

Would You Like Data with That?

By Cristina Lynn

Everybody's talking about data, but what does the word really mean, and how can parking and transportation make the most of it?

“DATA” HAS BECOME ONE OF THOSE WORDS that has acquired a range of new definitions, but it has existed for decades (late 1940s, in fact). Type the word into Google and you get 1.74 billion results. Does anybody remember data processing? That thing computers did when you inserted a series of bits of information and out came the result? If you do, the concept of GIGO would also be familiar: garbage in—garbage out.

Nowadays we talk about big data, data mining, raw data, and real-time data as if they were 21st century discoveries. Moreover, we think of data as an optional side dish (like french fries at McDonald's) rather than every business person's main meal!

What does this have to do with parking you might ask? Well, it has everything to do with parking. Similar to the goals of the the hotel, entertainment, and airline businesses (to name a few), the parking business entails selling as many spaces a day as many times as possible for the best price.

The grocer around the corner knows that every fruit and vegetable he or she does not sell today has to be thrown out tomorrow and, therefore, as it gets closer to closing time, he or she might drop the price to encourage budget-conscious customers to purchase them. At this point of the day, any revenue is better than none.

Similarly, a vacant car space at any time of the day represents a lost revenue opportunity. How does a car park owner manage this and know if he or she is achieving his or her business objectives? That's the role of data.

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What Is Parking Data?

Car parking data encompass a wide range of information ranging from the number of cars spending a specific period of time in a car park (length of stay by time band), to the number of transactions by type of parker (casual, permanent, early bird), to revenues generated. This can refer to an hour, a day, a week, a month, or a year and can be compared to prior periods to analyze trends and set budgets for future periods, just to name a few examples.

Car park data also include information about how the car park is occupied throughout each 24-hour day and each day of the week. Some car parks are busier during weekdays, others during evenings and weekends. Seasonal effects and external factors may also affect occupancy. Knowing these trends across a period of time allows a prudent owner to evaluate, for example, the pricing strategies that need to be applied to ensure as many spaces are sold as possible for the best overall return and to prepare realistic forecasts.

Market forces (demand and supply) will determine the ideal balance which, according to “Shoupian theory,” used to sit around 85 percent. Thanks to technology and improved design, car park occupancy could be expected to consistently reach 95 percent.

It is not sufficient to analyze car park data in isolation; data need to be related to the type of business the car park is supporting—an airport, a shopping center, a hospital, an office building, or a university.

An airport should know the percent of passengers (or PAX) using the car park (usually known as the penetration rate) as opposed to other methods of transport (taxi, train, shuttle bus, drop-off, etc.) and how this percentage changes in time to future-proof its parking requirements. The growing effects of alternative transport options such as Uber is an important factor to consider when looking at the requirement for future car parking and how the precinct design should accommodate this growing transport mode. Other airport-related key performance indicators (KPIs) include, for example, car park revenue per passenger and average transaction value split by short-term parkers (usually picking up or dropping off someone), medium term (business travelers parking for one to three days) and long-term parkers (vacationing families).

A shopping center, on the other hand, needs to analyze its parking demand in a more granular way, examining length of stay (preferably at half-hour intervals) to strike the correct balance between providing a high level of customer service by offering a certain free parking period and the need to discourage abuse of the car park by nearby workers and commuters.

The KPIs for each type of car park need to be identified to ensure the correct information is gathered to measure performance across a range of variables. Large businesses are developing data warehouses that are fed information from various sources (including the car park) in order to assess the overall outcomes.

The Source

So where does all this data come from? Essentially data are gathered by the access control equipment installed in the car park, whereby each time a customer takes a ticket, makes a payment, and exits, the information is stored in the management system. Similarly, every time a tenant uses a swipe card to enter and exit, a transaction is generated. Further transactions are recorded via online booking systems or by the use of loyalty cards issued by the operators.

More information is available from parking guidance systems, which are able to record each time a vehicle uses a specific bay in the car park and for how



long. This level of granular information was unimaginable only a few years ago when it was necessary to use survey staff to manually record information on a spreadsheet (with the consequent risk of human error). Heat maps generated by the PGS system identify areas within a car park that are particularly busy or popular and those that have low levels of use.

Malfunctions in the equipment, as well as alerts to action-specific tasks (e.g., clear ticket jams, replenish change hoppers in the APS machines, etc.) also generate data in the system that track the number of times specific items of equipment break down or need attention. Most interestingly from a revenue perspective is the number of times barriers are raised manually by onsite or remote personnel, which may result in lost revenues.

There is a whole raft of other data that also needs to be collected. Intelligence about nearby competitors regarding pricing and levels of presentation is important to ensure pricing strategies and competitive advantages are identified and maintained over time.

Customer surveys are another key component of data gathering. How often do we make decisions on the basis of what we think customers want without actually bothering to ask them?

These types of soft data need to be collected on a regular basis to identify changes in trends and potential threats appearing on the horizon.

How often does the owner of a commercial building survey its tenants to understand how the demand for parking within the building may be changing? Is there a growing need or demand for other services? Bicycle parking and end-of-trip facilities are now being incorporated into new buildings or retrofitted in existing ones. Are there other alternative uses for unwanted parking spaces? Remember, unused parking bays are like those unsold fruit and vegetables!

