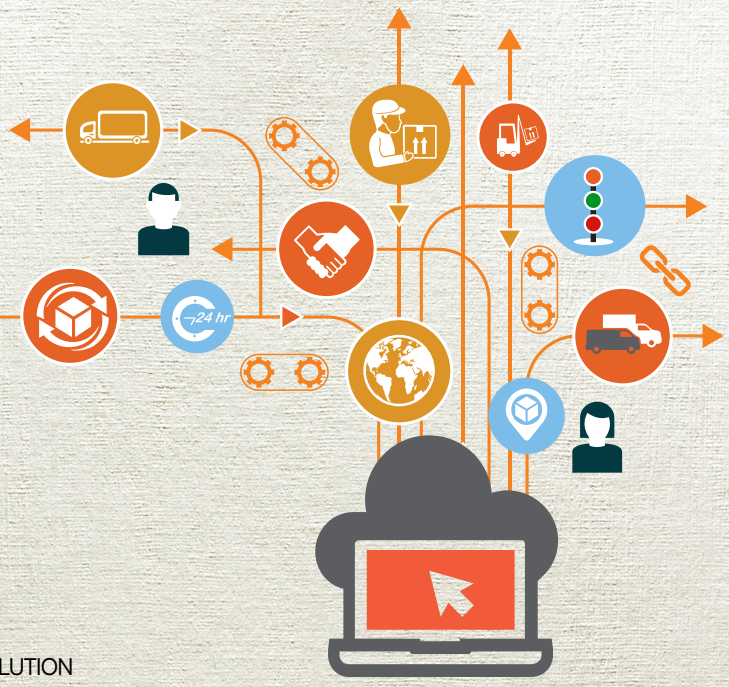
VICROADS TRAFFIC INFORMATION SYSTEM SETS THE PATH FOR ENTERPRISE TRANSPORT ANALYTICS PLATFORM



END-TO-END DATA WAREHOUSE AND BUSINESS INTELLIGENCE SOLUTION

CASE STUDY

> The new Traffic Information System is transformational for VicRoads empowering business users to extract great insight from high quality, integrated data. It lays the foundation for a Transport Analytics Platform that will drive up the value of our information. The TAP will flow with new strategy, policy and operational insights ultimately delivering better transport for Victorians.
>
> **Dr Dale Andrea, Director Information Access, IM&T, VicRoads**

> The agency's traffic information system was a good example of pulling out the best of expertise from both sides of the fence. Led by HCL, the project has seen HCL teams embedded on site, alongside VicRoads personnel.
>
> **Susan Sly, former CIO, VicRoads**

About VicRoads

VicRoads is an Australian State Government organization for the State of Victoria. VicRoads supports Victoria's livability and economic prosperity by planning, developing, and managing the arterial road network, and delivering registration and licensing services.

Key Business Drivers for a Traffic Information System

VicRoads has moved from projecting and meeting the future demand for road infrastructure, to a greater emphasis on optimizing the utilization of existing infrastructure across all road-based modes of transport. This has been accompanied by an increasing public/political profile with a key focus on congestion management and road safety.

Moreover, there has been an increased reliance on data to:

- Justify investment decisions by both State and federal governments
- Enable evaluation of outcomes from those investments
- Assist future decision making and project selections

Consequently, the legacy system was unable to properly support these requirements due to insufficient data, capacity constraints, a lack of end-user access to validated data, and time-consuming manual procedures. These created a need for a Traffic Information System (TIS) that would address data and end user needs.

Objectives of the Traffic Information System

- Make traffic information data from a wider range of current sources available to VicRoads decision makers and operational staff
- Make traffic information data more easily accessible to data consumers within VicRoads
- Provide traffic information data with a currency that supports the business needs of VicRoads data consumers and on demand delivery of statistical and ad hoc reports
- Provide traffic information with a granularity that supports the business needs of VicRoads data consumers
- Improve efficiency of IM&T (VicRoads Information Management & Technology Division) data management processes and procedures, and avoid business risk posed by the potential failure of existing obsolete systems

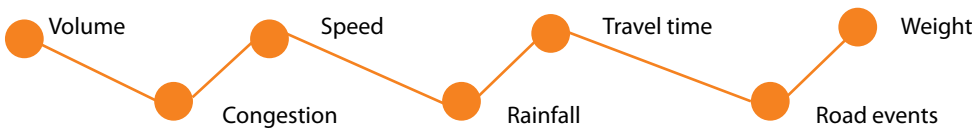
Key Solution Highlights

- Build and run of an Enterprise Traffic Information Data Warehouse - an end-to-end IBM suite implemented on a massively parallel processing architecture
- Spatial integration of data
- Integrated view of traffic data, through a unified traffic data model (with the potential of becoming the point of reference for future projects)
- Complex extract, transform and load processing interfacing with manual inputs, device data and spatial systems (approximately 57 interface files which were part of 33 data sources); types of files being processed include .csv, .txt and binary
- Complex value added processing - assessment, selection, and estimation of network traffic/raw traffic data for meaningful business value
- 37 functional reports with integrated map-based views and 15 operational reports
- Migration of 25 years of TIS data done in parallel with the data warehouse development project

