

Opening Great Britain's Railway Data

Peter Hicks / @poggs

OKFestival, Helsinki – September 2012

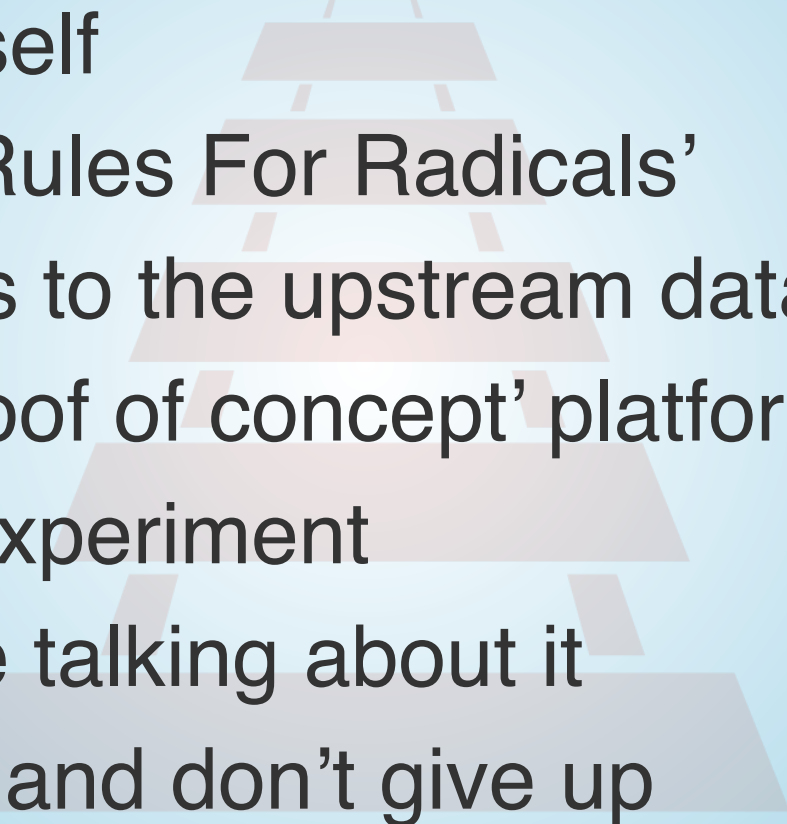
The Problem

- National Rail Enquiries' "Live Departure Boards" is the only source of real-time train information for the public – a monopoly
- API available, but license terms not permissive - platform generates profit
- Developers want to work with the data but cannot get fair access

The Cast

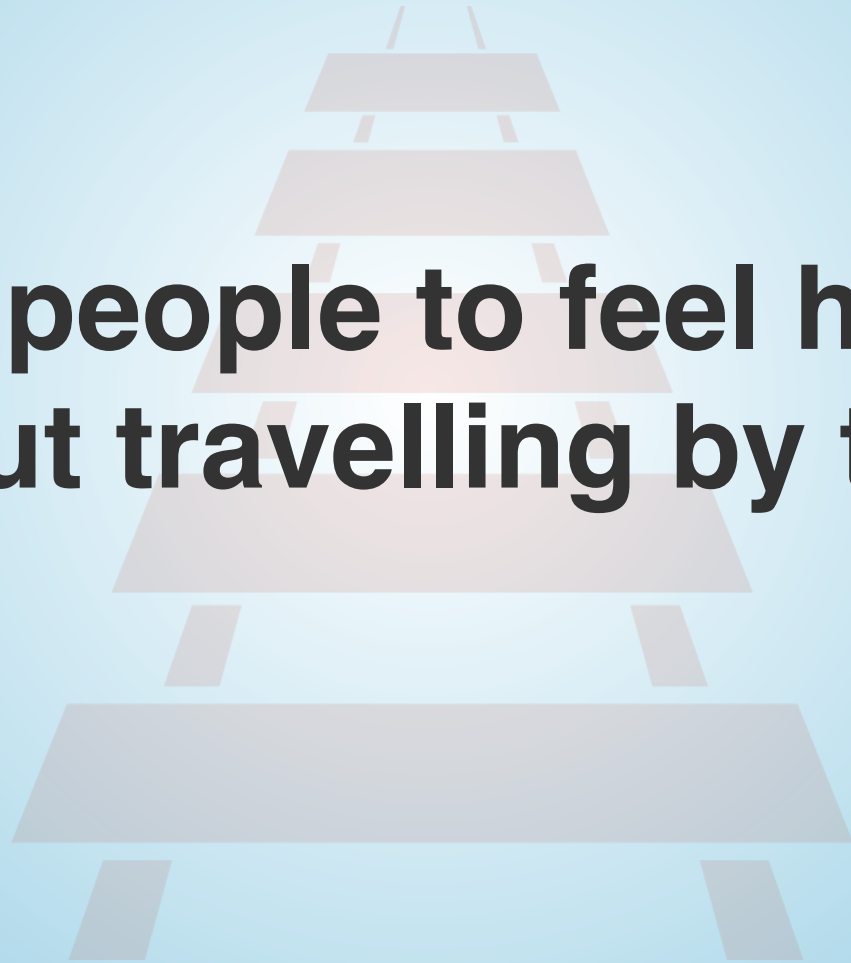
- **Network Rail**
 - Not-for-profit
 - Owns and operates rail infrastructure
 - Runs traffic management IT systems
- **National Rail Enquiries**
 - The “Main source of rail information in the UK”
 - Owns Darwin system and runs Live Departure Boards website
 - ‘Single source of the truth’

