

# Introduction

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## Introduction to Parking

Everyone who owns a car knows the importance of the availability, and access to, sufficient parking supply. One UCLA study found that there are between two and six parking spaces available for every car in the U.S.<sup>1</sup> Parking has been and will continue to be recognized as a critical resource, even with advances on the horizon that include greater transportation demand management strategies, the rise of transportation network companies (TNCs), and the development of autonomous vehicles.

## Overview of the Parking Industry

The parking industry is conservatively estimated to be in the range of a \$25 to \$30 billion<sup>2</sup> industry employing more than 1 million parking professionals<sup>3</sup> and with more than 40,000 parking facilities operating within the United States.<sup>4</sup>

The parking industry may be separated into various industry sectors, each with its own unique characteristics, users, and challenges. This list is not comprehensive but is designed to provide a broad perspective on the industry as a whole.

### **Airports**

Typically, revenue generated from the parking facilities represents the second largest revenue generator within an airport, second only to landing fees.<sup>5</sup> One critical characteristic for airport parking is that patrons can quickly find parking and have plenty of time to proceed through security, arrive at the gate, and board their flight. An adequate parking supply with appropriate wayfinding is necessary for any airport.

Airport master planning is based upon the number of annual enplanements—that is, the number of patrons boarding aircrafts. Basing the parking supply on the number of annual enplanements allows an airport to balance the amount of parking supply with the demand.

Many airports have implemented special programs designed to provide enhanced parking services and customer experiences at the airport. Some of these include premium parking services, such as a reserved parking program, offered at additional costs. These include reserved parking close to the terminal at a premium price, frequent-parking areas with private entry and exit lanes and a loyalty-points program, and valet parking. Some airports have joined with local transit agencies to provide transit service directly to the airport, and many provide areas for taxis, shuttle services, and TNCs such as Uber or Lyft.

### ***Hospitals and Major Medical Centers***

Hospital parking services tend to have several customer-specific goals, with the highest priority provided to patients. Hospitals must also provide parking for visitors and employees; frequently, employee parking is restricted to specific areas or provided at remote locations to reserve more convenient parking for patients.

A common challenge is providing parking during shift changes, which normally happen twice a day. Having two shifts of employees onsite at once can create a bottleneck at facilities without careful planning and assignment of parking facilities. Many hospitals allow patients to park without incurring a parking fee. Additionally, hospitals sometimes provide a validation program that provides for reduced or free parking.

### ***Municipalities***

Municipalities must provide parking to ensure convenient, economical, and user-friendly access for customers, commuters, residents, and visitors to the downtown area. This is usually achieved with a mix of on- and off-street parking facilities. Municipal parking goals include providing adequate parking without impeding traffic flow throughout the city and offering efficient parking for patrons of local establishments.

On-street parking spaces are usually restricted and enforced by the amount of time a patron may park, and based on location and intended use of the parking space, this can vary from 10 to 20 minutes up to 10 hours. Enforcement is typically performed by parking enforcement officers (PEOs) who patrol and issue citations for vehicles parked in violation of posted limits. Additional enforcement measures might include booting or towing the vehicles, particularly those that have multiple outstanding violations/citations.

Some cities regulate parking for residents with a residential permitting system. These permitting systems restrict the parking in residential areas, with priority given to the residents.

### ***Retail and Mixed-Use Facilities***

Retail and mixed-use facilities have unique parking requirements. They typically experience high parking turnover as many visitors patronize restaurants, shops, or bars. The mix of parkers includes users of the establishments, employees and staff, and sometimes residents. Establishing rules for employee parking is critical to ensure there's enough parking for the users of the facilities.

Parking convenience is vitally important in mixed-use areas. Therefore, management of these facilities provide flexible parking systems that include a time-based parking fee, valet parking, and validations that offer free or reduced parking to patrons of the establishments. These facilities develop programs to entice patrons to drive to their establishments.

### ***Transit and Multi-Model Facilities***

Transit agencies offer low-cost parking at remote locations where a park-and-ride or transit station facility is located to encourage patrons to leave their vehicles outside the city, to reduce vehicular traffic and congestion. The challenge is to offer this parking at a substantially reduced cost from what parking costs in the downtown core. Sometimes the price of parking is included in the price of riding the bus or train.

