

Data-Driven Strategies to Optimize Mixed-Use Parking Operations

Manage the needs of mixed-use parking lots with a unified, centralized IoT hub that streamlines operations and prevents revenue loss.

Market Context

Combining Commercial & Residential Parking

What if your parking facility could serve multiple purposes, seamlessly accommodating employees, visitors, customers, and residents, all while maximizing revenue? Mixed-use parking facilities are shifting from a convenient add-on to an indispensable feature.

By combining commercial and residential needs into a single structure, these multi-site developments **optimize space utilization** and **meet the demands of increasingly diverse user groups**.



Yet the challenge goes beyond simply adding more levels. These lots often serve periodic uses, store customers from 8 am to 9 pm, followed by residents and event visitors in the evenings and weekends. If those crossovers aren't managed precisely, **prime spaces lie empty while other zones overflow**, resulting in significant revenue losses. Real-time guidance and swift access control are essential to coordinate these overlapping demands, prevent bottlenecks, and protect every dollar of potential income.

Mixed-use parking developments demand more than a simple array of painted lines, **they require a cohesive, data-driven strategy**. An IoT-based parking management platform delivers this by uniting all operational components into a single interface:

- Real-time occupancy monitoring
- Access controls
- Dynamic pricing
- Payment processing



This centralized view not only simplifies daily operations but also provides instant visibility to avoid costly missed revenue opportunities and dynamically allocate space where it matters most.

The Unique Challenges of Mixed-Use Parking

Synchronizing Multi-User Parking Needs

Managing parking for multiple user groups can be surprisingly complex, as each group arrives at different times, stays for varying durations, and expects unique services.

For instance, while a condo tenant requires guaranteed overnight parking, a client from a restaurant might only need a parking spot for a couple of hours.



11%

OF RETAIL SALES CAN BE LOST

if customers fail to find parking within five minutes of arrival.

Source: International Parking & Mobility Institute (IPMI), cited in retail traffic studies.

These differences in usage, and the risk of prime spaces lying empty while other areas overflow, can quickly translate into significant revenue losses if not managed correctly.

Some groups naturally complement each other, such as office workers finishing their day when restaurants become busy; in contrast, overlapping needs, like those of daytime coffee shops, can lead to conflicts if sharing the same space.

Finding the right balance to prevent congestion and ensure optimal space utilization is an ongoing challenge.

75%

OF SHOPPERS ARE LIKELIER TO RETURN

to a commercial venue that offers real-time parking availability and quick navigation tools.

Source: Frost & Sullivan (2021), "Transforming Parking Experience: Consumer Attitudes & Expectations."



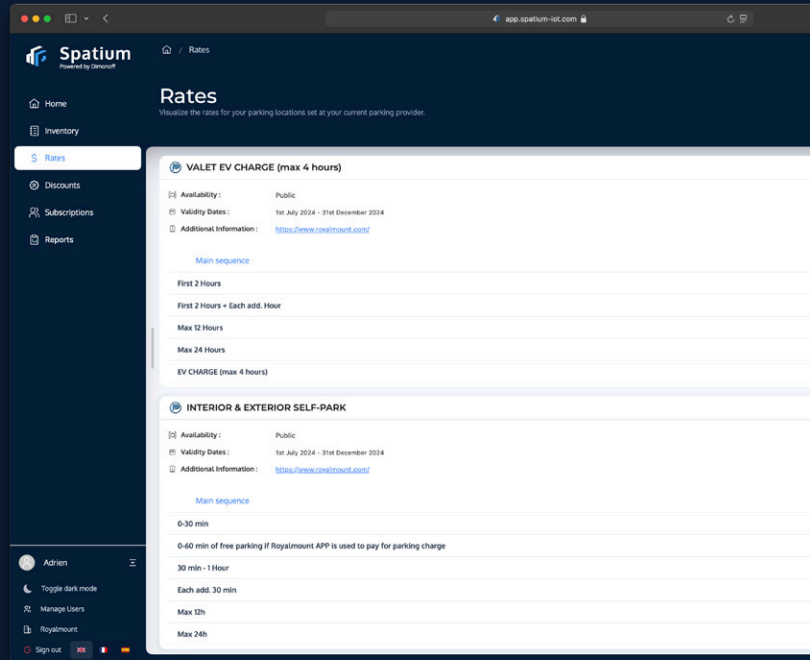
Smart Tools for Predictive Parking Optimization

Fortunately, modern solutions can align parking capacity with actual demand by combining:



These features give operators a live view of every zone, automatically raise or lower rates as demand shifts, and let staff change access rules or update signs from one screen. By adding past data and upcoming event calendars, the system can even predict busy periods, like holiday shopping weekends or evening shows, so spaces and rates are set ahead of time.

