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Challenges in model implementation: What really matters?

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Challenges in
model
implementation

What really
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Objectives

- To pick out issues of significance raised to date for further discussion

.. To draw on the diversity to date

- To look at “what really matters in model implementation”

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...For the next stages

Common threads

- If one does not have sophisticated client(s)
..... one simply is not in the game at all
- Once one **has** O1 O2 Ox .. models what then?
- An iterative development process is clearly in place
- End user interactions have been central
- A slow shift to realising the full range of roles of data
- Greater emphasis on a sustainable skill community
- Many detailed issues (granularity) and technical points
- Problems of success - want **fast detailed responses**
..... and user usage **generates new requirements**
- But does this mean that only *full* models are needed?
add more to taste. eg Results as pivot point packages in a GIS shell

Detailed issues that emerge as important

- Network resilience: issue emergent from bridge study
- How to maintain, develop, support and communicate?
 - outreach
 - staff skilling and resource creation
- How best to share the results of modeling with others?
 - do we have a good organisational process?
 - do we have a good technical infrastructure?
- Are the systems coming capable of responding to the emergent issues of tomorrow? Development takes time

A collection of individual specific points..

- Service Industry representation demands better light freight attention in urban areas [hunt]
- Collaboration in model development is now emerging [waddell]
- TLUMIP is in the emerging state of the art area of global LUT modeling [wegener]
- Specialised visual pivot point models [conder]
- Data is half the overall costs [dunn]
- Need broader indicators such as Gini equity [grigor]
- Integrated evaluation and indicator frameworks [knudsen]
- Data has cost up to half the investment to date, but has it had a comparable delivery attention? [dunn]
- Scenario management and generation [kundsens]

Data + Models + Interfaces + Access

- Operational use will generate a lot of new 'data'
 - so active archiving emerges
- Usage will generate new needs and involvements
 - so what architecture to enable this?
- So far most effort has been on models and data collection
 - soon we have data generation and data access
- Emergent issues
 - open source community development
 - interface standards- XML Schema
 - data access - Data Observatories



ROMULUS - A Transport Data Observatory

The screenshot shows a web browser window titled "Nesstar WebView - Tiscali Internet Access" displaying the "Transport for London" website. The page features a navigation menu on the left and a main content area. The main content area is titled "Romulus" and includes sections for "About Romulus", "Getting Started", and "Data in Romulus".

Navigation Menu (Left):

- Romulus
 - LATS 2001 Household Data
 - Surveys
 - NEW London Area Transport Survey 2001 Household Survey
 - Cubes
 - LATS aggregated data
 - Main Mode Flows by Person Type
 - Car Ownership, Main Mode, and Income
 - Person Type and Employment
 - Car Ownership by Household Type
 - NEW Car Ownership by Household Type
 - Not Yet Populated
 - Topic
 - Accessibility
 - PTALS 2001
 - CAPITAL
 - LTS
 - Reports
 - Central Area Peak Counts data
 - London Parking Supply
 - Traffic Speeds in London
 - Not Yet Populated
 - Mode
 - Underground/DLR
 - Bus
 - Greater London Bus Passenger Survey (GLBPS)
 - Q54: January/March 2004
 - Q53: October/November 2004
 - Q52: July/Sept 2003
 - BODS Bus Stop Locations
 - Bus Origin Destination Surveys - Bus Stops
 - BODS Bus Routes
 - Private Transport
 - Public Transport
 - Trial
 - Projects
 - Project-1

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Analysis across a federated database [NESSTAR]

