Saving money and reducing emissions in Milton Keynes using smart parking

Saving money and reducing emissions in Milton Keynes using smart parking

As one of the fastest growing cities in the UK, Milton Keynes has to support increasing numbers of visitors, residents and businesses, and meet spending and carbon reduction targets. Milton Keynes council joined forces with The Open University, BT and other partners to form MK:Smart. The aim? To overcome the challenges and turn Milton Keynes into a truly smart city.

"Overall the MK:Smart initiative could result in up to 50 per cent less traffic congestion and reduced fuel use and vehicle emissions. Smart parking will contribute significantly to that latter area."

Geoff Snelson,
Director of Strategy
Milton Keynes Council

The challenge

There are around 25,000 parking spaces in Milton Keynes. But forecasts suggest that another 12,000 may be needed by 2020. "If we don't act soon, parking in Milton Keynes will become a big problem," says Brian Matthews, head of transport at Milton Keynes Council, "But we know that around 7,000 existing spaces are empty at any one time and in some cases, this is because people don't know where to find them."

Key to solving Milton Keynes' parking problems was the need to identify free spaces and send information to roadside displays and smartphone apps. This could guide vehicles towards available parking and make the most of existing infrastructure. Not only would it avoid the costs associated with creating new spaces, but also reduce fuel use and emissions from vehicles driving around in search of spaces.

The solution

As part of a pilot at Milton Keynes railway station, BT worked with specialist technology provider Deteq to install sensors in each short-term parking bay. Bonded to the tarmac, they're powered by lithium-ion batteries which last over four years.

The sensors detect when a vehicle arrives and leaves, then send the information wirelessly to solar powered receiving units mounted to lampposts. These aggregate the data and send it to the MK Data Hub, hosted by BT. The data is analysed processed and the results are made available on the Milton Keynes Council public information dashboard, as well as via a browser that displays red (occupied) or green (free) bays on top of imagery from Google maps.

Brian Matthews explains, "As well as giving real time data on parking availability, the sensors are providing us with valuable information about average parking duration. We can use that to adjust parking restrictions to meet the majority of customer needs." For example, the sensors revealed that an average stay in the station drop-off zone is 16 minutes, so the council could adjust the wait limit to 20 minutes. In future, the system could also be used to aid parking enforcement.

The result

With more of their existing parking spaces in use Milton Keynes Council are set to save a substantial sum. "It costs around £15,000 to create a new parking bay," says Brian Matthews. "If we built new ones when there are 7,000 unused we could be wasting truly significant amounts of money." Using MK Data Hub analysis to understand how factors such as weather and proximity to offices and shops influence parking habits will also have an impact. This data could be used to inform things like duration and charge bands for parking in different areas.

Case study profile
Milton Keynes Council
UK

Challenge
Make the most of technology to help cater for Milton Keynes' increasing growth and parking needs, while ensuring existing spaces aren't going to waste.

Solution
Parking bay sensors, combined with wireless technology and BT data hosting, gives Milton Keynes a full view of its available parking, helping direct vehicles to free spaces.

Following a successful pilot, the council plans to extend the parking sensor network with another 250 sensors covering a section of the city. "It wouldn't be cost effective to deploy sensors in all 25,000 parking bays, so we're using this next phase to refine the deployment plan by assessing sample-based approaches," explains Brian Matthews. One possible option is to validate whether sensors installed in one in five parking bays will provide statistically-valid data on parking availability.

And MK:Smart's work doesn't stop there either. BT is involved in other parts of the programme like smart lighting, where sensors will relay visibility data so street lighting can be remotely dimmed or brightened. The project could see energy savings of up to 60 per cent and maintenance cost reductions of up to 40 per cent.

BT