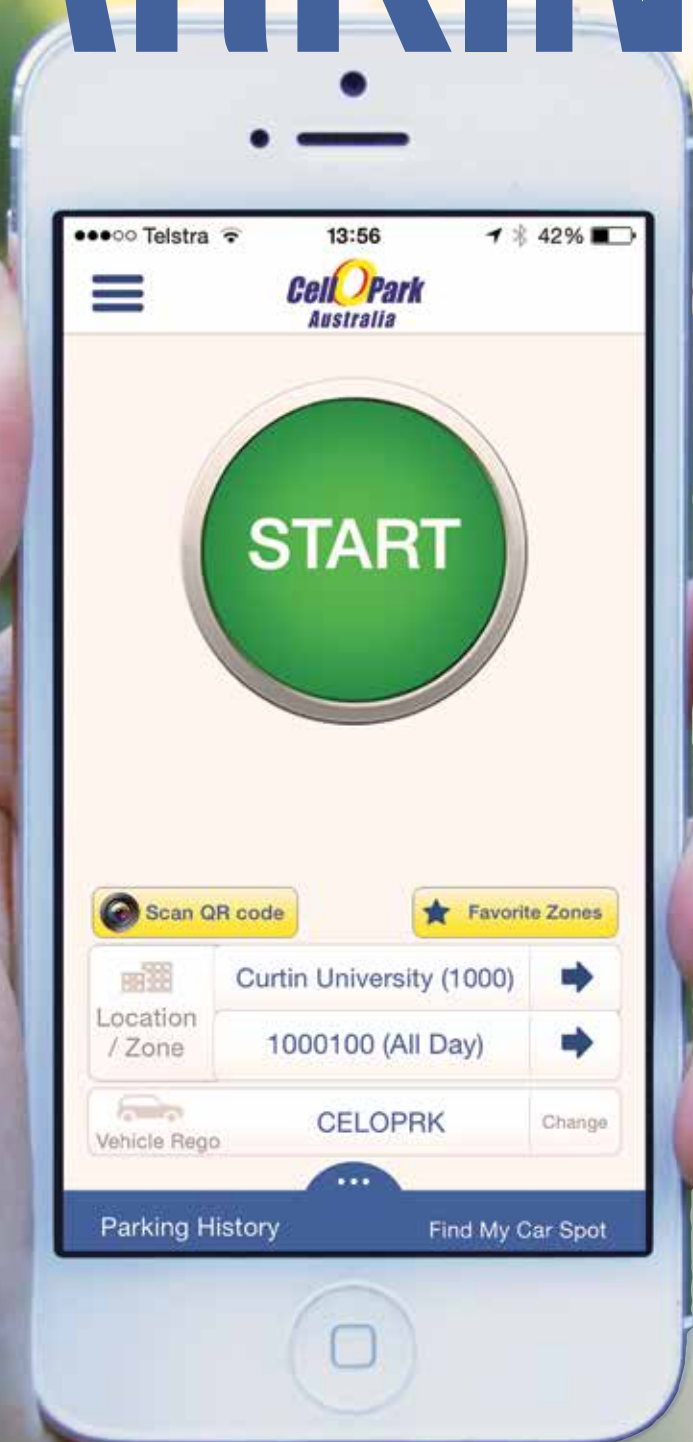


A SMARTER PARKING

By Graham Arndt



If video killed the radio star, will pay-by-phone technology lead to the demise of parking meters?

SOLUTION



A NEW SMARTER PARKING INITIATIVE at Curtin University in Perth, Australia, illustrates that meters are no longer the must-have item for paid parking. Curtin University's pay-as-you-go (PAYG) parking system is the first of its kind to be introduced into Australia and possibly the world. The system successfully replaced antiquated student permits and provided an easy, safe, equitable, and sustainable alternative.

The unique smarter parking solution allows motorists to pay for parking in real time using a phone or any internet-enabled device while it offers different rates for different user types and different access options. The package incorporates integration with legacy staff and student information systems, bay-finding signage, and license plate recognition (LPR) technology. Once registered, a user simply starts and stops his parking session using a phone, smartphone, tablet, or computer.

