



Dashboards: An overview

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Definitions

- ‘A visual display of the most important information needed to achieve one or more objectives; consolidated and arranged on a single screen so the information can be monitored at a glance’ (Few, 2006, p. 34)
- Platforms which “use visual analytics –dynamic and interactive graphics, [..] maps, 3D models and augmented landscapes – to display information about the performance, structure, pattern and trends of cities [or subject at hand]” (Kitchin and McArdle, 2016, p.2)
- Visualisations include gauges, traffic light colours, meters, arrows, bar charts, graphs but also interactive maps
- Explosion of dashboards in the past two decades

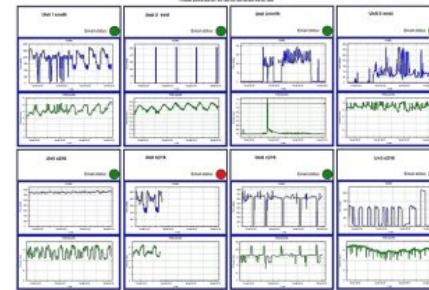
Multiplicity of types and purposes



1 Strategic decision-making (DB052)



2 Quantified Self (DB021)



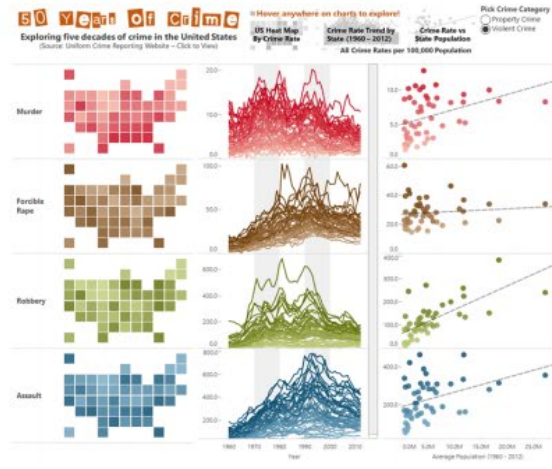
3 Static Operational (DB034)



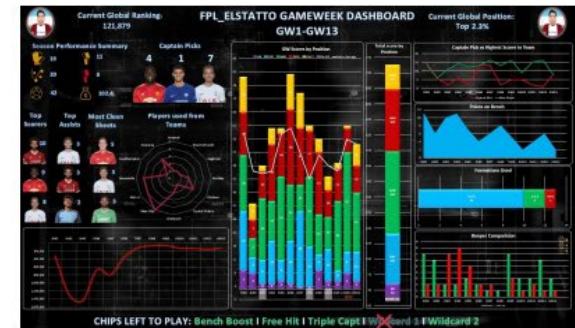
4 Static Organizational (DB101)



5 Operational decision-making (DB036)



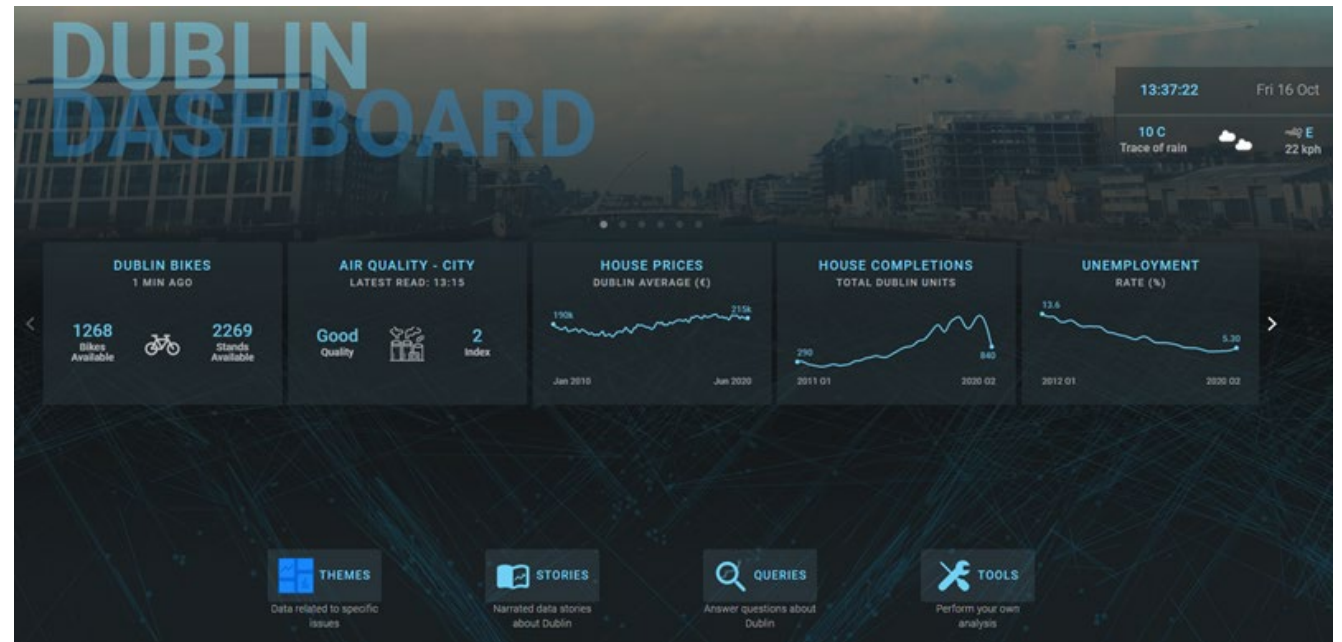
6 Communication (DB005)



