The Mammoth Impact of Accurate and Consistent Parking Data

Introduction

There's no doubt that data makes the world go round, but it's the quality of the data that determines its usefulness. When it comes to smart parking solutions, only those that are able to collect the highest quality data stand out from the crowd. As this tech brief will show, the collection of high-quality data allows smart parking solutions to provide an accurate picture of parking occupancy and utilization, which can then facilitate a variety of highly desired outcomes for municipalities, universities, and private businesses, including social ROI (which involves bringing internal groups together to have conversations around a common baseline of data), improved parking guidance, increased parking compliance, effective monetization of parking, and better planning.

5 Paramount Characteristics of High-Quality Data:

1) Accuracy
2) Reliability
3) Frequency
4) Timeliness
5) Granularity

What is high-quality data?

The quality of data can be determined by five main characteristics:

1) Accuracy: Is the data as accurate as possible? Are there any factors that are affecting the accuracy of this data?
2) Reliability: Can the data be accessed at any time needed?
3) Frequency: How frequently are the measurements made, and, therefore, how current is the information?
4) Timeliness: What is the delay between the time the measurement is taken and the time it is available to use?
5) Granularity: Do the measurements provide enough detail?

When data collected by a smart parking solution does not meet these requirements, the solution will, unfortunately, fail to achieve the desired outcomes explored below.

5 Results of Utilizing High-Quality Parking Data

Social ROI (A Better Experience)
Well-managed parking based on data-driven policies results in reduced traffic congestion, which, studies show, leads to safer streets, lower greenhouse gases, better parking experience, and many other benefits for drivers and residents. This can increase trust in decision-makers – and even between key stakeholders like city councils and business associations. Since policy makers can support their decisions with data, they are able to have productive and extremely credible conversations about why decisions are being made, as well as being clear as to the effect the decisions will have on business owners or residents.

In particular, this data could work in business owners' favor, as it would allow them to have access to data that details the busiest times of day for their businesses. This could help them make more productive decisions around marketing or business planning.

Improved Parking Guidance

When it comes to parking guidance, it is imperative to have timely, accurate data that drivers can trust to direct them toward available parking spots. Whether data is supporting a series of wayfinding signs or a navigation mobile app, frequent inaccuracies in parking data or intermittent downtime can lead to drivers becoming frustrated with and losing trust in a smart parking system.

Efficient parking guidance, supported by effective data, has a wide range of positive effects, including 30% reduced traffic congestion, reduced vehicle miles travelled (and therefore reduced greenhouse gases), improved safety, an overall better experience for vehicle owners and operators, and can lead to full parking occupancy (which is counted as 85% full and above). As a result, it is integral that the parking guidance system relies on accurate, timely data that provides a clear picture of in-the-moment parking availability to reap all these benefits.

Parking wayfinding signage

Increased Parking Payment Compliance

One of the most important functions of a smart parking system is its ability to monitor and track how often drivers are paying for parking. Currently, parking compliance hovers at around 50%, but accurate, reliable data can be used to understand where payment compliance is lowest and inform the development of a plan to increase compliance.

For instance, when analyzing parking compliance data, length of stay is an important metric to consider. There will often be low payment compliance in more popular spots that are being used for short-term parking. As a result, not only can parking enforcement use this data to better prioritize where to send their resources, the municipality could create better signage around paid parking, change the policy for those spaces, or make paying for parking easier by offering payment via a mobile app or providing more payment stations. Overall, these actions will lead to a steady increase in profits – all based on the data provided by a smart parking solution.

Effective Parking Monetization

According to internationally renowned parking expert Donald Shoup: "The problems with conventional parking meters are myriad. Nevertheless, two advanced technologies, multispace parking meters and curb-space occupancy sensors, can make it much easier for users to pay for curb parking, and for cities to adjust prices to meet the demand." For municipalities looking to shift existing parking assets from a free model to a paid model, it's imperative to have a clear

understanding of how parking assets are being used in order to make informed decisions regarding this important change.

