks at a nice pub near Westway in West London. Her text said: “Meet 4 drinks at 7 at pub near westway just 2 left of lat rd tube?”

Lori accessed the Journey Planner from her phone to get directions, and texted Gina back, “Sure!”

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By creating a set of user stories, we embark on design from a more personal, interesting, and familiar origin. In this case, we want to help Lori out, enabling her to spend time with her mates, rather than fiddling with quirky technology.

Mobilisation, not miniaturisation

The existing mobile Journey Planner miniaturises the TfL Journey Planner: it dumbs down the user interface, requiring additional steps and removing helpful features. It loses the attractive branding of Transport for London's desktop Web site, resulting in an ugly, painful user experience.

Today's TfL WAP Design



When we looked at the existing mobile Journey Planner, we arrived at several conclusions:

- 1 It focuses on the content and business of TfL without thinking about fundamental user needs: way finding in Greater London.
- 2 The mobile Journey Planner requires more steps than on the desktop version.
- 3 Iconography, layout, and graphical treatments were so basic as to appear dated and unattractive.

Instead of tweaking the mobile version, we started from our personas and scenarios, leveraging the strengths of the desktop site.

Designing from the user's perspective

We started by prioritising the Journey Planner, which we felt to be the most sought-after feature on the mobile site. We made it the first thing that pops onto the screen, followed by a menu containing the Tube Map, Departure Boards, and Bus Journeys. We trailed the page with live status of the Tube lines.



We focused on what information was of import to mobile journey planners, and how to best present it visually—and with familiarity with the desktop Web site.

Most mobile user interfaces start or end with a menu, but we placed ours in the centre of the page. Scrollbars on mobile user interfaces are thin and subtle, and so are easily missed, so everything that requires scrolling (typically described as *below the fold*), is meant to be optional information, or additional detail beyond the topmost, highest-priority content. In this way, the user interface *rewards the user* when he or she scrolls down the page.

For the route options page, we stood back from the desktop Web design and identified repetitive user interface elements and discussed features we could remove:

- › The View buttons and adjacent check boxes flowed down the page in a numbing, repetitive visual.

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- › Eight options for departure times seemed excessive *for a mobile site*.
- › “Earliest” and “Latest” buttons seemed superfluous in a mobilised version—“Earlier” and “Later” by themselves would accomplish the same thing, and our design objective was *immediacy* rather than advanced planning.

Journey Planner 1 2 3

Choose your route/s from the options below

English Go

edit search options new journey

Journey Summary

Departing: Saturday 31 January 2009 at: 19:50
From: W1S 4HW
To: TW3 1NQ
Restrictions:

Route	Depart	Arrive	Duration	Interchanges	
1	19:47	20:47	01:00	London Underground, London Underground	View <input checked="" type="checkbox"/>
2	19:47	20:48	01:01	London Underground, London Underground	View <input checked="" type="checkbox"/>
3	19:50	20:57	01:07	London Underground, London Underground	View <input checked="" type="checkbox"/>
4	19:50	20:53	01:03	London Underground, London Underground	View <input checked="" type="checkbox"/>
5	19:57	21:06	01:09	London Underground, London Underground	View <input checked="" type="checkbox"/>
6	19:57	20:58	01:01	London Underground, London Underground	View <input checked="" type="checkbox"/>
7	20:00	21:02	01:02	London Underground, London Underground	View <input checked="" type="checkbox"/>
8	20:00	21:03	01:03	London Underground, London Underground	View <input checked="" type="checkbox"/>

earliest earlier later latest View selected

We took the existing desktop Web design and reduced it to its essence, after which we laid it out in a format that suited mobile phone rendering

From W1S 4HW to TW3 1NQ

	Dep	Arr	Dur
1.	19:47	20:47	01:00
	London Underground, London Underground		
2.	19:47	20:48	01:01
	London Underground, London Underground		
3.	19:50	20:57	01:07
	London Underground, London Underground		

earlier later

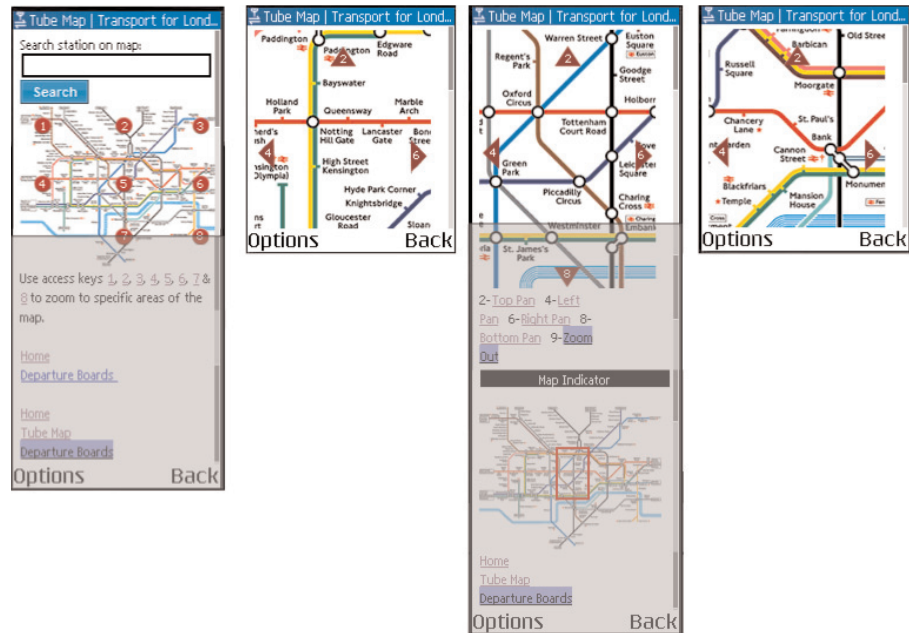
Menu keys are a feature of mobile web scripting that enables the digits on the phone keypad as menu accelerators. This feature obviated the need for the “View” buttons. The check boxes were related to the “View Selected” button at the bottom of the page, affording a set of journey comparisons—which would not be effective on a small screen. So we simply left them out. We left in the transport mode icons with their original size and design, as they ended up looking even better on a phone display—the icons’ size relative to the screen size made them stand out in an appealing and informative way.

