



# The unified digital parking office

where parking management is headed

A thought paper from T2 Systems

### About T2 Systems

Since 1994, T2 Systems has delivered proven parking solutions that meet the ever-changing needs of the parking industry. This commitment is evident in T2's quality products and services, thought leadership and strong customer relationships. With its broad range of software, hardware, management services and technology services, T2 Systems is trusted by close to 300 organizations in the US, Canada and Australia including universities, cities, towns, hospitals and airports. T2 Systems is headquartered in Indianapolis, Ind. and has virtual offices throughout the United States and Canada.

For more information on how T2 Systems can help you manage parking more efficiently and effectively, call 800-434-1502 or visit [www.t2systems.com](http://www.t2systems.com).

**“When Solomon said there was a time and a place for everything he had not encountered the problem of parking his automobile.”**

**- Bob Edwards, Author and NPR Radio Broadcaster**

## **FOUR DEGREES OF SEPARATION**

When it comes to managing the complex world of parking, all parking functions are not created equal. While physical parking spaces can be relatively the same, managing a wide variety of parking areas and parkers can be a juggling act. And each one cannot be managed in the same way.

Parking professionals need to be able to differentiate between four different types of parking:

1. Short-Term Open Parking - usually handled by parking meters
2. Short-Term Controlled Parking - usually handled by revenue control
3. Long-Term Controlled Parking - usually handled with access cards and credentials
4. Long-Term Open Parking - usually handled with permits

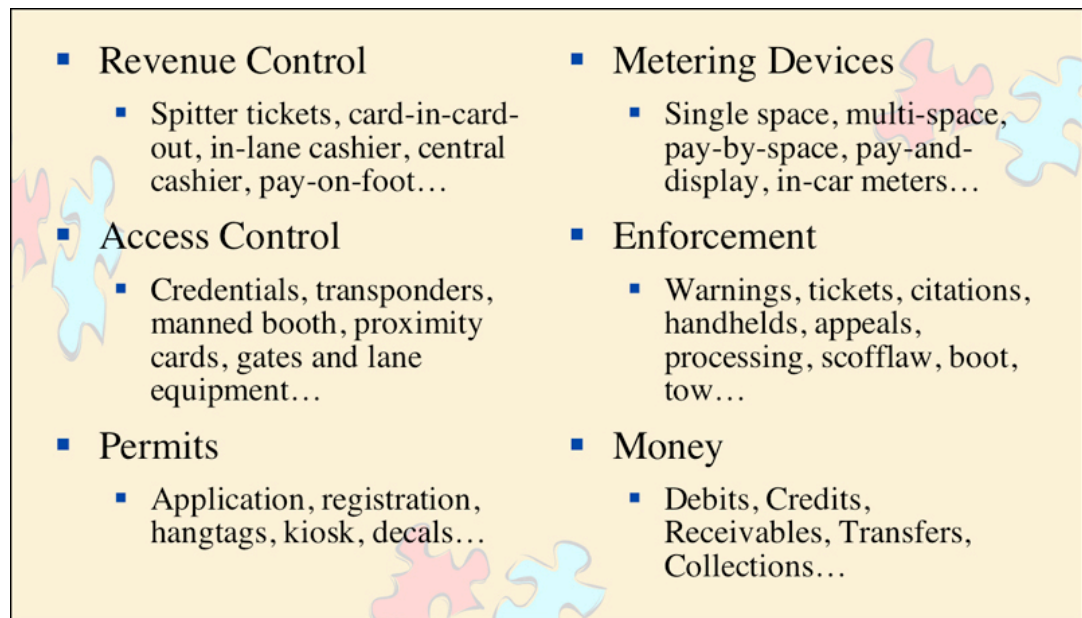
Enforcement of open parking is prevalent across most operations. Multiple parking offences may result in different outcomes, such as tickets, boots, tows and scofflaws, often resulting in revenue generation for the parking office. But even though revenue generation is important to most parking operations, so is customer satisfaction. And no parking office would benefit from separating the two.

The wide variety of parking durations, from minutes to days and weeks, and a wide variety of available spaces, such as on-street, surface, and decks, means the need to implement different solutions for different operations is necessary.

## PARKING'S COMPLEX SUBSYSTEMS

Multiple considerations and approaches for each of the four types of parking make for a complex aggregation of systems and technologies. These systems tend not to work together, yet some systems are naturally sold together. As shown in the chart below, revenue and access control are commonly paired and so are permits and enforcement. Meters tend to be the most disjointed part of an operation because they are less connected to other devices.

