

OPTIMIZING THE PARKING EXPERIENCE: THE BENEFITS OF IMPLEMENTING A PARKING GUIDANCE SYSTEM

Parking is boring.

“I want to spend more time looking for a spot in a crowded parking lot”, said no one ever.

Time spent looking for a parking spot is time that could be better allocated to more productive work. If you are the owner of a venue with a parking facility, your customers' time would be more meaningfully spent inside your asset rather than circling around it looking for a place to park. An organization that values its customer's time should be optimizing access to parking areas to ensure that when their customers arrive, the parking process is smooth, speedy and painless.

That's the job of a **Parking Guidance System**.

A Parking Guidance System is a unified set of equipment meant to help consumers find parking. Generally, a system will include a combination of digital navigational displays, colour-coded LED lighting systems, and sensors or cameras that feed data into a central processing system accessible

by operators via cloud-based or local dashboards. This system is designed to clearly and easily direct the course of a driver from entry to safely parking in the nearest available parking bay (or the nearest exit on departure) and to quickly enable guests to access their destination inside the venue.

THIS BRIEF WHITE PAPER WILL LOOK AT:

- 1 Why parking guidance?
- 2 What a Parking Guidance System comprises of
- 3 How it works
- 4 How it can be implemented
- 5 A few examples of current applications
- 6 Its immediate and longer-term impacts on Operations, Guest Experience, Urban Planning & Design
- 7 How it improves mobility in the increasingly intelligent smart cities of the future

1 Why Parking Guidance?

As cities get smarter, and the places we congregate in to live, work and play do too, more intelligently designed transportation systems are visible signs of progress. But as is frequently the case with wide-scale, systematic change, it is incremental small changes that add up to make a real difference.

How you park your car is one of those seemingly small acts that can have a big impact and it starts with an understanding of what parking guidance means and why it matters.

In a conventional, low-tech parking facility, drivers are responsible for navigating and finding a spot to park, with the assistance of some signage and perhaps an attendant. The time it takes depends on several factors including time of day, visibility of available spaces, and usually a bit of luck.

Perhaps it is only a few extra minutes of searching, but it can feel much longer. If the parking facility is crowded and the search is extensive, the driver is likely to experience some level of irritation and frustration. This is not an ideal mental state for a consumer who's about to embark on a retail excursion or an important meeting.

Conversely, the experience of a modern, automated Parking Guidance System can set the tone for a more productive state of mind.

Before entering the well-lit parking area, a driver can easily see the number of spots available and which direction to take upon entry on the accessible digital displays. The available parking bays are then indicated with green LED lighting, making them easy to find.

And that's the purpose of a Parking Guidance System. Parking shouldn't be a preoccupation for you or your customers, tenants, guests or VIP users. It should be a smooth, frictionless experience that paves the way for what lies ahead.

2 What is a Parking Guidance System?

A Parking Guidance System is an integrated set of technologies that point to exactly where a driver can leave a vehicle, safely and securely, allowing the driver to maximize their time doing what they came to do. From an operator's point of view, the system provides intelligence on how the parking zone is utilized, and delivers actionable, data-based analytics to inform management's decisions for optimizing operational efficiency.

Let's take a closer look at each part of the system to understand the role each plays in providing a worry-free parking experience for your guests.



3 How does a Parking Guidance System work?

How does a Parking Guidance System work to provide an optimized experience for you as an operator and for your guests as users? By providing real-time knowledge of utilization rates and traffic flows throughout all zones of your parking area, the system allows for an optimized cleaning schedule, improved security and a more efficient, streamlined and profitable operation.

Technology and equipment integrated in a system designed for your space and needs

The component parts of a Parking Guidance System will include some or all of the following, depending on the specific needs of the operation:

- Camera Counting Solutions
- Dynamic Digital Signage
- Ultrasonic Sensors and Camera-based Detection for Zone or Single Space Detection
- Multi-Colour LED Lighting Options
- Integrated Payment Systems
- Cloud or standalone interactive dashboard reporting on real time data providing actionable, shareable reports and analysis on your KPIs

There is a compatible parking guidance solution for any type of parking lot (new build or upgrade to an existing asset, surface lot, underground or deck parkade), with an appropriate, cost-effective technical solution.

