CAMPBELLTOWN | URBAN TRANSFORMATION

Measuring Place in the Cloud

Supported by Amazon Web Services (AWS), Campbelltown City Council and Place Intelligence demonstrate how big data and cloud platforms enable evidence-based urban planning.

CAMPBELLTOWN

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Campbelltown is a growing city located 53km south-west of the Sydney central business district.
Image: Campbelltown Council

Revitalise Queen Street **is a place activation programme that sought to identify the complex place-specific priorities and actions required to realise a sustainable, inclusive and prosperous precinct.**

The Challenge

Campbelltown City Council ("Council") is a local government municipality in the fast-growing Macarthur region, a declared priority growth area in Sydney, Australia.

In 2020, Council adopted the *Reimagining Campbelltown City Centre Master Plan*, which articulates the community's vision to transform the area into the economic, cultural, and lifestyle capital of Sydney's Macarthur region. As part of this Master Plan, Council developed *Revitalise Queen Street*, a place activation programme for the town centre's pedestrian corridor. Going beyond a simple land use planning strategy, the programme sought to identify the complex place-specific priorities and actions required to realise a sustainable, inclusive and prosperous precinct.

Campbelltown City Council developed a series of place performance indicators to evaluate and quantify the economic and cultural impact of temporary infrastructure and activation programmes on Queen Street - the city's main pedestrian street. These indicators would help build a business case for more permanent changes.

Jessica Noyes, then-Council's Reimagining Campbelltown Lead, elaborated, "We'd developed an

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evaluation framework identifying key performance indicators (KPIs) for the program but needed help measuring the impact."

Measuring the impact of places for effective urban planning requires access to large volumes of data on how places are used over time. However, methods for measuring place use often rely on manual data collection which results in retrospective analysis, and more advanced approaches tend to be too costly for local governments.

The Solution

To effectively measure the impact of places with a data-driven approach, Council looked to Place Intelligence (PI), an Amazon Web Services Smart City Pilot Partner that specialises in location intelligence services using big data and machine learning. PI built its platform on the AWS Cloud to leverage services such as Amazon S3 (a storage solution for frequent data access), Amazon Glacier (an archive solution for long-term storage), and Amazon EC2 (a scalable compute platform) to provide scalability, data availability, and security.

Moving towards the goals of measuring place impacts, Council and PI worked together to address:

1. the immediate need to quantify and validate the Queen Street activation programme's impact on place functions; and

2. the increasing demand from government departments for access to big data and place benchmarking.

These objectives called for a real-time data reporting dashboard that could be sustainably maintained and utilised. Three plans of action were undertaken:

1. Indicators and key metrics needed to be developed to support Council's existing measurement framework and Place KPIs;

2. The measurement of these indicators and metrics needed to feed into interactive dashboards to enable different stakeholders (e.g. Council delivery, development, and growth teams) to quantify and track place performance over time; and

3. Stakeholders needed to use the dashboards confidently to guide and review policy decisions.

Noyes and her team held upfront discussions with PI to work through the programme proposal and plan an intelligence dashboard to track key metrics for activity, place use, and economic performance. These included changes in footfall in downtown areas, catchment area calculations to determine how far people travelled to visit an event, sequence of places visited, and dwell time—the amount of time spent in a target area.

To achieve Council's community and stakeholder inclusive engagement priorities, PI collaborated with the University of Western Sydney (UWS) to conduct social and demographic research, which focused on audience segmentation and using big data to measure community voice at scale. Through the UWS surveys, Council gained insights into the local community's preferences and values. For example, 80% of respondents wanted to swap 20+ parking spaces for one shared public space;

Instead of rows of data, Place Intelligence visualises movement and activity data in place, which tells a strong story of Queen Street and the surrounding areas of Campbelltown.
Image: Place Intelligence, Australia

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Under *Revistalise Queen Street*, over 315 new plants to the streetscape were added, providing a greener and more pleasant urban environment.
Image: Campbelltown Council

a similar number also wanted more events on Queen Street. Council took these preferences into consideration as they designed and implemented events and programmes on Queen Street.

An intelligence dashboard, developed on an app, was co-designed by Council and PI. With the app, Council stakeholders were able to track the key metrics to make evidence-based decisions on improvements and changes on Queen Street.

Since this was the first time Council staff were using a big data application, PI also provided comprehensive training for Council team members on accessing and interrogating the data to obtain the most beneficial insights.

"The PI dashboard is intuitive and easy to use. It's more a question of drawing insights and making sure we're not jumping to conclusions incorrectly," Noyes says. "We appreciate how the [PI team] is constantly working to update their data sets to make it as user-friendly as possible."

It's a completely different experience when you look at the place and its data together.