Many agencies offer a permitting process in which patrons can sign up and manage their parking accounts over a secure internet link. Additionally, transit agencies can team up with pay-by-cell providers to let patrons use their smartphones to pay for parking. Enforcement requires a high-tech application, usually with a mobile or stationary license plate recognition (LPR) application that captures a vehicle's license plate and verifies that

the vehicle is either a valid permit holder or has paid by phone. Enforcement activity might include the issuance of a warning, issuance of a full citation, or booting or towing the vehicle.

### **Universities and Major Campus Facilities**

Managing university parking can be challenging and requires the ability to balance varying and opposing customer demands. Users are faculty, staff, students, visitors, and strategic partners, who affect the same supply on a daily basis. Organizations try to meet all customer needs through technology solutions, flexible permit types, reservation systems, and even valet services that offer a mix of options, price ranges, and services.

College campuses typically offer a variety of parking options, from large, multi-story parking structures to small surface lots containing 15 to 20z permitted parking spaces. Many campuses offer a variety of parking permit types, all the way from annual and semester permits to a half-day or visitor permit good for a few hours. Enforcement of these programs is generally a large, concerted effort that can be facilitated by real-time computerized permitting systems and the ability to compare that information to a database of valid permits and identify vehicles without valid permits.

Campus development also affects parking revenue sources. On many campuses, surface parking is a placeholder and will eventually be developed. Surface parking tends to be pushed to the outer edge of the campus footprint. As development takes surface parking supply away, organizations must implement more transportation demand management (TDM) policies or build more parking, typically farther away from the central campus.

Universities are major contributors to alternative transportation initiatives that include such items as individual or group bike lockers, bus or transit passes, on-demand vehicle rental programs, and ride share programs such as carpools and vanpools.

Universities are also responsible for the management of game-day or special events that require a substantial amount of parking for a short period of time. University parking management groups must gear up for these major events with special policies and systems designed to support them, as well as extra personnel, equipment, and many detailed pieces of information and equipment.

### **Corporate Campuses**

Many major corporations have developed significant and sprawling campuses. These campuses provide parking for employees and staff primarily through permit programs, and may be at low or no cost to employees. They also must accommodate visitors.

One of the primary challenges for corporate campuses is accommodating an influx of employees during a short window in the morning and then getting everyone out during a short time period in the late afternoon or evening. Parking facilities and associated roadways must be designed to empty quickly and efficiently without adversely affecting or inundating the surrounding roadways. Many larger campuses also offer TDM strategies for employees such as shuttle service to transit and shared-ride programs to encourage carpools and vanpools.

### **Commercial Operations**

Commercial operators represent a large share of the parking market, especially in larger urban centers. There are myriad commercial operators that own, manage, and/or maintain

“There are competing goals between using parking lots as a placeholder of land use for future development. Parking is pushed to the perimeter where land is less expensive.”

Becca White,  
University of Virginia

private parking operations. These entities primarily support urban areas, event centers, and destinations, and even smaller downtowns and universities and institutions. Often, municipalities will contract out to these organizations for third-party management, especially of off-street resources, namely surface and structured parking. These companies comprise a large cross-section of the industry.

### ***Suppliers and Consultants***

A summary of the industry would not be complete without addressing the multitude of suppliers of products and services that support parking owners and operators. These include technology providers of software, hardware, and consulting; planners, architects, engineers, and construction companies that provide infrastructure; and goods and services providers of physical equipment that run the gamut from tickets to meters of all kinds.

### **The Role of the Parking Professional**

Parking is a career that is rarely discussed; college parking degree programs aren't the norm. Most industry professionals did not plan to pursue a career in parking; their journey took them there by chance.

As referenced, there are more than 1 million estimated employees in the parking industry working in municipalities, airports, colleges and universities, hospitals, corporate campuses, hotels, commercial operations, and major event venues. This number doesn't include transportation and mobility professionals who also address parking in the scope of their employment.

Each industry segment mentioned has its own customer base and audience, with its own specific focus, but there are commonalities across all segments. These include parking resources, revenue (and expenses), and customer service and training.