Each component is described below with a brief explanation of the role it plays.

Camera Counting Solutions

Cameras capture vehicles entering and exiting a lot or area entrance or exit. The vehicle is counted in or out of an area and in turn, the system displays available spaces to LED display boards. Additionally, operators can integrate License Plate Recognition (LPR) technology to provide the user/operator with additional data.

Dynamic Digital Signage

Digital signage communicates availability of parking (lot full/number of spots) to potential parkers prior to entry. It also provides navigation using directional arrows, numerical data and entry/no entry signs at different area entry points, allowing the driver to simply follow the guidance to the nearest available parking bay.

Ultrasonic Sensors and Camera-Based Detection for Zone or Single Space Detection

Overhead sensors for interior parking spaces register the parked vehicle. Once the vehicle has entered a designated parking bay, the sensor detects the vehicle and the indicator LED light changes from GREEN, for available, to RED, for occupied. In certain applications where greater zone coverage is desired, or for improved security options, a dual-purpose/LED light unit may be installed to register available parking bays and monitor additional activity within the parking zones. The advantage of integrating camera technology is the ability of one camera to monitor multiple parking bays concurrently and still provide guidance to the area vs. using individual ultrasonic sensors that monitor a single parking bay per sensor and provide guidance to one particular stall. Each of these options provide unique and valuable benefits depending on the needs of your parking area.

Multi-Colour LED Lighting Options

The LED lighting system includes a wide range of colour options to provide specific indicators for mixed usage parking types. For example, colours such as BLUE for mobility challenged users or PURPLE for VIP clients can also be used.

Integrated Payment Systems

Parking Guidance Systems provide data inputs to existing payment systems. Through data collected, the system will provide insights on utilization and length of stay. Data generated is useful to owners/operators who can ascribe a dollar value per lot or per bay based on turnover metrics provided.

Data Collection, Reporting and Analytics

The benefits of adding an additional layer of intelligence to a parking operation are many. In addition to providing immediate insights on usage and traffic peaks, the system operator can quickly leverage the data for efficiency gains, profit maximization and targeted improvements for customers. The data can also be shared with other networks, linking up with citywide mobility networks, to provide drivers with information about available parking and pricing vis-à-vis their destination.

4 How to implement a Parking Guidance System?

There are many options for operators considering an installation of a Parking Guidance System, however, the path to development depends on whether the system will be added onto an existing facility or be included as part of a completely new build.

For existing parking facilities, a site survey is necessary to understand the type of infrastructure required. In greenfield applications, a new

build project would be designed with the required infrastructure included as part of the electrical design.

For surface, exterior parking areas, all that may be required is an updated parking information system providing real-time information via digital signage to indicate which zones have available parking and how many spaces are available. For enclosed, interior parking areas, a fully integrated Parking Guidance System can be implemented, providing information and navigational guidance to drivers.

Pricing will vary based on the size and scope of the system. Upgrading an existing facility can be marginally more expensive depending on the existing infrastructure design and layout.