The Solution

- Do It Yourself
 - Read '10 Rules For Radicals'
 - Get access to the upstream data feeds
 - Build a 'proof of concept' platform
 - Call it an experiment
 - Get people talking about it
 - Persevere and don't give up
- 

Why?

**I want people to feel happier
about travelling by train**

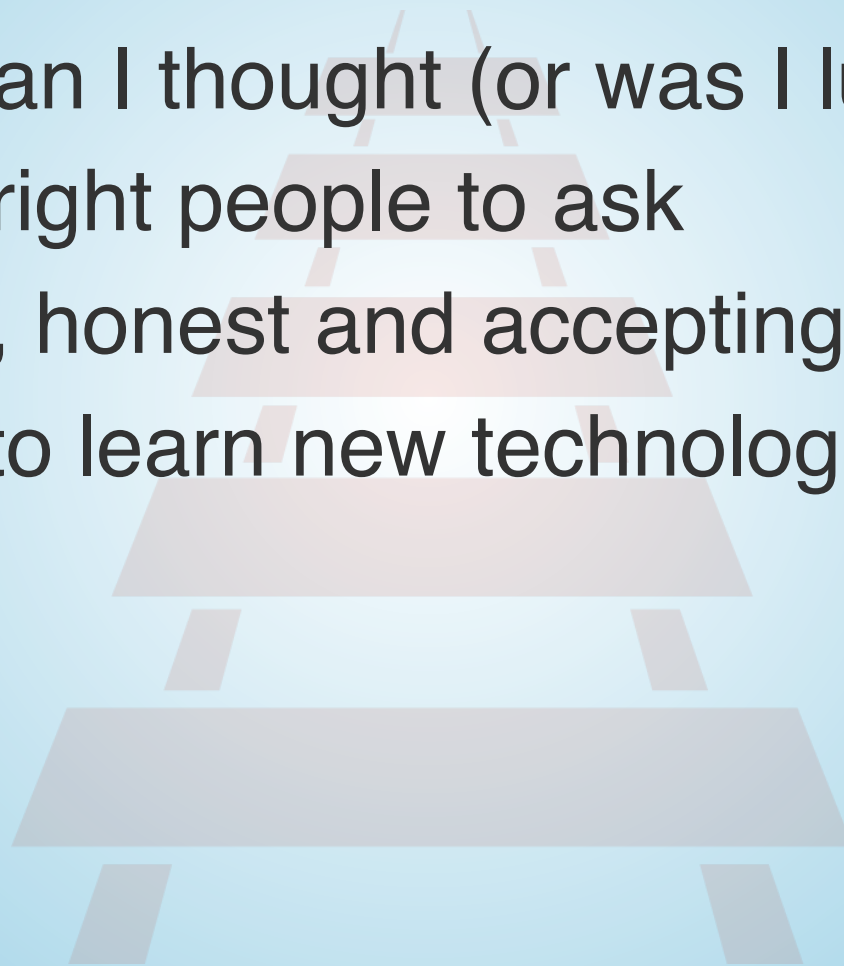


DOING IT



Getting hold of data

- Easier than I thought (or was I lucky?)
- Find the right people to ask
- Be polite, honest and accepting of delay
- Prepare to learn new technologies



Using the data

- Prepare to learn quickly!
- No knowledge of message queuing
- No documentation
- Nobody else to turn to