By fine-tuning how spaces are allocated, and minimizing overlap between user groups, parking lots stay full but never crowded. Mixed-use facilities can avoid underuse or overcrowding, ensuring each user experiences fast, hassle-free access.



2/3 OF PARKING OPERATORS ACHIEVED FULL ROI WITHIN 24 MONTHS

when implementing advanced, data-driven solutions, bolstered by a 15–25% increase in occupancy and revenue.

Source: MarketsandMarkets (2022), Smart Parking Market



Strategies to Optimize Mixed-Use Parking Garages

Optimize Overlaps with Shared Parking

Different user groups often peak at different times, think office workers who leave by late afternoon and restaurant clients who arrive after 5 p.m.

Recognizing these natural overlaps allows operators to optimize space usage, reducing the need for extra capacity while keeping the facility active throughout the day.



Set Aside High-Priority Residential Access

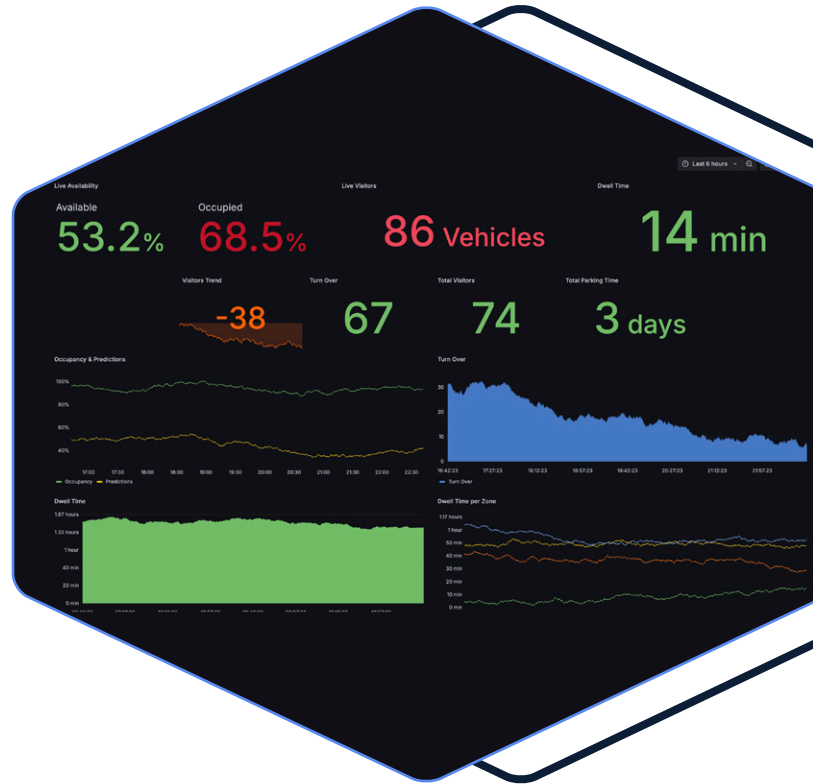
Residential users often require round-the-clock parking. Establishing a dedicated or controlled-access zone, such as a gated area or specific floors, ensures that residents have secure access without competing with short-term visitors.

Clear signage, physical barriers, and differentiated entry passes ensure these areas remain distinct and conflict-free.

Anticipate Parking Demand with Data Insights

Prevent overcrowding and maximize revenue by planning for peak periods, such as weekends, holidays, or special events, using real-time data. Adjust pricing dynamically to offer discounts during off-peak hours or premium rates when demand surges.