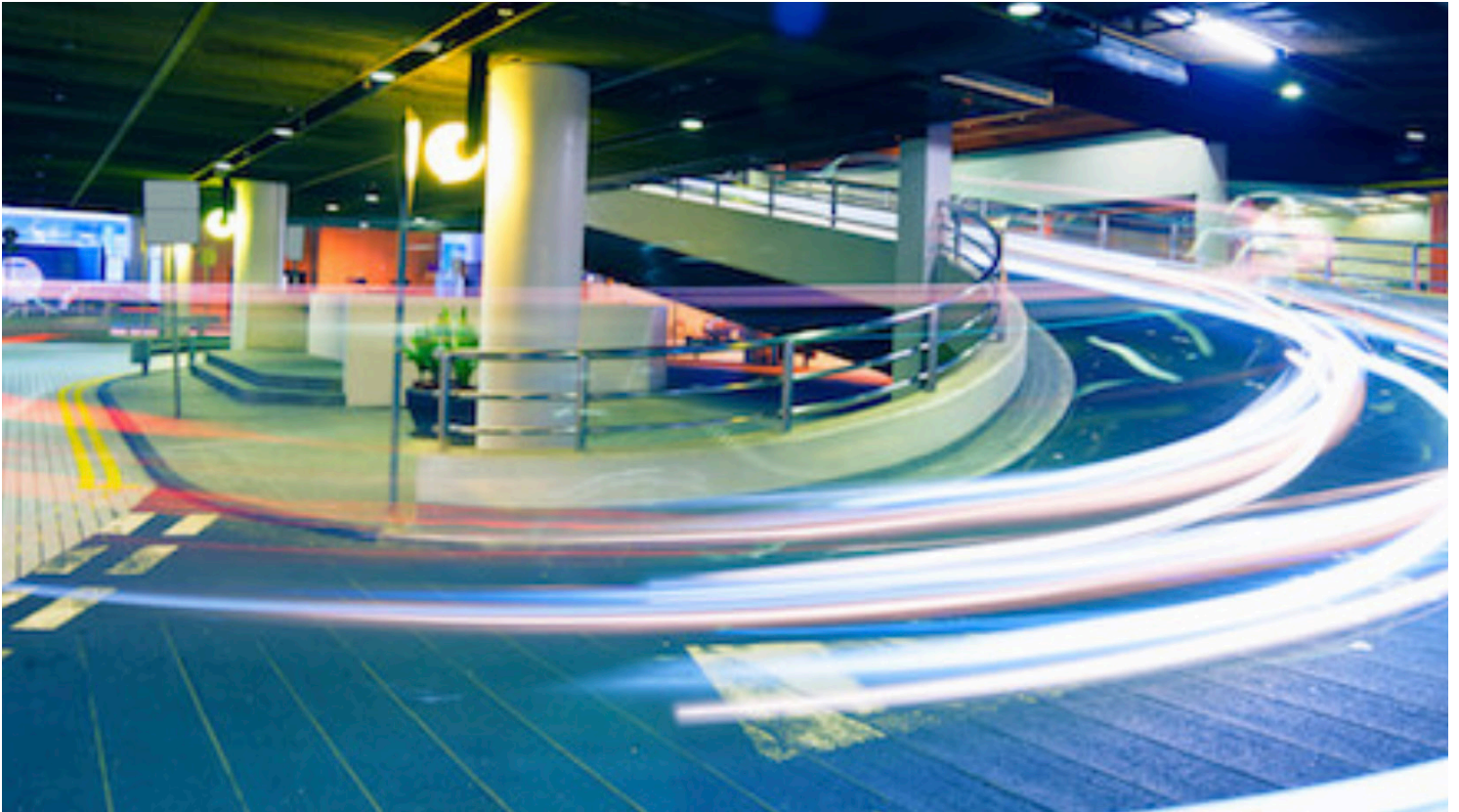
5 How to implement a Parking Guidance System?

A Parking Guidance System is increasingly being seen by operators as a tool that can raise performance, act as a differentiator from competitors and increase revenues.

Airports earn sizeable revenues from parking (second only to gate fees) and see many improvements to the parking experience as a way to gain a competitive advantage. Combined with other tools like reservation applications and License Plate Recognition (LPR), airport operators view their Parking Guidance Systems as a tool for creating and maintaining customer loyalty.¹ By providing their customers (many of whom will be in a hurry to catch a flight) with a quicker flow through the parking facility, airports create real value for passengers.

Casinos and other entertainment venues (stadiums, arenas, amusement parks) are also leveraging Parking Guidance Systems to enhance customer experience and provide the fastest, smoothest

¹The Parking Professional / August 2018, "A Big Boost from Technology", by Bill Smith, APR



passage into the venue where more time spent inside often translates into higher revenues per person.

Retail complexes and shopping malls have been early adopters, again for similar timesaving/revenue maximizing reasons, as well as for providing a better customer experience. At the high end of the market, luxury malls position themselves as being on the cutting edge of retail experiences and seek to enhance that perception through the use of technology and way finding apps inside and beyond the parking lot, which create a sense of seamless transition from one space to the next.

Mixed-use facilities like office towers with combinations of retail, office space and condos are another vertical experiencing uptake in the installation of Parking Guidance Systems. Here, the systems are valuable for how they can be

used to create premium parking experiences for some guests and offer parking reservations and designated zones for key anchor tenants.