- Lots of time and effort spent reverse-engineering data
- Document the results to make it easy for others



PROBLEMS

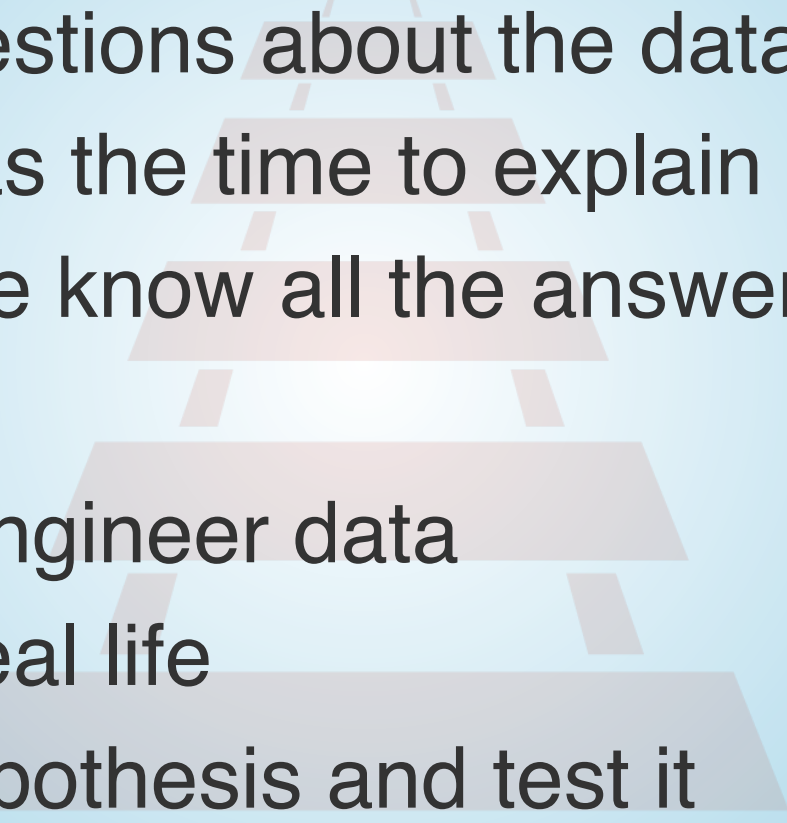
Problems

Licence costs

- WebSphere MQ licensing
 - Simple, but really expensive
 - Over €7,000 for a server licence
 - Completely out of my price range
- Agree to use the free MQ Client
- Performance limitations
- Focus on a small part of the rail network

Problems

Domain Knowledge

- Lots of questions about the data
 - Nobody has the time to explain it
 - Few people know all the answers anyway
-
- Reverse-engineer data
 - Observe real life
 - Make a hypothesis and test it
- 