The PAYG parking solution was implemented to replace the student permit parking system, which was manual, paper-based, and inflexible. It also did not meet the needs and requirements of students, who were dissatisfied for a number of reasons:

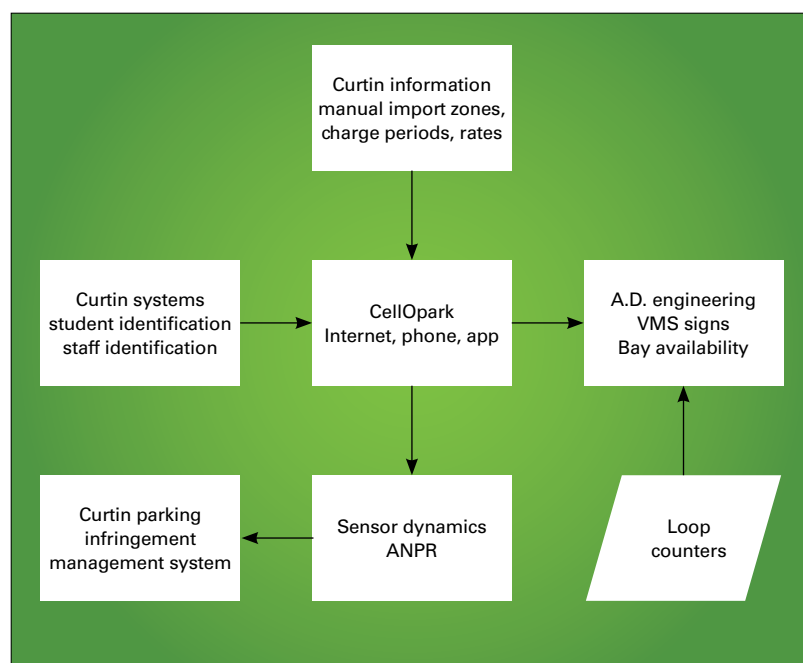
- Students who purchased a permit at year or semester start were not guaranteed a parking bay.
- Part-time students thought permits were very expensive (they paid the same as full-time students).
- Students complained that it took a long time to find a bay and various university departments complained that time was consumed having to deal with this emotional issue.

Goals

The aim of introducing PAYG parking was to make parking more equitable to all motorists who attend the university and eliminate the common misconception of "I have bought a permit, therefore I must be provided with a

parking space." One of the goals of the PAYG parking solution was to improve bay availability. The notion was that when motorists pay for the actual time parked, they become conscious of costs and don't leave their car parked on campus for the day. This encouraged bay turnover.

Before implementing the change, parking was the





lowest ranked by students of all university services. With the introduction of the smarter parking solution, student satisfaction with parking has risen from 32 to 42 percent—the highest it has ever been. The change is also evidenced by the uptake of 19,000 users in the first year and the lack of complaints about fee structures and bay availability. In addition, 97 percent of students now pay less for parking than they had previously. All of the strategic and operational objectives were met. The project solution was 70 percent cheaper than the original budget for a project that provided an old-fashioned outcome.

Implementation

The smarter parking project commenced with the assembly of a multi-disciplinary project team to examine the business requirements and determine a strategic brief. An expressions-of-interest process was held to allow suppliers to demonstrate their offerings, where it became clear that there was no parking payment hardware able to read student and staff ID cards, determine the appropriate charge, and charge different rates for different classes of user.

A meeting at a Parking Australia networking function created an opportunity for one of the vendors to demonstrate his smartphone solution. At this time, it was apparent that smartphone solutions were geared toward local government parking, which did not demand fee and user differentials. The team realized a partnership was required to customize available smartphone technology to address all of Curtin's needs.