Here are a few differences for consideration:

- Personnel in airport operations are primarily focused on the traveler; efficient and timely communication and access is key. They are also concerned with the speed and process of payment and both ingress and egress of customers.
- Municipality operations and their staff are focused on driving economic development and getting customers downtown. They shape policies that drive parking decisions to create turnover and maximize space use. They may also manage residential parking needs and regulations to balance potentially competing priorities for residential and downtown commuter and visitor parkers.
- Parking professionals working in hospitals balance the demands of medical and other staff with the needs of the patients and their visitors. Staff in this industry segment must understand the customers' needs and the possible stress and emotion generated by any hospital visit, especially in an emergency.
- Colleges and universities host many varying customers, all with differing needs. Faculty park during classes and office hours; staff park for longer periods of time nearly every day; students and visitors are always coming and going; and events bring large numbers of patrons wanting to enter, park, and exit simultaneously. These professionals balance supply, demand, and customer expectations.

### **Skills Sets, Resources, and Aspects of the Profession**

As discussed, industry professionals cover a multitude of issues and play many different roles. Parking operates at the intersection of real estate, technology, logistics, consumer behavior, and transportation.

Degrees in planning, management, economics, finance, or behavioral sciences can provide a solid foundation that will enable a professional to manage a parking operation in these segments. Understanding strategic planning, developing financial forecasts and benefit analyses, and managing and motivating employees are crucial to leadership in these roles.

Planning, engineering, architecture, and design are the specialized (and licensed) practitioners most often associated with industry consultants. These individuals build parking structures and lots, and engineer the best design for ingress and egress, traffic flow, load, visual aesthetics and location. They perform inspections and recommend preventative maintenance or help restore these investments in infrastructure.

A focus on safety, security, and emergency management can be well-adapted into a career as a parking professional. The health, safety, and welfare of all patrons and employees (as well as their vehicles) is of paramount importance in every segment of the industry. Understanding passive and active security as well as best practices in emergency management translate well in this environment.

Specialists in information technology and data are critical to the success and innovation in the industry. As operations increase integration with the connected car, real-time data, and eventually the autonomous vehicle, these skills sets are and will continue to be in extremely high demand. Planning appropriately for the implementation of new technology, and understanding the value of the data parking systems generate, is critical for operational success. As concepts of mobility as a service are innovated, these skills will be of great importance as traditional parking models change.

Sustainability is an increasing priority as mobility patterns change and shift. Transportation demand management and reducing the use of the single-occupancy vehicle is central to sustainability efforts. Professionals with a sustainability or TDM background work to change customer behavior by providing viable transportation options, including carpools, vanpools, mass transit, and bicycles. Additionally, these professionals assist with the planning and implementation of sustainable features into facilities and operations.

Lastly, communication through marketing and branding, public relations, and social media all enhance customer service. Customers have come to expect immediate communication and information about parking resources. These professionals communicate with patrons, interact with the media, and essentially, tell their organization's story.

Every parking and transportation professional touches upon aspects of each of these skills sets in the scope of their career. While it is not expected that any one person develop a specialty in all of these areas, the successful industry professional will be both literate and seek a basic understanding of this wide range of skills.

## Notes

- 1 Shoup, Donald. *The High Cost of Free Parking*, (U.S., Routledge Publishing, 2011).
- 2 <http://blogs.cornell.edu/armapp/2013/03/27/revenue-management-in-car-parking-industry/>.
- 3 2013 U.S. Department of Labor, Bureau of Labor Statistics.
- 4 [www.nrdc.org/experts/david\\_b\\_goldstein/does\\_every\\_car\\_need\\_8\\_parking\\_spaces\\_ride\\_sharing\\_can\\_save\\_emissions](http://www.nrdc.org/experts/david_b_goldstein/does_every_car_need_8_parking_spaces_ride_sharing_can_save_emissions).
- 5 [www.parking.org/2016/01/02/2012-05-08-new-report-highlights-importance-of-parking/](http://www.parking.org/2016/01/02/2012-05-08-new-report-highlights-importance-of-parking/).