Technology in the Parking industry
INTRODUCTION

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The use of technology within the parking industry across the UK has become increasingly widespread over recent years, as parking professionals attempt to improve operational efficiency as a result of pressure to cut costs in the current economic climate.

Evidence suggests that savings can be made by providing alternative payment options for customers, such as cashless parking schemes, and providing the parking workforce with more sophisticated equipment; for example, civil enforcement officers show higher levels of performance when they have access to wireless hand-held devises, automatic number plate recognition (ANPR) and real-time incident reporting.

This technological change is expected to contribute to the development of more flexible and convenient parking services, raising public perceptions and expectations of the industry, whilst driving parking employer demand for the specialist skills to install, use and maintain equipment.

This paper examines the role technology plays in the UK parking industry and examines a number of key issues, such as; the current and future trends in parking technology, how these trends compare with parking industries in other parts of the world and the skills implications for the UK parking workforce.

1 British Parking Association, More for less – more or less, April 2011
2 Inter traffic World, Hot tech, 2011
3 British Parking Association, 2011 Workforce Survey Update, July 2011
4 British Parking Association, 2011 Workforce Survey Update, July 2011
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WHAT ARE THE CURRENT TECHNOLOGY TRENDS IN THE UK PARKING INDUSTRY?

Research indicates that current trends for parking technology in the UK revolve around the concept of technology convergence where a group of technologies, such as TVs, computers and phone, are utilised to perform similar functions during the provision of services. From a customer service perspective, there are three main examples of parking technology trends, including:

**Cashless Payment** - Over recent years the number of pay and display machines in the UK has significantly decreased due to the shifting trend away from cash parking and towards cashless parking using credit cards, debit cards or mobile phone payments. These are flexible, secure services that allow drivers to make a phone call to pay for parking on their credit or debit cards — these schemes have been so successful in some areas, Westminster for example, that there is no longer a cash option.

However, experts state that pay-by-phone service providers used by car park operators often varies from one area to another forcing drivers to have accounts with several service providers to ensure they can pay to park. This variation occurs because car park operators outsource pay-by-phone services to different service providers. This has increased demand for parking staff with tendering, procurement and contract management skills to ensure that contract standards are monitored and adjusted accordingly. Additionally, parking staff require good interpersonal, communication and customer service skills to advise unfamiliar customers on how to use the cashless payment scheme and resolve any issues they may be experiencing.

**Real-Time Parking Information** - Mobile applications on smartphones are a significant area of growth for the parking industry, with an increasing number of customers relying on apps to get “information on a car park’s precise location, opening hours, tariff and facilities”. Some apps also allow the driver to record the GPS location of their car in a crowded car park, with additional notes and photos, so that when the driver wants to go back to their car the app shows a map indicating the distance and direction of the vehicle.

However, experts argue that the information provided, particularly with regards to tariffs, can be out-of-date. As a result customers can arrive at the car park and pay the wrong fee creating incorrect tickets and overstays which requires front-line staff with good interpersonal, communication and customer service skills to resolve the situation. An increase in management skills amongst key members of staff could improve this service by ensuring that when tariffs are reviewed the real-time parking information databases are contacted and updated with the latest information.

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5 Inter traffic World, Hot Tech, 2011
6 Westminster City Council, What is pay by phone? 2011
7 The AA, Pay-by-Phone, 2009
8 British Parking Association, Functional Map: the parking sector, 2010
9 British Parking Association, A technological revolution is ‘appening, August 2010
10 Parking, Apps, Apps, Everywhere… Even in Parking, May 2011
11 British Parking Association, A technological revolution is ‘appening, August 2010
**Blue Badge Scheme** – Another trend is to update existing parking services with the latest technologies. New blue badges will be available to all local authorities in England, Scotland and Wales in 2012 to improve the administration and enforcement of the blue badge scheme which currently provides 2.5 million people with priority parking.12

The badges rely on a combination of technologies, including; complex printing patterns, a holographic feature, use of security inks available from a restricted list of providers, a central database of all badge holders, raised features and braille, 2D barcodes and a digital photograph.13 These technologies allow civil enforcement officers to carry out checks using desktop PCs, handheld devices or SMART phones. This has increased employer demand for staff with the ability to use computerised equipment, navigate online databases and follow evidence collection procedures to identify as well as prosecute those misusing, copying or forging blue badges.