Every system recognizes that money is a part of the operation, so finance features are built into each system. Unfortunately in most cases, there is no consistency between financial implementation across systems, and not all systems provide the ability to import or export financials.



Such disjointed approaches to parking systems no longer meet the changing needs and big-picture agendas of cities, universities and other organizations that manage parking operations on a daily basis.

The industry needs unified, comprehensive systems that are flexible enough to be viable today—and forward-thinking enough to be viable well into the future. It seems obvious enough, but a simple solution can be the most difficult to achieve.

## CAN'T THEY ALL JUST GET ALONG?

Many parking systems available on the market today are made to meet the needs of the past and not the needs of today and beyond. Why? Because often times technologies refuse to work together. Some of the reasons technologies can't seem to play nice include:

- Proprietary Technologies – Vendors want to lock their customers into only using their products. Therefore, technologies from multiple vendors aren't compatible with each other.
- Lack of Standardization – There are no established standards for parking data exchange (interoperability) and no common language for communicating between systems.
- Legacy Compatibility – Parking operations demand value from previous investments. Vendors are expected to maintain compatibility with earlier versions of their systems as they move forward, hampering the technology's current functionality.
- Parkers Tolerate Dated Technology – Parkers may complain about antiquated systems in the parking lot, when the issue is in front of them. But as soon as they're out of their cars, they've forgotten about the issue.
- Failure to Innovate – Most parking vendors are not motivated or able to reinvest in new technologies until they have no choice.

Parking professionals are experts in parking; they shouldn't have to be experts in technology too. It's up to the vendors to make technologies work for parking operations, including making systems compatible. How? By building a new type of vendor-user relationship and redefining the industry.

## A VISION OF FUTURE PARKING OPERATIONS

Whether you're a parking management solutions vendor or customer, the vision for the future of parking operations will take compromise and agreement.

Vendors would agree to offer customers unbundled products and services, giving them the option to pick and choose which products they use without having to purchase a complete package. Most importantly, multiple vendors' products would work together to meet the demands of customers. Vendors would embrace common standards, ensuring that solutions from one or more vendors can be created by assembling components, rather than depending on entire systems. In techno-jargon this is called "interoperability" - the ability for separate systems to work together.

In order for this vision to become a reality, parking professionals must be on board as well. By working to define best industry practices, they will be able to help vendors tailor parking technology to better meet their needs. Industry associations already have programs working to define these practices, however, in order to meet the needs of a wider variety of operations, more parking professionals' voices need to be heard.

Additionally, users often have more great ideas than vendors have the time and resources to implement. By working together, both parties can define and prioritize innovative parking solutions that benefit each of them. It's also important that parking operations continuously advance staff training to understand and make the most of the products into which they've invested so much. They don't need to be technology experts, just take advantage of the resources they purchase and create a **unified view of all parking data**.

## WHAT IS A UNIFIED DIGITAL PARKING OFFICE?

The unified digital parking office is where technologies serve a single unified purpose - management of the parking operation. It has all the components of a modern parking office, and strives to reach the business and revenue goals of the parking operation. However, because it's "digital," information is recorded and shared electronically rather than manually. This allows the office to eliminate the majority of its paperwork, especially in internal operations.

"Unified" refers to bringing all data together into one view. Not necessarily using just one system, but rather putting in place a unified system that consolidates data from many systems that work together, presenting the data needed at any time. Regardless of the technology vendor or where the data is stored, all systems work together seamlessly and manage data in a unified, consistent manner.

A "digital" parking office is one that stores electronic records of all things related to parking, from any source, forever. Because the cost of managing data digitally is inexpensive, parking offices have the opportunity to store and track each and every piece, such as:

- Images – of parking violations for the purpose of appeals, etc.
- Audio clips – from enforcement officers in the field (on a handheld), radio transmissions and telephone conversations with parkers, etc.
- Video clips – of towing activities, parking activities, in-lane activities, etc.
- Communications – records of all e-mail and letters going into and out of the parking office.
- Device diagnostics – evidence that shows meters, gates and other hardware are functioning properly (or improperly).