Nesstar WebView - Tiscali Internet Access

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nesstar Contact us Help FAQ

Transport for London

Description Table Analysis

Dataset: London Area Transport Survey 2001 Household Survey

London Borough of trip origin: London Borough of trip origin

Combinations of modes used in trip: Combinations of modes used in trip

Type: Column percentage

Combinations of modes used in trip	NR only (1 stage)	NR only (2 or more stages)	NR, UG	NR, Bus	NR, Car	UG only (1 stage)	UG only (2 or more stages)	UG, Bus	UG, Car	UG, UG	Bus only (1 stage)	Bus only (2 or more stages)	Bus, Car	Car only (1 stage)	Car only (2 or more stages)	Other combination of car, UG bus & NR
London Borough of trip origin																
Camden	4.1	2.2	6.8	3.9	3.1	9.1	8.8	6.7	5.6	3.4	3.2	0.8	1.4	2.6	6.1	
City of London	9.4	3.4	6.5	6.7	10.0	7.8	6.8	3.2	6.4	0.8	0.9	0.0	0.3	0.0	6.1	
Hackney	1.8	1.0	1.8	1.9	0.9	1.1	0.8	3.2	1.2	3.2	4.2	2.0	1.2	0.0	1.1	
Hammersmith & Fulham	0.5	2.2	2.2	0.6	0.0	5.4	5.4	4.3	3.4	2.4	1.9	2.7	1.2	0.0	1.1	
Haringey	0.6	0.7	1.0	1.3	0.3	2.3	3.0	5.2	1.8	3.8	4.4	2.4	1.6	2.6	1.1	
Islington	2.6	1.5	3.8	2.6	2.2	5.2	6.6	4.7	3.5	3.7	3.4	3.1	1.1	0.0	3.1	
Kensington & Chelsea	0.4	0.5	3.2	0.6	0.2	6.2	4.7	5.1	2.9	2.4	2.0	2.0	1.3	0.0	2.1	
Lambeth	5.1	6.4	3.6	3.1	5.2	3.2	3.8	3.5	2.0	4.1	4.5	3.5	1.6	1.3	2.1	
Lewisham	5.4	6.6	4.1	4.0	3.5	0.2	0.2	0.6	0.1	3.5	4.2	3.9	2.4	1.3	1.1	
Newham	0.8	1.2	1.1	1.6	0.7	1.9	1.8	4.0	0.9	3.1	3.6	1.6	1.3	1.3	1.1	
Southwark	6.0	4.9	2.4	4.9	5.0	3.5	3.3	3.8	2.5	4.5	5.2	1.6	1.7	2.6	3.1	
Tower Hamlets	1.6	0.5	3.5	1.7	1.0	5.4	5.7	2.6	3.9	2.3	1.6	0.8	1.1	3.9	2.1	
Wandsworth	4.6	6.1	3.9	6.0	1.6	3.1	2.7	3.7	1.2	3.1	2.9	2.7	2.2	3.9	2.1	
Westminster	8.8	7.6	14.3	10.4	10.7	20.1	20.5	14.2	15.9	5.5	5.5	5.1	1.8	3.9	12.1	
Barking & Dagenham	0.4	0.2	0.5	1.2	0.7	1.5	1.6	1.8	2.0	2.2	2.4	0.4	2.2	1.3	1.1	
Barnet	0.4	0.0	1.4	0.9	1.2	3.5	2.9	4.3	4.3	3.5	5.0	5.1	3.9	5.2	1.1	

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http://213.219.24.147/webview/velocity?mode=map&stubs=http%3A%2F%2F192.168.31.101%3A80%2Fobj%2FVariable%2FLATS2001_V279&study= Internet