Flexible zone designs allow areas to transition as needs change (for example, turning retail spaces into overnight additional residential zones), ensuring every square foot is efficiently utilized.



Use a Modern Parking Management System

A centralized platform is essential to coordinate scheduling, access control, analytics, and pricing. Such a robust system provides immediate insight into facility performance by tracking key metrics like revenue, occupancy, and compliance.

Real-time data, paired with around-the-clock virtual customer support, enables swift adjustments to policies or fees, ensuring a smooth experience for all users.

Review Utilization and Adjust Strategically

Continually analyze occupancy and turnover data to see whether spaces are being used optimally. Set customizable thresholds and automated alerts to highlight when a sector falls below, say, 50% utilization or exceeds 90% capacity for example.

Armed with these insights, operators can reassign underused areas to a different user group, adjust pricing tiers for specific time blocks, or repurpose spaces for special events, ensuring every parking spot generates revenue.



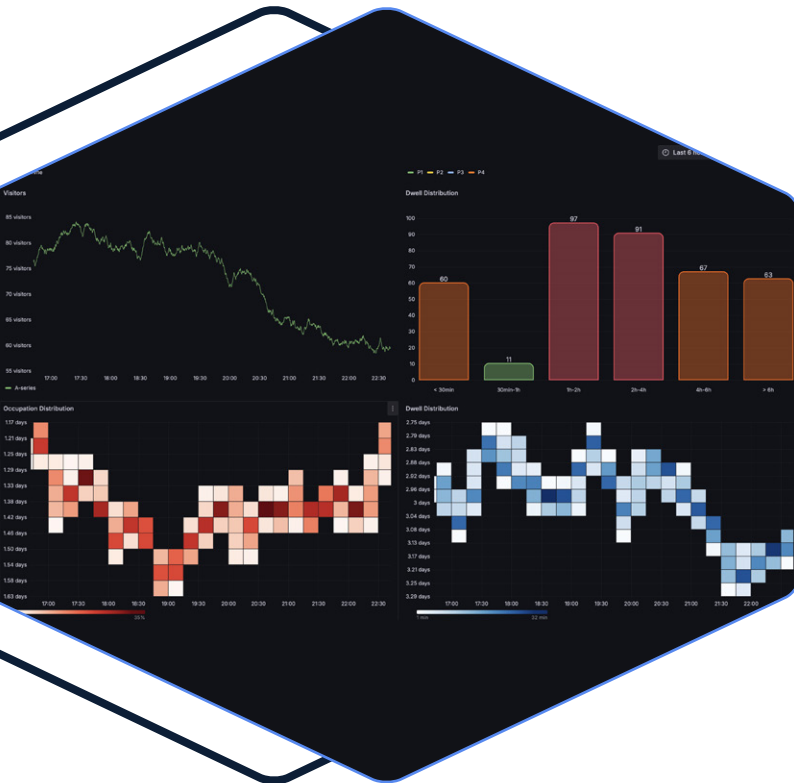
Identify and Adapt to User Traffic Patterns

Equally important is keeping an eye on evolving traffic patterns such as:

- Increased remote work affecting daytime occupancy
- Holidays and seasonal peaks
- Weather-driven shifts (rainy days pushing more drivers indoors)

Correlate these patterns with calendar events (e.g., special events or conferences) to forecast surges before they occur.

Then, dynamically update access rules, zone designations, and rate schedules to match demand, preventing both revenue loss from idle spots and congestion in hot zones.



Smart Parking Management System

Dimonoff Spatium: Key Advantages



Integration with Third-Party Partners

Spatium operates independently or integrates seamlessly with a broad range of hardware and services, parking access barriers, dynamic displays, payment terminals/apps, and occupancy sensors & cameras. By consolidating these into one platform, operators gain full control and eliminate fragmented, siloed workflows.



Customizable Report Analysis

Leveraging real-time and historical data, Spatium delivers 360° visibility, capturing vehicle turnover, occupancy rates, and peak-hour trends. Cross-referencing revenue and occupancy by use case (resident vs. retail vs. office) lets operators pinpoint underperforming zones, reduce losses, and fine-tune pricing or allocations for each user group.