Data for the Customer

As far as the customer is concerned, the most important information relates to finding an available parking space in the quickest possible way. It is generally accepted that drivers spend an unreasonable amount of time searching for parking spaces, both on-street and inside car parks. Notwithstanding available technology, it is not usual (except for retail centers) to see a display showing the number of available bays in a



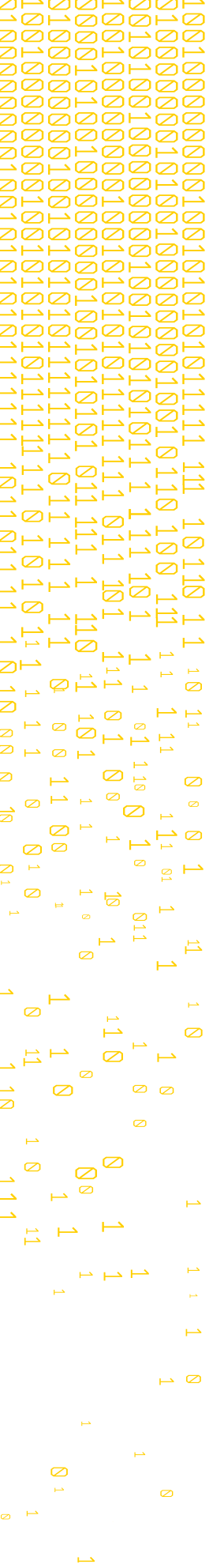
car park prior to entering. Just the other day, I drove into a car park in a busy Sydney, Australia, suburb on a Saturday evening to find that the car in front of me was reversing up the entry ramp after realizing the car park was full. The sign installed outside that should have been illuminated to indicate this information was not turned on.

Even more unusual in Australian cities and town centers is the application of guidance systems that direct drivers to available parking spaces across the range of parking options (whether privately or publicly owned), usually located in the periphery of the center with easy and convenient road access.

Also important for the customer is information about pricing. Casual drive-up parking rates are advertised on operators' websites for various categories (hourly, early bird, evening, weekend, etc.,) and with the widespread use of online booking engines, cheaper parking may be available at specific times and days. It is essential that parking fees are regularly reviewed by the operator and the owner with reference to changes in prices in the surrounding car parks and car park occupancy to ensure that pricing levels are competitive and all opportunities for maximizing use of the car park are seized.

Data for the Owner

It is the car park owner who benefits from having information readily available in the correct format in order to make relevant operational, marketing, financial, and



strategic decisions. Whether the portfolio comprises one or many car parks determines the level of information required.

The owner often relinquishes operation of a car park to an external party, who is then charged with managing the property to the mutual advantage of both parties. If the arrangement involves a management agreement, the operator manages the car park on behalf of the owner for a fee, with the owner being involved (to various degrees) in all main decisions regarding operations, pricing, staffing, technology, marketing initiatives, etc. The management agreement provides the framework for the respective duties of the operator and the owner, including responsibility for the relevant costs with the operator providing monthly reports to the owner containing the relevant data.

Under a lease scenario, the owner generally relinquishes all operational duties and limits himself to collecting an agreed rental each month. Unless a turnover rent component is included in the lease, there is very little data provided by the operator to the owner as the business carried out in the car park is effectively owned by the lessee.

Owners need to take a proactive approach to obtaining and analyzing the car park's performance data, not just at the time when agreements are being renewed or tendered, but throughout the life of the asset. Advances in technology may result in reducing or eliminating onsite staff, with a resulting reduction in operating costs. Changes in the external environment (new or refurbished car parks nearby, changes to public transport or traffic circulation) may have an effect on the car park's performance that could not have been foreseen when the agreement was entered into.

If the reporting requirements have been correctly identified and documented in the agreement, it should be possible for the owner to access and study the information and be in a position to discuss the results with the operator so that appropriate measures can be implemented to maximize the car park's results.

Thanks to a well-thought-through process of reporting and regular meetings, the owner and operator can work together to achieve mutual objectives.



Future Data

As parking access systems develop from hardware to software platforms, the type of data available may change and may affect how it can be verified. Audit trails of transactions generated from other sources such as closed-circuit television cameras or apps, will need to be defined to provide the car park owner with the necessary level of assurance that the revenues are being correctly and fully reported and maximized.

The increasing use of electric cars on our roads will provide an opportunity for car park owners to expand their customer base to these vehicles. The decision of if, and if so, how many charging points to incorporate into the car park, will need to be based on analysis of trends of purchases of electric cars and incentives that may be offered by the public sector to encourage the switch. Other data that will need to be managed include information about how driverless vehicles will affect people's driving (and parking) habits and in what time frame. This also applies to the growing use of transportation network companies (TNCs) and other emerging shared-vehicle options. Owners will need to consider how these changes will affect future car park developments from a design point of view.

As new disruptors challenge our industry, it will be important for owners to measure performance closely


so that appropriate actions can be undertaken both to manage revenues and control expenses.

Data are a means to an end; data are a tool that management uses to make better decisions. We have all heard the expression “paralysis by analysis.” *Forbes* contributor Jeff Boss has this to say: “What, then, do you do in today’s world where there is so much information to navigate? After all, trying to stay up-to-date with the latest viewpoints and updates is akin to the human version of an information hamster wheel: You can run along it all day but never actually arrive anywhere.”

The first step is to define the KPIs that will provide insight into the car park’s business performance as well as its relationship to the business it supports.

The next step is to identify the source of the data needed to calculate those KPIs and how that data are going to be gathered and audited. Is this a task delegated to one or more operators managing various car parks in the owner’s portfolio or will the owner develop his

or her own business intelligence software? The answer to this question requires pros and cons to be clearly identified. Within our ever-changing technological environment there are now tools such as dynamic pricing that allows operational decisions to be made that will affect not just profitability but also maximize efficiency, reduce congestion, and change people’s habits.

Regardless of the outcome, the data (or more importantly, the KPIs) will need to be reviewed on a regular and timely basis, compared against budgets, evaluated against changing market forces, and acted upon as necessary. 



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