Problems

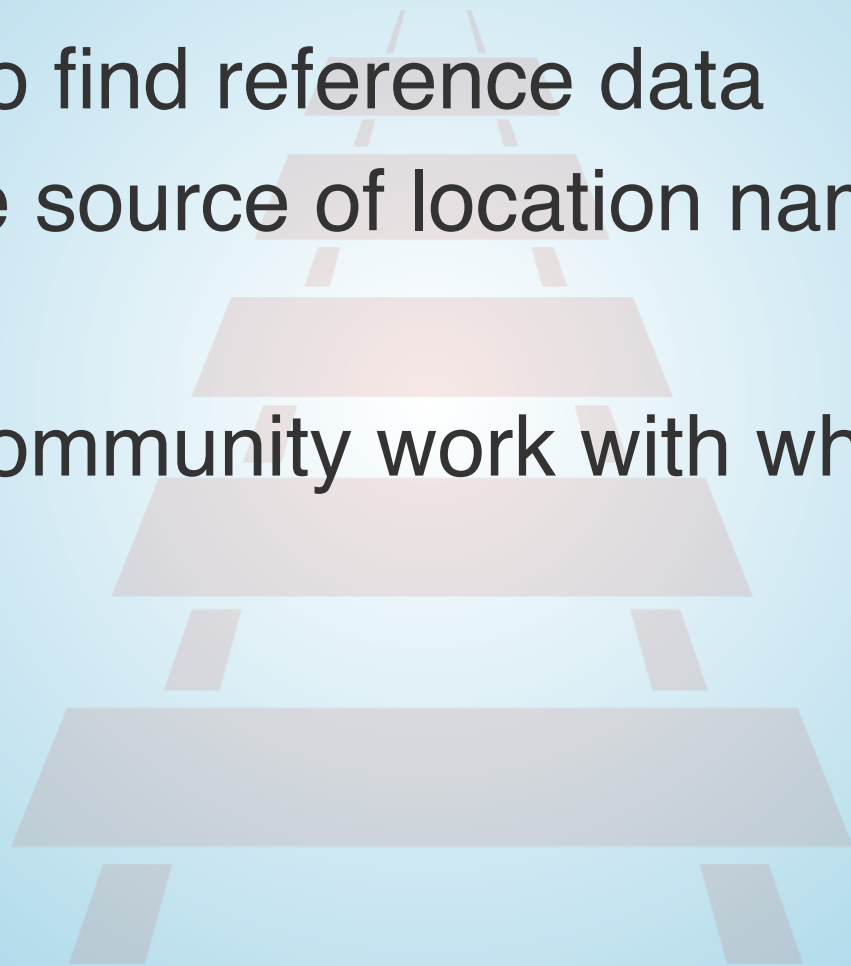
Freight trains

- Site showed all trains initially
 - Including engineering trains
 - Including freight trains
- No explicit permission or prohibition
- A new situation for the industry
- Don't rock the boat – be conservative
- ...but don't let the issue drop

Problems

Reference data

- Difficult to find reference data
- No single source of location names
- Let the community work with what you have





SUCCESSES

Successes

Visibility

- Discussed at the Department for Transport's 'Transport Transparency Board'
- DfT told Network Rail to open their systems – a wholly positive move
- Office of Rail Regulation consulting on transparency in the rail industry

Successes

Visibility

- Network Rail appointed a Head of Transparency with budget and staff
 - Budget and staff get things done
- Network Rail CEO is firmly behind transparency, even if it's painful
- Office of Rail Regulation becoming aware of the benefits of Open Data

Successes

Open Data platform

- Open platform built by Rockshore
 - No impact on existing systems
 - Built within three months
 - Warp-speed by railway standards
- Data for the whole country
- Permissive licence
- Raw, unconditioned data
- Community support and Wiki
- Several hundred registered users