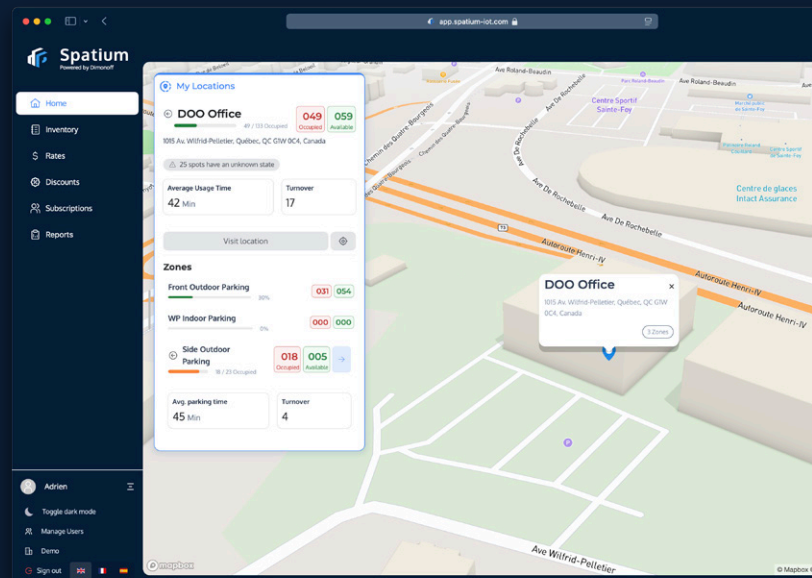


Proactive Maintenance Alerts

With built-in predictive analytics and proactive alert features, Spatium detects equipment malfunctions, occupancy anomalies and underperforming use cases at an early stage. This early detection minimizes downtime, ensuring timely maintenance and smooth, uninterrupted service throughout the facility.

Dimonoff brings every aspect of parking management together under one cohesive, IoT-based platform, Spatium.

Whether your mixed-use parking project is still in development or already operational, Dimonoff delivers a turnkey solution tailored precisely to its unique mixed-use requirements.





Occupancy and Performance Prediction

Spatium's advanced forecasting models use historical patterns and real-time inputs to predict future demand across different use cases. This capability enables proactive scheduling of peak-period pricing, staffing, or zone reconfigurations, keeping occupancy balanced and performance optimized even during special events or seasonal shifts.



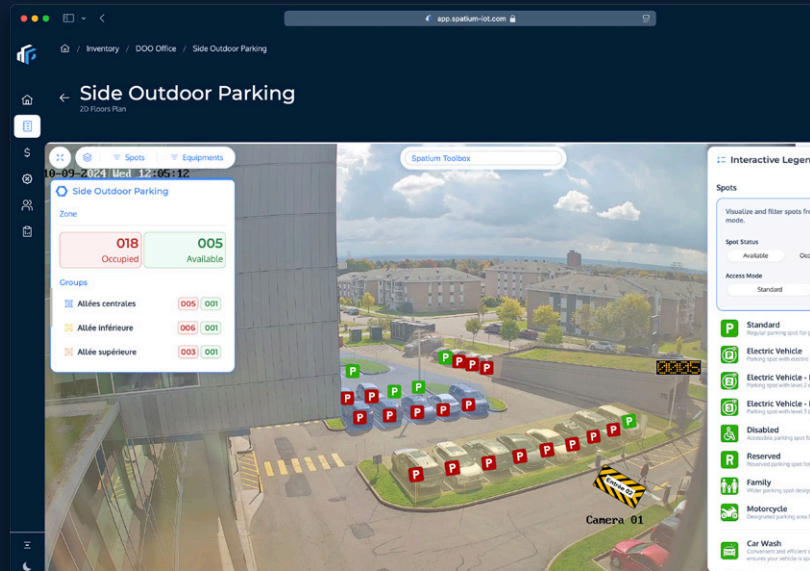
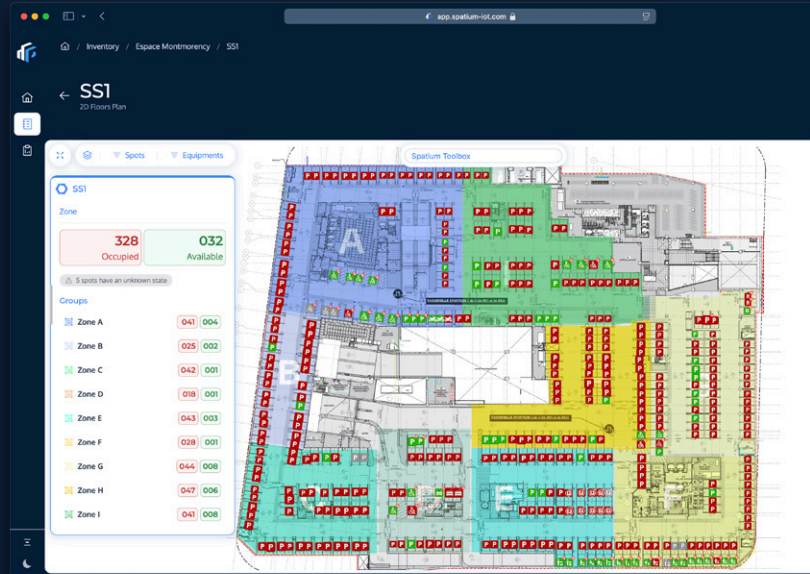
Use Case Configuration