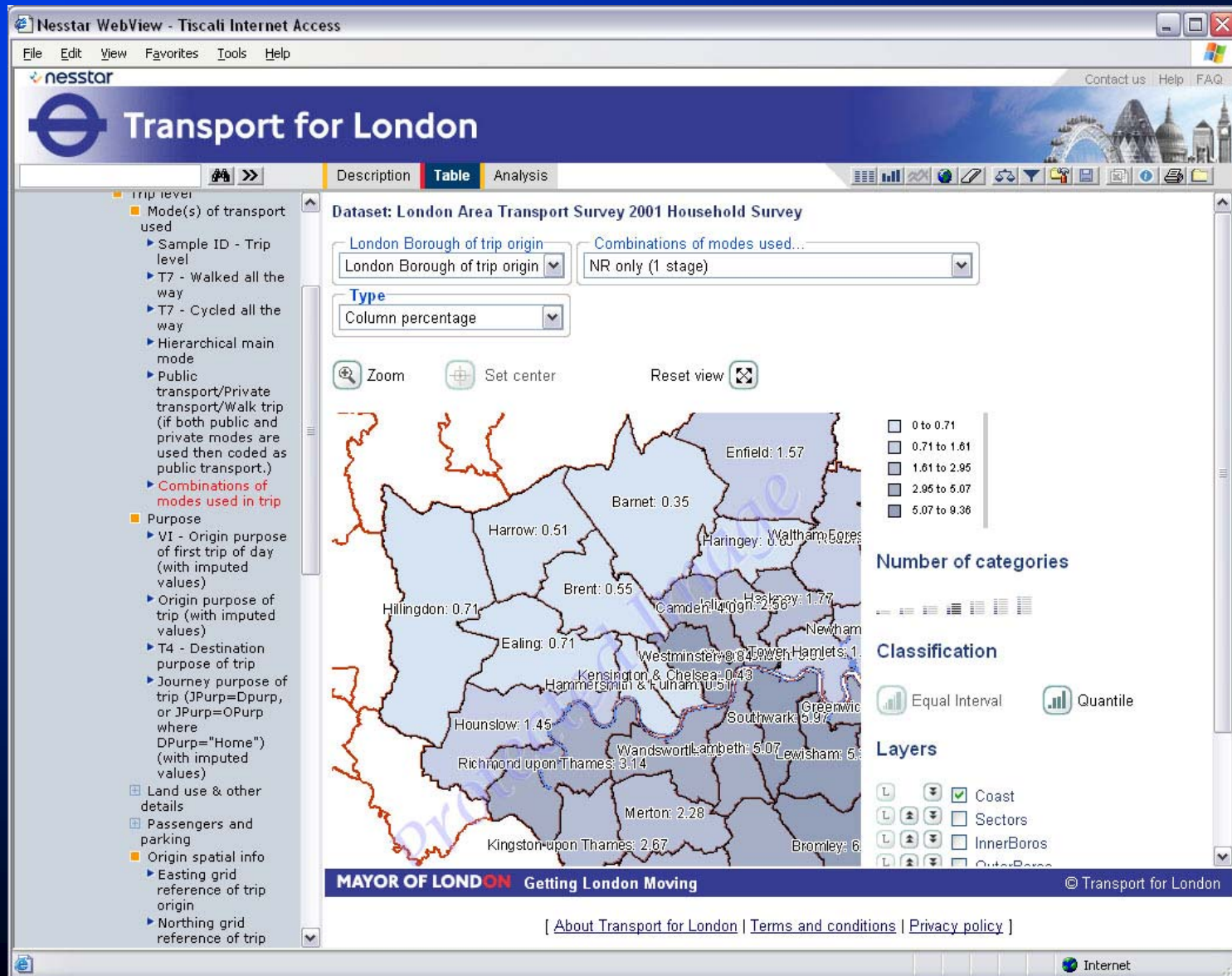
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Mapping Integration [NESSTAR+MapExtreme links]