Parking technology also plays an important role in back office security service provision, particularly in civil parking enforcement and parking management on private land. For example;

**Automatic Number Plate Recognition (ANPR)** - The use ANPR cameras positioned at the entrances and exits of both ‘on the street’ and ‘off the street’ car parks deter drivers from overstaying. These cameras take timed photos of the vehicle (with close ups of the number plate) entering and leaving the car park. These photos are then used to calculate how long a vehicle has been parked.14 If the driver overstays then they pay excess parking charges. ANPR equipment is 99% accurate when reading license plates and is capable of recognising dirty number plates, foreign identification plates and deliberately changed numbers.15

ANPR systems benefit car park operators by providing them with the opportunity to use photographic evidence for ticket disputes, resolving the problem of lost tickets (as photos can be used to establish when someone arrived) and ensure spaces are more frequently available, as drivers realise they cannot get away with overstaying.16

To get the most out of these systems employees require the technical skills to maintain media libraries and preserve potential evidence, as well as knowledge of parking regulations relating to penalties, requests to view evidence and appeals. This process also requires staff with good interpersonal, communication and customer service skills to resolve conflicts that can arise as a result of these processes.

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12 Department for Transport, The blue badge scheme local authority guidance (England), June 2011
13 Guardian, Blue badge applications go on DirectGov, June 2011
14 British Parking Association, Automated Number Plate Recognition (ANPR), 2010
15 Inter traffic World, Hot Tech, 2011
16 British Parking Association, Twenty-twenty in, March 2010
WHAT ARE THE FUTURE TECHNOLOGY TRENDS IN THE UK PARKING INDUSTRY?

In the future, the integration of parking with other forms of activity is expected to be a popular trend, for instance; being sold a parking space with a theatre ticket.17

Furthermore, experts predict that near field communication (NFC) technology has the potential to replace coins, tickets and phone calls as the parking payment solution of the future in the UK. NFC is a small chip embedded in a mobile phone or a plastic card with short range (1 to 2 inches) wireless connectivity that enables quick, secure financial transactions when the NFC enabled phone or card is placed on a reader device – the most well-known examples of this technology are the London Oyster card and the Barclay’s debit card.18

An NFC system could benefit car park operators by minimising the amount of cash they are required to manage (as a customer would simply have to tap their phone against the machine to pay for parking), reducing the risk of theft and improving communication with customers. For example, text messaging could be used to inform drivers that a particular car park is full or to remind them that their parking is about to expire.19

The move towards using NFC enabled phones to pay from everything from car parking to groceries is being considered in the UK because of its success in Japan and Korea. Trials have been held in London to examine public opinion of using phones to make cashless payments and experts argue that NFC has the potential to be used as a payment option at the London 2012 Olympic Games.20

According to the latest British Parking Association (BPA) workforce survey, 8.7% of respondents expect technological change, like NFC, to result in wider skills demand over the next 5 years, as high tech solutions to parking issues require different skills.

Table 1 indicates that both public and private sector respondents already recognise IT as a significant skills gap within their organisation, emphasising the need for training and development in this area. Experts argue that high speed communication technology has also created the need for increased flexibility, as well as effective management and organisational skills, to ensure rapid responses to incidents.21

17 Inter traffic World, Hot Tech, 2011
18 British Parking Association, Making contact, June 2010
19 British Parking Association, Making contact, June 2010
20 BBC, Payments at the wave of a mobile, October 2010
HOW DO TECHNOLOGY TRENDS IN THE UK PARKING INDUSTRY DIFFER FROM OTHER PARTS OF THE WORLD?

Evidence suggests that parking is a significant issue around the world, requiring parking professionals to rely on a range of technologies depending on the challenges they face.

In Australia, Government investment in parking infrastructure, combined with fewer negative effects from the economic crisis has resulted in more car park operators looking to upgrade their parking technology or implement pay parking compared to the US and UK.

The most notable parking technology trend in Australia is the introduction of pay parking at shopping areas to discourage staff or commuters from using the car parks. Whilst the majority of pay parking requires cash, pay-by-phone is becoming more popular and pay-by-plate is being trialled in Brisbane.

Future technology trends in Australia are expected to include the widespread use of ANPR similar to current trends in the UK, and the increased popularity of online parking reservation systems. However, experts argue that the imposition of Government taxes and levies on parking spaces in Perth (A$586 per bay per annum), Melbourne and Sydney (A$2,000 per bay per annum) will have a negative impact on car park operators in the future, limiting the technologies they can afford as fewer customers are willing to pay the price of parking.

Parking technology trends in the US are similar to those seen in the UK and are driven by the need to provide convenient services for customers to ensure profitability during tough economic conditions.

Recent research by the International Parking Institute (IPI) has highlighted a strong trend towards cashless payment systems with 27% of US parking professionals anticipating the increased use of mobile phones to reserve or pay for parking, while 32% of US parking professionals expected an increase in the use of credit or debit card payments. The increasing use of credit and debit card payments will require parking staff with the skills to install and maintain parking meters, whilst using problem solving skills to identify any faulty components and repair skills to replace them. The IPI survey highlighted that the most common problem relating to parking technology was that staff did not understand how to install and use it effectively.