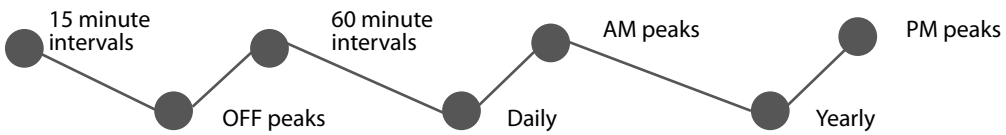
The project went live on the 1st of September, 2014 and is successfully in production. The Traffic Information System will now be the starting platform for an Enterprise BI platform, and will work to bring in more subject areas. Expansion of the platform has already commenced. The Project Authority Board was impressed with the collaboration between HCL and VicRoads' analysts and attribute much of the project's success to this partnership approach.

Benefits of a Traffic Information System

The Traffic Information System provides location analytics on the following metrics integrated from automated and manual data sources, for the Victorian Road Network:



The metrics can be scrutinized at the following levels of granularity:



Value of the Traffic Information System

Map Based Business Reports

- Ready to use Reports with spatial views
- Reliable, fit for consumption and ready for distribution.

Data Integration with the Location Referencing System (LRS)

- All data in TIS is georeferenced using the LRS - a common set of web services that ensures location referencing standards across VicRoads business systems.
- As a result, traffic information can be integrated and spatially analysed in conjunction with information from other systems, such as crash data and road condition data.

Self-Serve Reporting Capability

- Access to all traffic data
- Empowers users with anytime, anywhere reporting and traffic data analysis

Improved Operational Efficiency

- System will relieve operational/process overheads of traffic analysts
- System assessments based on historic calibrated data cover around 80% of the source data
- User interface provided for analysts to manually assess remaining 20% of the data and review system assessed data.
- Functionality for data analyst to modify data graphically and edit the accuracy status of data

How HCL has an edge over other players

- Extensive industry experience across industry segments including Travel and Hospitality, Transportation and Logistics
- Trusted by eight of the top 15 logistics service providers, seven of the top 12 airlines, nine of the top 15 railroads, two of the top 5 hotels and five national mail companies for their IT and business transformation
- Utilizing domain-led business process repositories, and providing tools and framework-led IT and business transformation through dedicated centers of excellence for logistics and airlines
- Flexible pricing options including T&M, fixed price, risk-reward sharing, and outcome-based pricing
- A collaborative approach to outsourcing in which the customer retains control over all strategic aspects of IT while leveraging HCL's capabilities for operational execution and excellence
- Over 25 industry-led solutions and frameworks, dedicated customer academies, and centers of excellence delivering domain capability and customer value
- Valuable partnerships with key industry players including JDA, Red Prairie, Infor, eBiznet, Daon, Avfinity, SAP, Oracle, Microsoft, TIBCO, CA, and EMC, amongst others. Proven ability to partner with clients and ISVs to develop industry solutions and platforms
- Structured, measurable approach to value creation, and ensures committed, quantified returns on annual contract value

Sample Reports

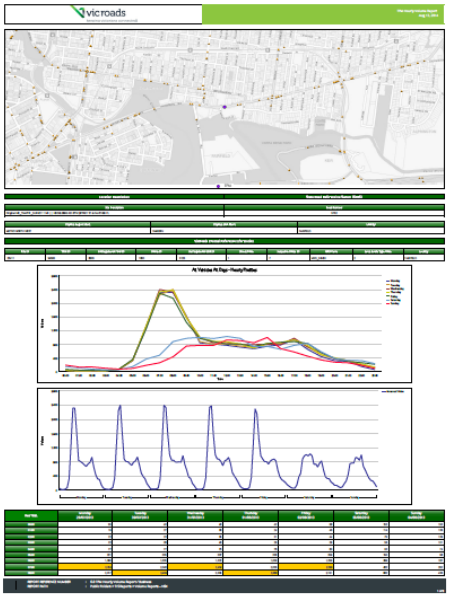
The reports generated out of the TIS are reference reports, which along with other inputs help in decision making to align with the strategic objectives of VicRoads. Here are 2 sample reports.

Vehicles Kilometers Travelled (VKT)

This report indicates the growth in the number of vehicles in the past 10 years which helps the user to ascertain if a particular Local Government Authority (LGA) has been growing and if the LGA development plan is in accordance with the expected growth.

Traffic Flow Management (TFM) – Hourly Volume Report

This report indicates the latest 7 days volume at a particular location. Data is available in different granularities like 15 minutes, AM peak period, PM peak period , 24 hours , 5 day average, 7 day average, etc. This information at different aggregations helps users to understand traffic flow at the location.



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