The result surprised us. What began as a complicated and fairly confusing UI mobilised into something clearer and more attractive.

Compromise and innovation

Mobile web sites have limited interactivity features. For example, showing a map, like the Tube map, is a supreme challenge. After several iterations, we came up with the following design.

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This design relies on the digit menu key accelerators enabling the user to navigate the map. On the map overview page, the digit keys correspond to sectors, while in the detail view, the digit keys navigate up, down, left, and right.

The digit overlays on the overview and detail pages are embedded within the graphics, a necessary compromise. We would have liked to use DHTML to layer the digit indicators, but mobile web technology does not allow that feature.

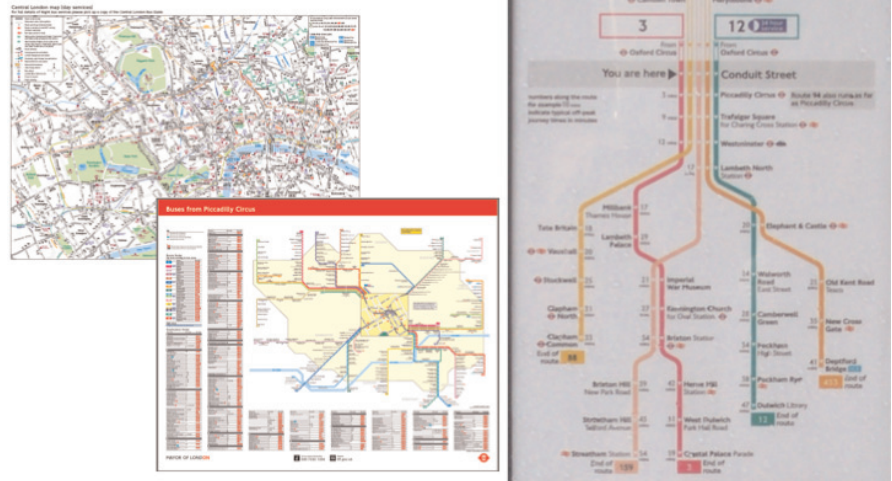
In the detail pages, we chose to show a “map indicator” below the detailed image, so that users who scroll down would be able to get their bearings within the map as a whole. Mobile web technology does not enable “moving the red box” within the image, so the design is view-only.

Next steps

We have made great progress with the conceptual designs, and have begun user research to move the designs forward. Our data gathering activity will include Londoners and visitors with experience using the Journey Planner. We will conduct individual interviews with these participants, who will be asked about their experiences navigating London using the Journey Planner and other means of way-finding, such as paper maps, digital signs, and printed posters.

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Data gathering and user testing, followed by conceptual design for bus journeys



The most challenging next step before us is the Bus Journeys component, for buses cover much more of Greater London than does the Underground.

The bus maps available from TfL are very detailed and difficult to navigate. However, the posters available at bus stops are stylised and extremely well-designed. The posters come in two varieties, one a general map for navigating from the immediate area, and another more specific to navigating from a given bus stop. Neither map will adapt well to a phone, due to the dense information presented, nor are they entirely necessary to compress to a phone, as the posters will be available to travellers when they are needed. However, the overall bus map could do with some mobilisation, as many travellers prefer to use buses over the Tube.

References

1. "Transport for London." Wikipedia entry. Accessed April, 2009.

About the author



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Scott Weiss is the Executive Director for Human Factors International's London office, where he leads UI design, usability research, user experience curriculum development, and usability institutionalisation efforts for clients including AT&T, BT, GSK, Thomson-Reuters, Vodafone, and many others. He is well known for his passion for the mobile user experience, his first book, "*Handheld Usability*" and related blog (<http://handheldusability.wordpress.com>), and his frequent and world-wide public speaking and teaching. Scott has spoken in the US, UK, Europe, Singapore, and Hong Kong on wide ranging mobile user experience topics. He recently spoke at *Informa's Mobile User Experience* conference in London on the iPhone's competitive opportunities, where he also taught a workshop on User Experience Strategy and Implementation. He chaired *Handsets World USA* in San Diego, where he also presented the Mobile Design and Development Platforms workshop. He presented Documenting Mobile 2.0 Information Architecture at the *Euro IA Summit* in Amsterdam, and presented Mobile Social Networking at the *Monetize Web 2.0 & Mobile Social Networking Conference* in London.



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