ABOUT OPENTRAINTIMES

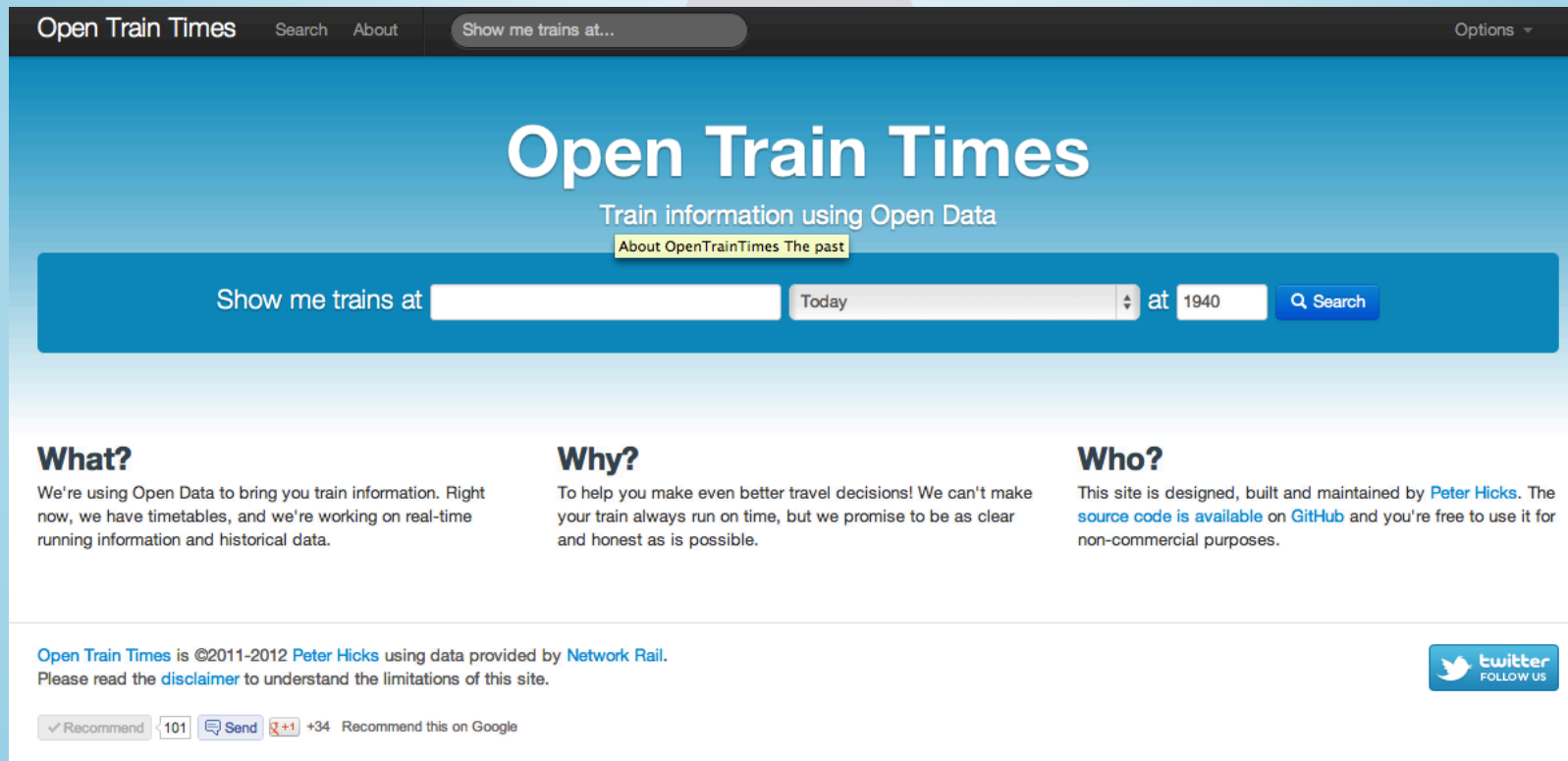
About OpenTrainTimes

History

- Started as TSDBExplorer in January 2011
 - Parse and query timetable data
 - Some real-time capability
 - Open Source available on GitHub
- OpenTrainTimes launched January 2012
 - Static data only, but plenty of interest
 - Over 350 unique visitors per day
 - “Yes, it can be done”

About OpenTrainTimes

The past



The screenshot shows the Open Train Times website. At the top is a dark navigation bar with the site name, search and about links, a location input field, and an options menu. Below this is a large blue header with the site name and a subtitle. A yellow tooltip points to the subtitle. A search bar is positioned below the header. The main content area is divided into three columns: 'What?', 'Why?', and 'Who?'. The footer contains copyright information, a disclaimer, a Twitter follow button, and social media sharing links.