A tender process was implemented for a pay-by-phone solution that specified the provider must supply integrated, multi-device technology. The solution—provided by CellOPark Australia—has been operating smoothly for 18 months. The technology was customized to suit the specific needs of a university without compromising its ability to be used in other situations. The solution combines three formerly disparate technologies to deliver a unique, contemporary parking solution that is easy to use and administer:

1. Input from student and staff information systems is used to validate the type of user, which is then used to determine tariff.
2. Bay-finding signage systems receive data from the PAYG system, count the number of parking bays available, and display this information in high-visibility locations.



New technology implemented at Curtin University, Perth, Australia, helps drivers find parking faster and has improved student satisfaction with parking overall.

3. An automatic number plate recognition (ANPR) system that receives data from the PAYG system to automate enforcement was deployed. ANPR cameras are mounted on the back of patrol vehicles, and the system alerts the officer to noncompliant vehicles. This component is provided by Sensor Dynamics.

Work to implement the new system was undertaken during the summer break, so there was no inconvenience for users.

How it Works

Innovation and creativity led to a unique solution that includes technology enabling motorists to pay in real time for parking while it offers different access options, including pay-by-phone, pay online, and pay-by-app.

Once registered, a student simply starts and stops his parking session with his phone.

The ANPR system reads registration plates on vehicles, checks with the database for payment, and instantly alerts the enforcement officer of noncompliant vehicles.

The smartphone solution saved Curtin in the order of \$1 million in capital expenditure on meters, as well as an estimated additional \$300,000 per annum in operating costs that would have been incurred with the installation of new and additional meters on campus.

The flexibility to choose the better transport mode on a daily basis encourages use of public transport and other means of commuting to campus. This is a more sustainable model than those based only on meters.

Bay-finding signage reduces congestion, and time spent hunting for available spaces.

Challenge and Benefits

The major challenge to overcome was long-standing parking habits that needed to change. Motorists used a legacy system based on paper permits for many years. The project involved changing to an entirely new concept of paying by technology, in which motorists have to pay for the parking they actually use. The smarter parking solution replaced a tradition. It was not merged or phased-in because such an approach would have retained the disadvantages of the permit system.

The parking experience at Curtin University improved in a variety of ways and now offers the following advantages:

- Easy to use and simple for students to access and control anytime, anywhere.
- A fairer and more equitable system. Students only pay for the time they choose to park on campus.
- Financial savings. Students who only come to campus part of the time don't subsidize parking for full-time students (this benefit affects most students, as even full-time enrollments are generally not on campus all day, every day).

- Students can decide on a daily basis if they want to walk, ride, catch public transport, car share, or drive their own vehicles depending on their individual needs. The archaic permit system locked users into paying for parking on a semester basis, regardless of their individual needs. Now, they only pay for the hours they actually park on campus.
- The prominent bay-finding signage flashing the number of available bays reduces frustration and wasted time for students, with the added benefit of pollution savings as users don't need to continuously circle around on the hunt for a bay.
- Enables carpooling and cost-sharing.
- Increases the turnover of bays and likelihood of drivers finding a bay.
- Eliminates the need to introduce arbitrary, inequitable, and potentially expensive methods of reducing demand for parking.
- Reduces exposure to fines while making enforcement operationally simple with the ANPR system.
- Improves safety by removing the need for cash in parking facilities.

The university expects that students will continue to benefit from the flexible and fair parking technology as described into the future.

The university also gains from the advancement, both from a financial and reputational perspective. First, Curtin would have required about 100 meters to service the 3,744 bays available for students. Meters are expensive to install and require significant maintenance to stay operational. The new system would cost less than the additional operating costs of a traditional meter solution. Another financial advantage is that the increased availability of parking stock will result in deferred capital investment in car parking.

Delivering a contemporary parking solution protects and enhances the university's reputation.

Lastly, the flexibility to choose on a day-by-day basis about the best transport mode will encourage use of public transport and other alternative means of commuting to campus. This is a more sustainable model that offers environmental benefits and helps the state government planning commission, which seeks our cooperation to reduce peak traffic volumes.

Going Forward

Following the success at Curtin University, the smarter parking solution has already been deployed in other campuses around Australia with many more looking at giving the benefits and convenience of this solution to their motoring public.



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