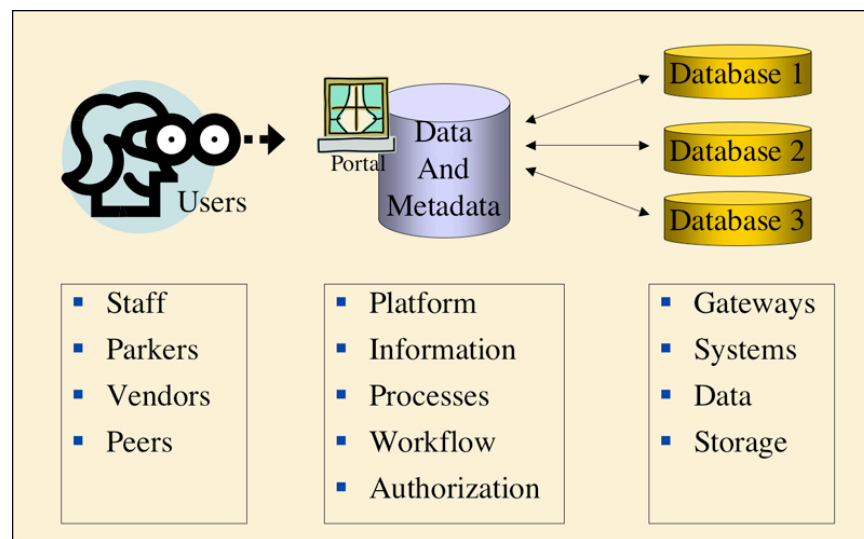
## UNIFIED OR INTEGRATED?

Systems must be designed to share information with each other. Unifying data is a difficult concept in which two things must be provided:

1. A common “portal” from which all data is accessed, viewed, updated and reported. Such a portal provides the ability to access this data from one system, regardless of which system actually stores data. This could be a PC, Web site or portable application.
2. “Gateways” to data from other systems, where those systems remain “authoritative” of their own data.

Data and information are stored in respective systems and there is no need to copy data to additional databases as long as the authoritative system (the one that owns the data) is able to share information in an on-demand manner.

## THE COMPLETE VISION: THE UNIFIED DIGITAL PARKING OFFICE



In the illustration above, the unified digital parking office starts with “users,” such as parking office staff, parkers and vendors who can access software or hardware applications to get data for management, analysis and benchmarking.

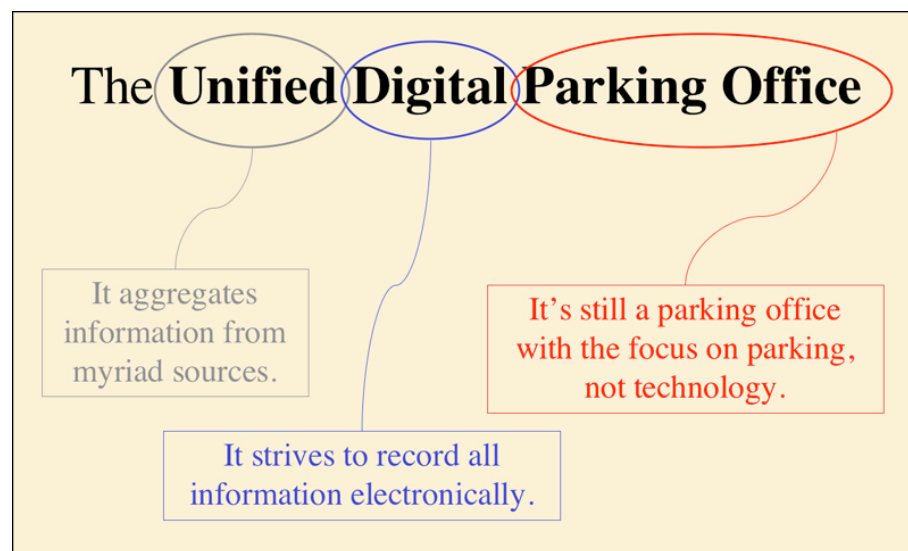
These users access information through the portal and associated database. “Meta data” is considered to be information such as copies of existing source data in other databases, or instructions as to where to find source data. At T2 Systems, this is referred to as a data warehouse. The portal and associated database is comprised of:

- Platform – the ability to define and construct a unified system.
- Information – a representation of the data.
- Processes – definitions of activities that comprise parking office operations (overview of operations).

- Workflow – enables processes to be completed (detailed operations).
- Authorization – a major component in which the user must have permission to access anything to keep information secure and avoid security breaches.

Data is exchanged with other systems, such as vendor-provided solutions for meters, permitting, ticketing and financial management, and other areas of parking management, all storing raw data and working together through the data warehouse to share information and interact.

## PICTURE THE FUTURE OF PARKING TODAY



This vision of the parking office's future is needed today. In summary, the Unified Digital Parking Office:

- Brings together information from multiple sources (Unified).
- Stores all information electronically (Digital).
- Focuses on parking operations, not technology (Parking Office).

For more information about T2 Systems and the Unified Digital Parking Office, call 800-434-1502 or visit [www.t2systems.com](http://www.t2systems.com).