Parking Guidance Systems also have the capacity through Application Protocol Interfaces (APIs) to connect with mobile applications and other mobility related networks, allowing for innovative uses of the technology to adapt zones for car and bike share use and designated drop-off zones. This is an advantage that benefits users before they even arrive to a site and also opens up opportunities for additional forms of revenue.

From transportation hubs, hotels, conference centres and more, virtually any organization that requires a parking facility for its guests and visitors can streamline operations and offer a superior guest experience through the implementation of a Parking Guidance System.

6 What is the impact on Operations?

Parking guidance does more than optimize guest experience. It can save your organization money and increase revenues. Here's how:

Higher Utilization Rates = Higher Revenues *Plain and Simple.*

The more spaces your parking area has filled with vehicles parked by happy, paying customers, the better. Making it as easy as possible for clients to locate, access and use available parking spaces is the best method for increasing the utility rate of your parking area, which has a direct impact on profitability and user experience.

There are several ways a Parking Guidance System does this better than alternatives, providing significant benefits to both operators and customers:

Time Savings

The number one gain following the implementation of a Parking Guidance System is a reduction in wasted time. Guests enter, park and exit faster. This increase in throughput means that unoccupied spaces are more rapidly filled, accounting for an overall increase in usage that can range from a 24-50% gain² depending on how much efficiency improvements the system enables. This is a win for both customers and operators, as clients waste less time searching and idling, and owners gain more customer revenues over time as more spaces are occupied with minimal to no down time.

Less Wear and Tear

Reducing time spent searching for parking also means less wear and tear on existing assets (and the vehicles themselves) and fewer maintenance and repair costs, extending the life of the facility. This has a direct impact on the ROI of the operation.

Informs Dynamic Pricing Models

Intelligent systems provide operators with real-time data on usage and demand. Dynamic, demand-based-pricing (DBP) parking can be implemented by operators who wish to match peak demand with pricing, effectively adopting a "surge pricing" akin to Uber's pricing model, if so desired.

Environmental Savings

In tandem with a reduction in wasted time, there is a reduction in congestion and fuel consumption for guests that ultimately provides a gain in terms of lower emissions that benefits both the operator (LEED Certified buildings can use these reduced emissions as part of their total building emissions calculations) and the wider public in terms of less pollution. In an era of carbon taxation with countries scrambling to reduce their emissions any way possible, every incremental gain is significant.

Improved Guest Experience

Not to be overlooked, a client that emerges from a pleasant and efficient parking experience will be in a better frame of mind than one who experienced frustration, time-loss and disorientation. This improved outlook can positively influence behaviours that follow in the environments subsequently accessed such as shopping centres, office buildings, recreational parks, casinos or other entertainment venues.

Better Forecasting and Improved Infrastructure Planning

The trove of information a Parking Guidance System yields generates benefits for both operators and customers. Analysis of the data can help inform future development needs and provide more accurate predictions of revenue for operators to base their future plans on.

²We Are Living in the Age of Parking Guidance <https://canadianparking.ca/we-are-living-in-the-age-of-parking-guidance/>



7 Future trends for Parking Guidance Systems

The core of any Parking Guidance System is intelligence. Data collected from installed sensors and/or cameras provides the raw material to improve the operation of the facility and tie into wider networks through APIs designed to connect with mobile apps and, increasingly, built-in connectivity with vehicles themselves.

While we may still be several years away from widespread use of autonomous vehicles, present trends indicate that connectivity and deeper integration with municipalities to manage traffic flows, reduce congestion and support a diversification of transportation modalities (and environmental objectives) will likely continue

to grow. This is one of the reasons that parking professionals are now increasingly referring to themselves as “mobility professionals”.³

As this integration deepens, we can expect to see more creative uses of the mobility data generated through Parking Guidance Systems. Integrating with mobile applications, self-driving, connected vehicles (or fleets of vehicles) can have positive impacts extending beyond the parking operation and its patrons, out into the broader social context.

Everyone gains when congestion, emissions and aggravation are reduced. Parking Guidance Systems can be an instrumental part of that solution.

³IPMI-2018 Emerging Trends in Parking

WHO WE ARE

A1 Counting Solutions is a people and vehicle counting software solutions provider. Founded in 1994, we were one of the very first to offer advanced, accurate and reliable counting systems. Our counting systems can be found in major shopping centres, big box retailers, casinos and transportation hubs around the world.

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