Previously, best practice has been to engage a parking study to evaluate parking utilization, but these studies only provide information at a certain point in time, as opposed to a smart parking solution which monitors and processes parking data 24/7, 365 days per year. This means that decisionmakers can rely on the parking data supplied by smart parking solutions to be as accurate and reliable as possible, over a long period of time, thereby best preparing them to make choices regarding where, when, and by how much parking fees will increase.

For example, data from a smart parking solution can help key stakeholders understand which areas are busiest (or least busy) and at which times and may therefore choose to increase rates in high-demand locations, at specific times, or on certain days of the week. Without the high-quality data supplied by a smart parking solution, decision making around parking assets is less grounded in irrefutable data.

Better Planning

The high-quality data collected by smart parking solutions helps guide planning around the creation of new parking assets as well as the optimization of current parking stalls. For example, high-quality parking data might guide a municipality away from building an extremely expensive new parking garage in a downtown location and toward increased usage around currently, underutilized parking assets. With the 2023 industry average for building a parking garage currently sitting at $40,000USD per stall, this accurate, reliable data could save the municipality a lot of money and prevent building something in the downtown core that may not be needed.
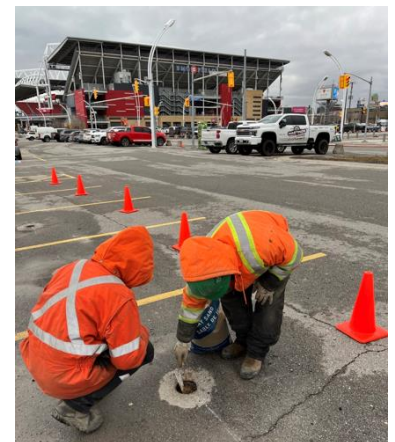
In addition to avoiding costly mistakes, the municipality can use the parking data to identify how best to navigate the issues specific to their community. Allocating policies to the curbside is not easy considering the many types of stalls like paid, unpaid, EV charging stations, ADA spaces, delivery zones, short-term parking, and residential permitted spaces. Determining how much to charge for parking and when to charge (times of day and days of the week) is challenging and is a sensitive topic within the community. High-quality data can provide insights to help drive better planning and decision making as well as provide more information to share with the community when explaining the reasoning behind the policies.

Data That Supports Consultants

Put simply, the consistent data collected by a smart parking system provides better insight into how parking assets are working than intermittent parking studies that may or may not tell the whole story. However, it's important to note that having access to the data provided by a smart parking solution doesn't preclude the necessity of consultants. Rather, this data can better serve their purpose by allowing them to provide even more accurate and clearer assessments and recommendations for their clients. For example, this consistent, long term data can support a

City's efforts toward building a 5 year strategic parking plan. Therefore, the valuable work done by parking industry consultants can go hand in hand with data collected by a smart parking solution, and lead to an even better outcome for everyone involved.

eXactpark™: The Highest Quality Data Means a Better Experience for All

High-quality data is the bedrock of any effective smart parking system, and with 99.5% accuracy in all environments and weather conditions, eleven-x's sensor-based smart parking system, eXactpark, provides industry-leading data capabilities. Whether the goal is more efficient urban planning, improved social ROI and relationships, better parking guidance, increased parking payment compliance, or effective monetization of parking, eXactpark collects accurate, reliable, detailed data 24/7, 365 days a year.

Click here to learn more about eXactpark or read our case studies here.

About eleven-x Inc.
eleven-x is an industry leading IoT and Smart City technology company specializing in accurate, real-time stall occupancy monitoring. Its award-winning, smart parking technology solution, eXactpark™, is comprised of the patented, wireless SPS-X space occupancy sensor and a comprehensive software platform that provides real-time stall data. eXactpark reduces traffic, improves safety, and lowers GHG emissions by helping drivers quickly and easily find parking. The solution is being utilized by cities and institutions across North America to successfully address mobility challenges. eXactpark's accurate and reliable 24/7 data enables numerous use cases including curbside management, demand-based pricing, and compliance, helping optimize parking resources. Customers rely on the company's world-renowned expertise for an easy-to-use, fully scalable smart solution to deliver better services.

Visit eleven-x.com for more information.