7 Dashboards Evolved (DB045)

Dublin Dashboard

- Information about Dublin clustered around key themes: 'Transport', 'Environment', 'Housing', 'Economy', 'Education' and 'Demographics'
- Near real-time data on public transport usage, bike rentals count, road traffic counter, noise level, air quality
- Statistical data including annual property price index, monthly rent prices, quarterly house completions, employment rates/per sector, etc.
- Functionalities: 'stories', 'queries', 'tools'



<https://www.dublindashboard.ie/>

Dublin Dashboard

Data Set	File Type	Data Provider
Air Quality	JSON	Environmental Protection Agency
Ambient Sound Levels	API/JSON	Dublin City Council
Hydrometric Water Levels		Environmental Protection Agency
River Levels	API/JSON	Office of Public Works
Weather	API/JSON	Weatherunderground
M50 Travel Time	API/JSON	National Roads Authority
TRIPS Travel Times	CSV	Dublin City Council
Car Parks	XML	Dublin City Council
Traffic Cameras	URL	Dublin City Council/South Dublin County Council
Dublin Bikes	API/JSON	JC Decaux

Table 1: Sources of Real-Time Data

Reference: McArdle, Gavin and Kitchin, (2016)

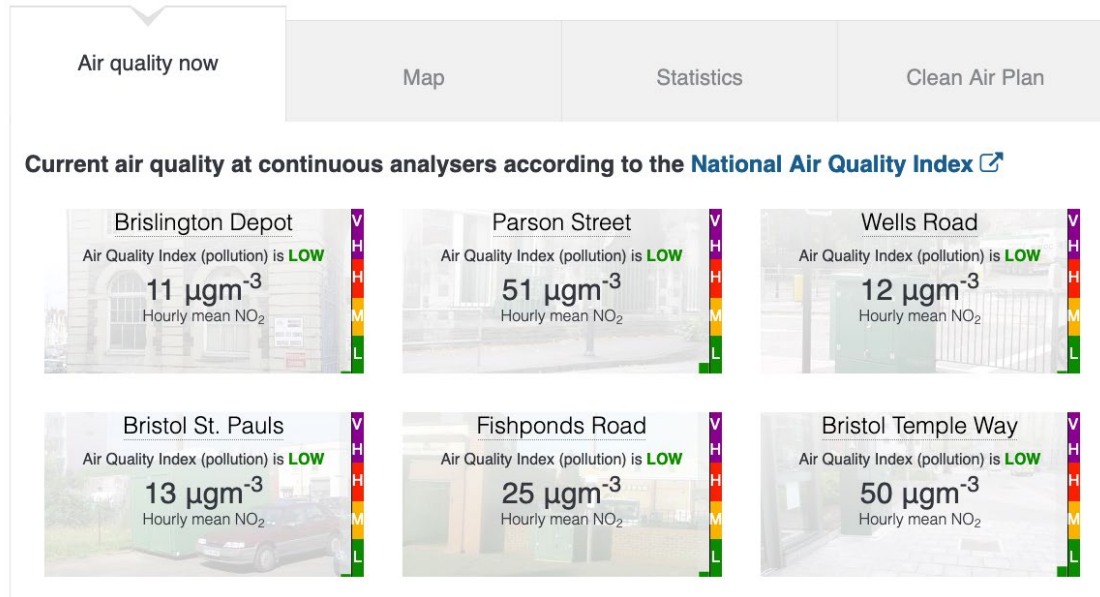
Data Set	File Type	Data Provider
Employment	StatBank	Central Statistics Office
Gross Value Added	StatBank	Central Statistics Office
Survey on Income and Living	StatBank	Central Statistics Office
Number by Employment Sector	StatBank	Central Statistics Office
Employees by Company Size	StatBank	Central Statistics Office
Overseas Visitors to Dublin	PDF	Failte Ireland
Waste Produced per Capita	PDF	Environmental Protection Agency
Household Recycling	PDF	Dublin City Council
Annual Water Consumption	CSV	Dublin City Council
River Water Quality	PDF	Environmental Protection Agency
Green Flags for Schools	PDF	Dublin City Council
House Unit Completions	Excel	Department of the Environment
Planning Applications	Excel	Department of the Environment
Supply of Land	Excel	Department of the Environment
Contribution from Developers	Excel	Department of the Environment
House Prices	Excel	Department of the Environment
Rent Prices	StatBank	Private Rental Tenancy Board
Population Demographics	StatBank	Central Statistics Office
Number of Households	StatBank	Central Statistics Office
Household Composition	StatBank	Central Statistics Office
Patients Waiting on Trolleys	CSV	Department of Health
Population Health	StatBank	Central Statistics Office
Education Level	StatBank	Central Statistics Office
Number of Students in Schools	StatBank	Department of Education and Skills
Crime in the Dublin Region	StatBank	Central Statistics Office
Fire Brigade Activities	Excel	Department of the Environment
Road Fatalities and Injuries	PDF	Road Safety Authority