Open Train Times Search About Show me trains at... Options ▾

Open Train Times

Train information using Open Data

About OpenTrainTimes The past

Show me trains at Today at 1940

What?

We're using Open Data to bring you train information. Right now, we have timetables, and we're working on real-time running information and historical data.

Why?


To help you make even better travel decisions! We can't make your train always run on time, but we promise to be as clear and honest as is possible.

Who?

This site is designed, built and maintained by [Peter Hicks](#). The [source code is available](#) on [GitHub](#) and you're free to use it for non-commercial purposes.


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About OpenTrainTimes

The near future



Train information using Open Data

train times maps stats about

Show me trains at going to

on at

To the trains

feedback

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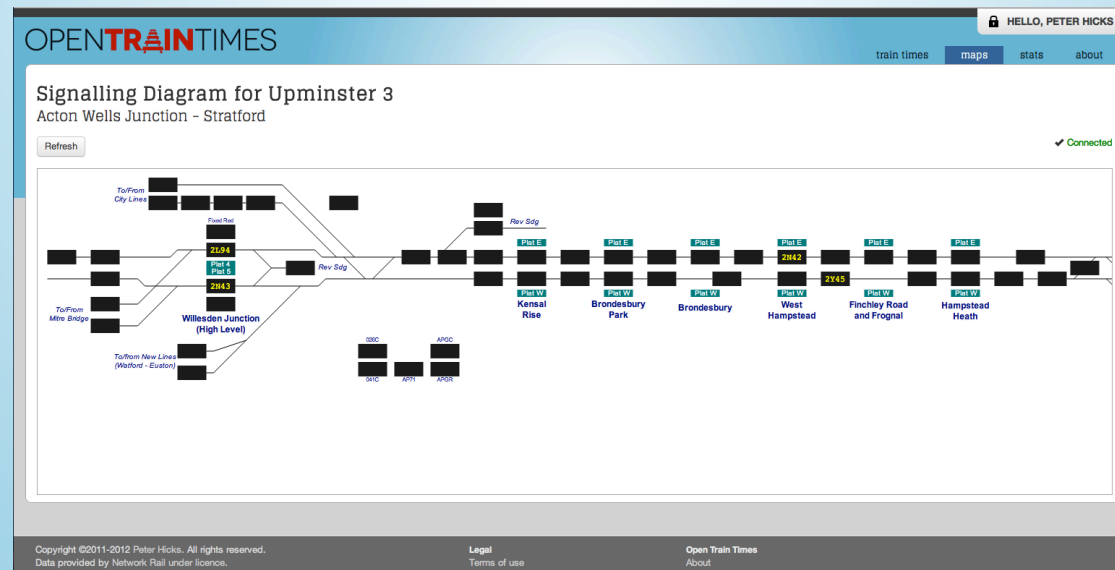
Open Train Times