Furthermore, the US Government like Australia, are placing increasing pressure on car park operators to raise fees for customers at a time when there is lower demand and lower revenue at parking locations. This has been caused by the global decline in employment as well as consumer spending, reducing the likelihood that car park operators will have the spare cash to upgrade their existing technology.

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22 Inter traffic World, Hot tech, 2011
23 Imperial Parking Corporation, Technology’s evolving role in the parking industry, 2010
24 International Parking Institute, 2011 Emerging Trends in Parking, January 2011
25 City of Madison, Parking equipment mechanic, 2009
26 Inter traffic World, Hot tech, 2011
In contrast, the parking industry in Tokyo\textsuperscript{27} has sufficient capacity to meet moderate customer demand and therefore does not have to rely on technological advances like in the US, UK and Australia. Instead a combination of reliable public transport and effective parking management systems (policies and programs used to promote the efficient use of parking resources) have contributed to low levels of car ownership and the tendency to only use private cars at weekends.

The most effective element of the parking management system is the Japanese Garage Law which requires individuals to provide a parking certificate to prove there is private parking available when they register a car; ensuring that they have an alternative to parking on the road or in public parking. Experts argue that a failure to communicate the importance of parking management in UK towns and cities has resulted in negative public perceptions of the parking industry and an increase in congestion.\textsuperscript{28}

HOW WILL ADVANCES IN TECHNOLOGY AFFECT THE UK PARKING WORKFORCE?

Technology is fundamentally affecting the demand for skills in the parking industry, placing increasing pressure on employers to understand the benefits of new parking technologies to ensure that their workforce develops the requisite skills.\textsuperscript{29} These include:\textsuperscript{30}

- **The ability to use, or learn to use, computerised equipment** – are essential for parking staff as emerging and converging technologies redefine parking industry occupations by enabling better communication, efficiency and enforcement.

- **The ability to recognise damaged or faulty car park equipment and maintenance skills** – ensures that equipment can be repaired or replaced to prevent loss of revenue or risk to public health and safety.

- **Tendering, procurement and contract management skills** – ensure that employees are able to monitor contract standards and adjust accordingly when services are outsourced.

- **Management and leadership skills** – to effectively implement working practices that ensure the workforce remains motivated.

Whilst some parking employers suggest that technology offers the industry the opportunity to focus on customer service, increasing demand for staff with good interpersonal and communication skills, 8.2\% of BPA survey respondents thought that technological change would result in fewer staff over the next 5 years – particularly in the case of front-line staff, such as civil enforcement officers.\textsuperscript{31}

| Table 1: Skills lacking within the existing workforce |
|----------------|--------|--------|--------|
| Skills           | All    | Public Sector | Private Sector |
| IT – Technical Support | 5.8\%  | 6.3\%          | 5.4\%          |
| IT – General Skills   | 13.3\% | 9.4\%          | 17.9\%         |

(Source: British Parking Association, 2011 Workforce Survey Update, July 2011)

\textsuperscript{27} British Parking Association, Technology is big in Japan, May 2011
\textsuperscript{28} Inter traffic World, Hot tech, 2011
\textsuperscript{29} British Parking Association, 2011 Workforce Survey Update, July 2011
\textsuperscript{30} Directgov, Civil Enforcement Officer – All Information, 2010
\textsuperscript{31} British Parking Association, 2011 Workforce Survey Update, July 2011
CONCLUSIONS:

• As technology continues to converge within the parking industry there is increasing employer demand for staff with knowledge of Government parking legislation, the ability to use computerised equipment and the ability to navigate or maintain online databases.

• Some parking employers suggest that technological advancements are offering the industry the opportunity to focus on customer service, increasing demand for staff with good interpersonal and communication skills.

• 8.2% of BPA survey respondents thought that technological change would result in fewer staff over the next 5 years – particularly in the case of front-line staff such as civil enforcement officers.32

• Technology is fundamentally affecting the demand for skills in the UK parking industry, placing increasing pressure on employers to understand the benefits of new parking technology.

• Research indicates that both the US and UK are experiencing strong shifts in parking technology trends towards cashless payment systems, such as pay-by-phone and credit/debit card payments, that provide a more convenient service for customers to maintain profitability during tough economic conditions.

• The latest British Parking Association (BPA) workforce survey shows that 8.7% of respondents expected technological change to result in wider skills demand over the next five years – these skills include: IT skills, installation skills, maintenance skills and the ability to recognise damaged or faulty equipment.

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This Parking Practice Note is jointly produced by the British Parking Association (BPA) and Asset Skills. Asset Skills is the Sector Skills Council for facilities management, housing, property, planning, cleaning and parking. They work with business, public and professional bodies and learning providers to ensure the training employers need is available to meet their current and future skills requirements.

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