Table 2: Sources of Non Real-Time Data

Bristol's Air Quality Dashboard

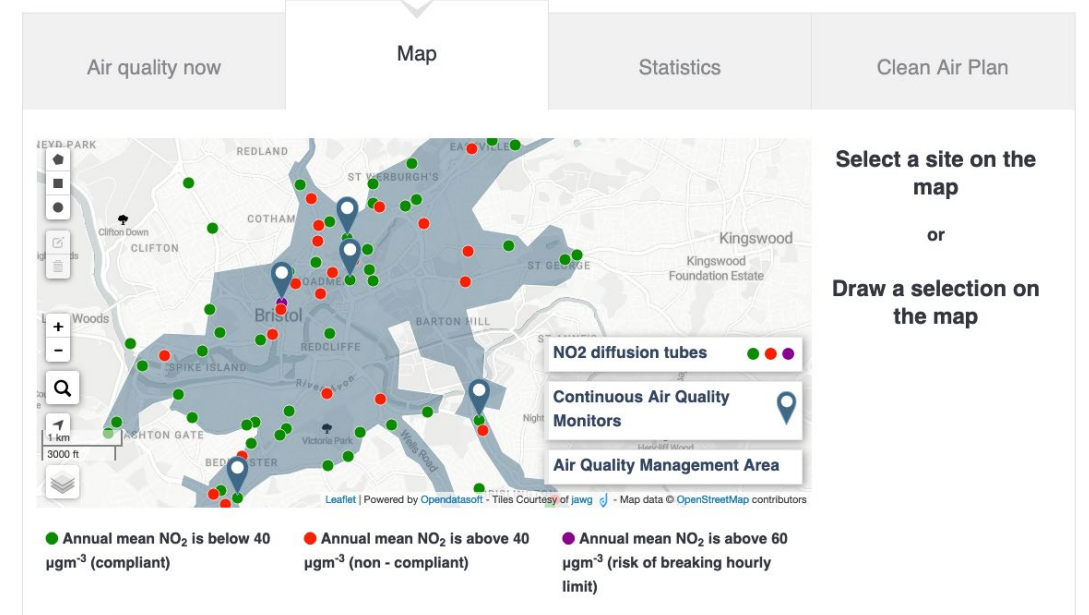
Air Quality Dashboard

This dashboard will help you access real-time and historic [air quality data](#).
Map, plot and download the data using the tabs to navigate.