A video of resulting Queen Street activities.
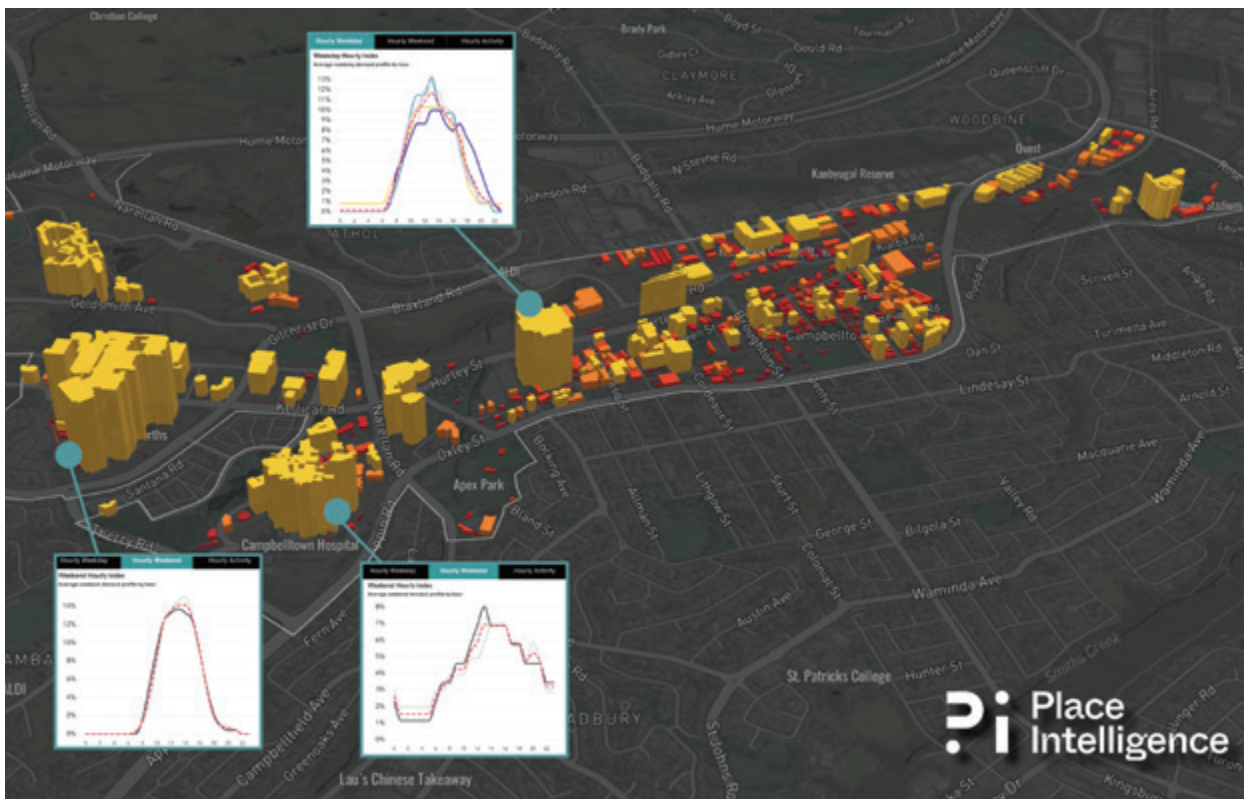
PI's visualised dashboard helps the Council understand the areas and patterns of peak activity that occur around Queen Street provides a starting point for tactical urbanism approaches.
Image: Place Intelligence, Australia

The Outcome

The development of a dynamic intelligence dashboard enabled Council to conduct ongoing place performance with real-time analysis and insights. Custom-built dashboards were used to support diverse precinct redevelopment plans, wayfinding, transport strategies and ongoing place activation initiatives. Insights were used to validate the New South Wales State government's expenditure on the city's place activation strategy.

Council continues to use PI data to guide and evaluate policy decisions, such as its parking rules review in the city centre. Notably, PI data was used to build the business case for a new precinct as well as develop Council's place-based transport and infrastructure capital plans and building prioritisation. Council also leveraged the PI dashboard to provide impact assessment data to stakeholders and the broader community. Having an objective, evidence-based foundation to support policy dialogues has helped build trust between Council and key stakeholders, especially citizens.

"Working with PI has opened up a whole range of opportunities about what sort of information we can access. It's a completely different experience when you look at the place and its data together," said Jessica Noyes.

Events such as pop-up street markets on weekends allow locals to feature their wares whilst bringing the community together.
Image: Campbelltown Council

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While Council explores further applications of location intelligence data to realise the *Reimagining Campbelltown City Centre Master Plan*, and achieve the city's strategic ambitions, PI continues to leverage their AWS-based data and analytic platform for other cities and organisations in Australia, the United States and around the world.

As Bonnie Shaw, Co-Founder and Chief Impact Officer at Place Intelligence, said, "Access to cost-effective infrastructure on AWS allows us to build international automation and standardisation without purchasing our own super computers." AWS looks forward to supporting partners and cities to innovate and grow further on its platform. 🔍