This feature lets operators define and manage distinct parking workflows, from round-the-clock resident passes to time-limited retail or office slots. Coupled with dynamic signage and wayfinding, Spatium directs drivers to the correct zones, slashing search times and easing congestion in complex mixed-use environments.



A Future-Ready Platform

Moreover, Spatium's cloud-based architecture means your system can evolve as your development grows, supporting additions like EV charging stations, dynamic lighting controls, or other smart-city expansions.



ParkSmart Certification Support



ParkSmart Certification recognizes garages that meet the highest standards for sustainability and performance as defined by IPMI and GBCI.

Helping Being Certified

Spatium helps mixed-use facilities prepare for this by centralizing real-time occupancy tracking, dynamic pricing, energy-efficient controls, and comprehensive reporting in one platform while offering tools to optimize resource use.

These capabilities deliver the precise metrics and controls needed to demonstrate compliance, streamline the certification process, and reinforce a facility's dedication to sustainable, efficient parking management.

Case Study: Royalmount Shopping Center

Royalmount's parking system meets Parksmart standards.

By achieving Parksmart, Royalmount underscores its commitment to **sustainability, resource efficiency, and operational excellence.**

See how Spatium smart parking platform transformed Royalmount's parking system:

[Download the Case Study](#)



"Spatium optimizes mixed-use parking management by turning real-time data into actionable insights, so parking managers can avoid revenue losses and extract the most out of it.

The result is a dynamic parking ecosystem that meets the unique needs of every parking user, ensuring a great customer experience."



Adrien Orceau
Product Owner – Dimonoff

The screenshot displays the Spatium web application interface. The browser address bar shows 'app.spatium-lot.com'. The page title is 'DOO Office' with the address '1015 Av. Wilfrid-Pelletier, Québec, QC G1W 0C4, Canada'. The dashboard features three key metrics: 31% of total capacity used, 43 minutes average time occupied, and 18 average rotations. Below these are three parking zones: Front Outdoor Parking (22/104 occupied), WP Indoor Parking (0/6 occupied), and Side Outdoor Parking (19/23 occupied). A sidebar on the left contains navigation options like Home, Inventory, Rates, Discounts, Subscriptions, and Reports. The user profile 'Adrien' is visible at the bottom left.



Smart Control Solutions Managing Connected Assets

Dimonoff is a pioneer and innovator of remote control & monitoring technologies. Navigant ranks Dimonoff among the top 5 players in the smart street-lighting market. Headquartered in Quebec City, Canada, Dimonoff is the result of more than 18 years invested in R&D to create the most robust nodes and gateways, as well as state-of-the-art IoT management platforms.

Dimonoff allows partners to leverage the power of IoT: by optimizing asset and infrastructure management, and by lowering energy costs, while deploying an IoT communications network, clients everywhere can offer better infrastructures and services and, subsequently, improve the livelihood of their communities.

Contact us for a demo today!

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