- About
- Blog
- Source code
- Support
- Site Status

About OpenTrainTimes

The near future

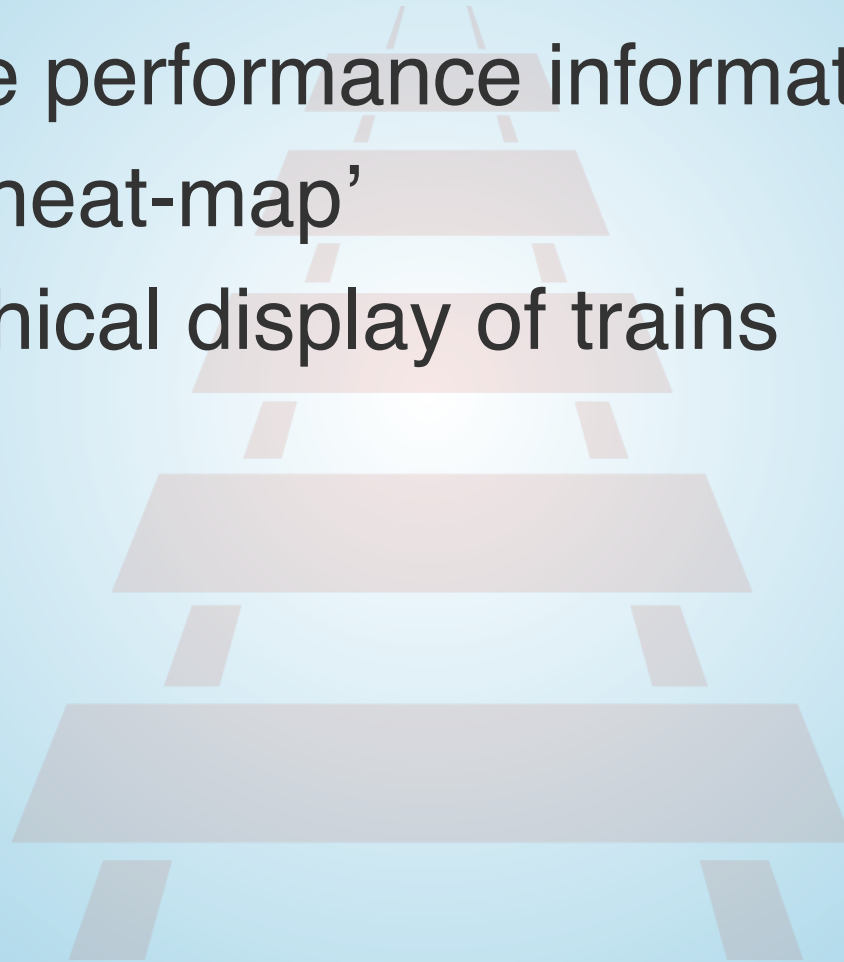
- Re-launching on 1st October 2012
 - Friendlier user interface
 - Professional design
 - Real-time signalling maps



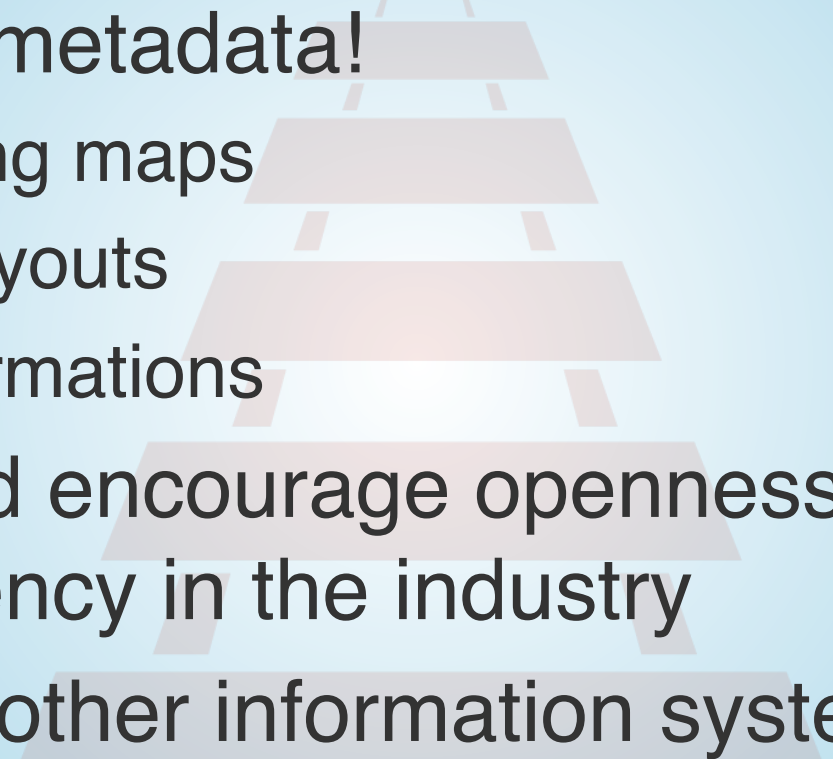
About OpenTrainTimes

The future

- Real-time performance information
- Service 'heat-map'
- Geographical display of trains



There's still more to do

- Free the metadata!
 - Signalling maps
 - Track layouts
 - Train formations
 - Show and encourage openness and transparency in the industry
 - Open up other information systems
- 



OPENTRAINTIMES

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