Air Quality Dashboard

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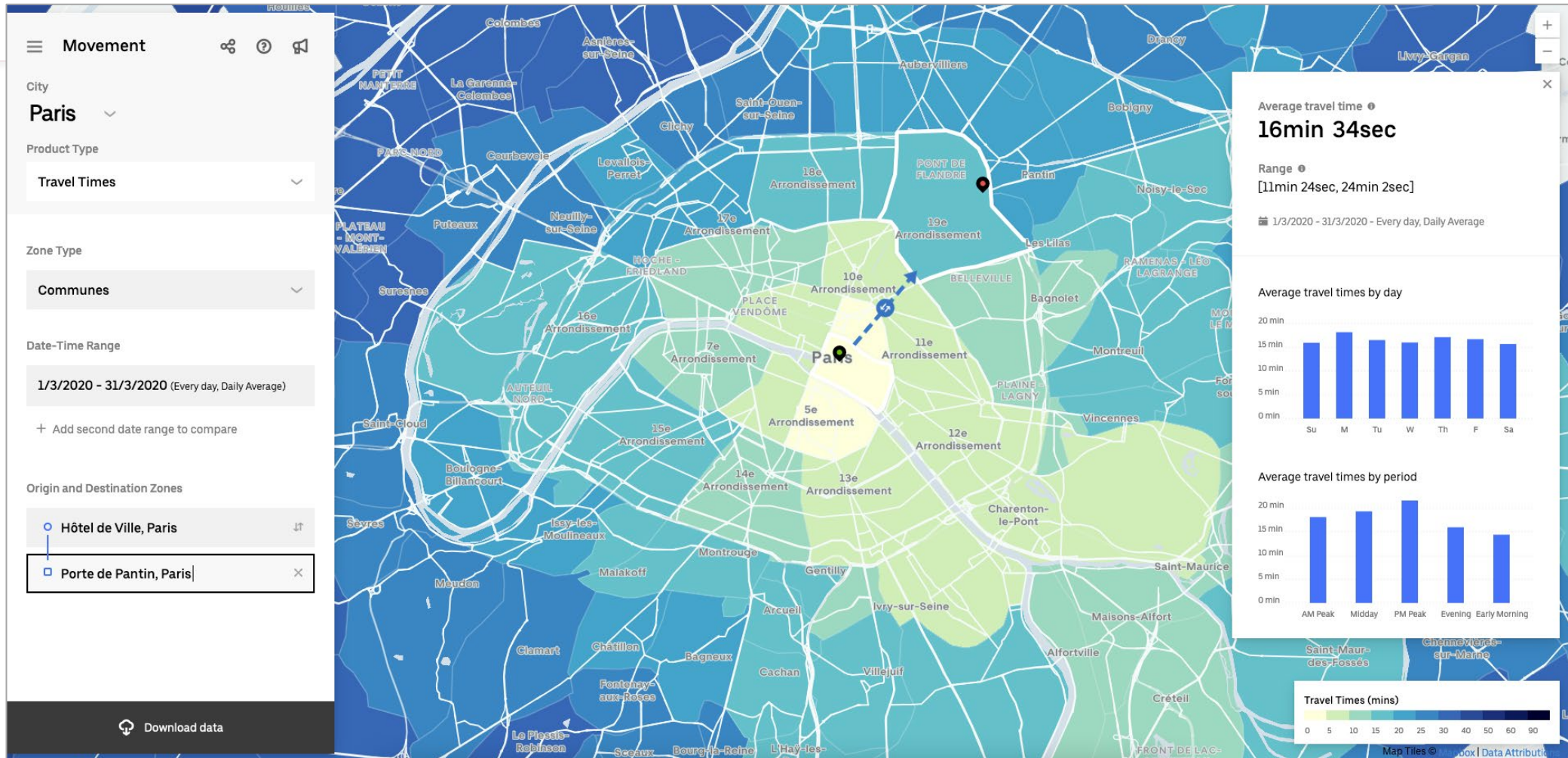
The Scottish Tech Army's Covid-19 Dashboard



Edmonton's Citizen Dashboard



Uber Movement City Dashboards





Food for Thought

- Identification of targeted audience(s) and needs
- Definition scope/purpose of the dashboard
- Sourcing data (sustainability, data consistency and quality, licensing)
- Visualising data ('politics of representations', contextualisation of data)
- Useability /accessibility (digital literacy/skills, accessibility requirements)
- Technical infrastructure (platform used, hosting, storage data, security)

References

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- Kitchin, R., Lauriault, T & G McArdle (2015) Knowing and governing cities through urban indicators, city benchmarking and real-time dashboards, *Regional Studies, Regional Science*, 2:1, 6-28.
- McArdle, Gavin and Kitchin, Rob (2016) *The Dublin Dashboard: Design and development of a real-time analytical urban dashboard*. In First International Conference on Smart Data and Smart Cities; III-4/W1, 7-9 September, Croatia.
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