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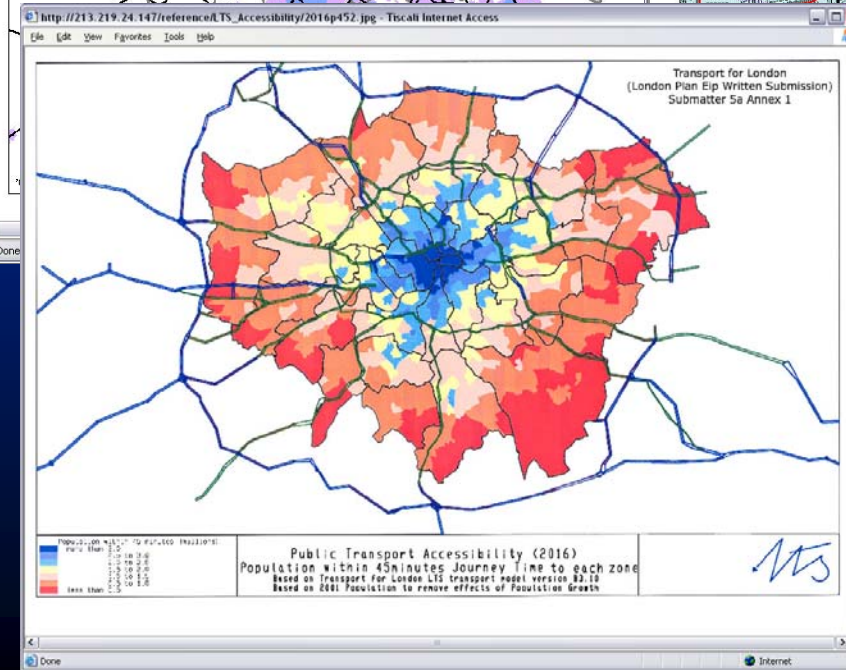
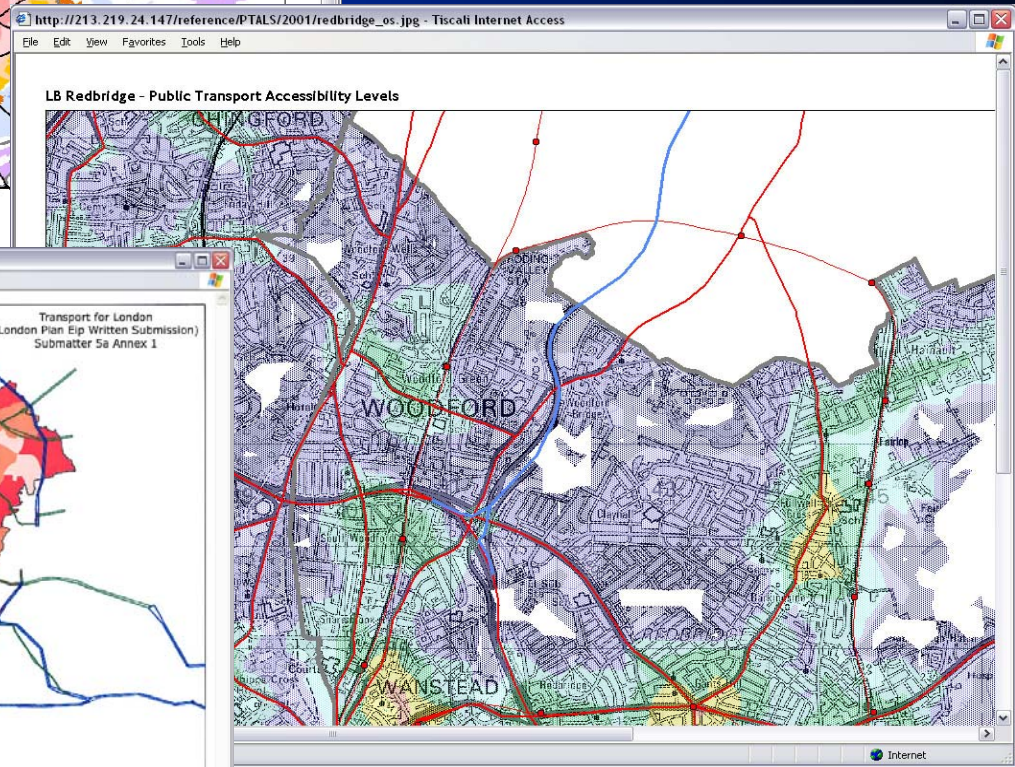
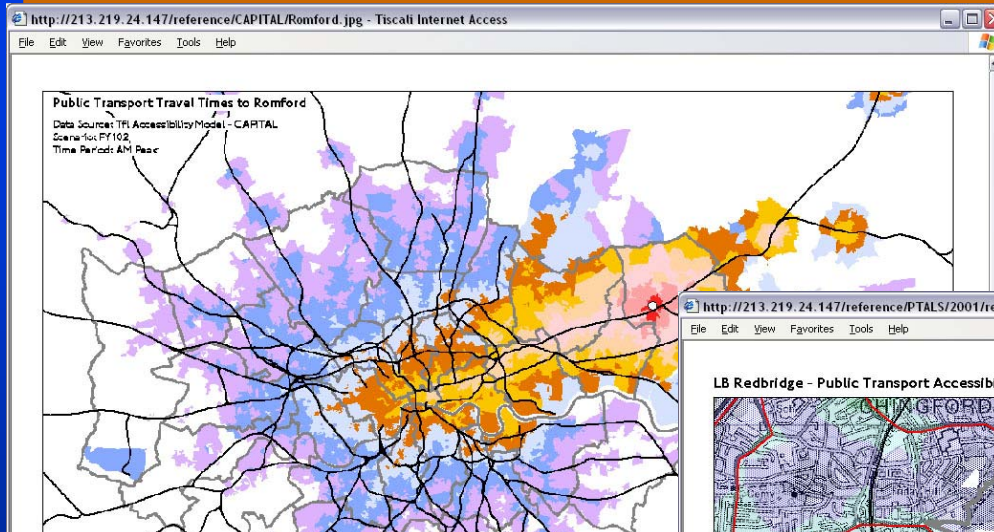
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Indicators from multiple sources [accessibility]



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What really matters? One technical aspect

- Open Source initiatives have long been in TLUMIP
 - We have modular model structures
 - We need clear interfaces for models *and* data
- This means formal Metadata and XML Schema
 - note NCHRP TransXML project
 - new TRB wide Metadata subcommittee
- Data is the other arm of models and needs unified access
 - federated databases and data observatories
- Formal **Model** Metadata + Federated databases permit Bayesian OPUS techniques to be added...www.opus-project.org

And to conclude, what now matters next is...

- An integrated Information and Modeling Strategy
 - covers end user delivery formats and tools
 - brings together diverse data collected and created
 - supports emergent iterative model development
 - maximises returns from data and model investments
 - ensures model ranges required are fully identified
 - scenario management and delivery

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