

Spatial OS for Hospitality

Hotels, Resorts, Tourism & Events

The Complete Digital Twin & Immersive Platform

9 Stakeholder Groups • **40+ Use Cases**

Digital Twins | Immersive Rooms | VR | AR | Pixel Streaming | Holographic Displays | AI Assistants | Geospatial Intelligence | IoT/Sensor Integration

INDUSTRY WHITEPAPER

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Executive Summary

The hospitality industry is undergoing a transformation driven by rising guest expectations, competition from experiential travel, and the digital shift in booking behavior. Luxury chains, resort developers, and event venues operate with fragmented tools: static websites, low-fidelity virtual tours, spreadsheet-based planning, and siloed IoT systems.

PROPVR's Spatial OS unifies the entire guest and stakeholder journey. From photorealistic pre-booking walks through luxury suites, immersive event venue showcases, to real-time smart hotel operations with full IoT integration — each stakeholder gets the immersive tools they need to sell, plan, operate, and experience.

The Challenge

Hotel owners manage portfolios (20+, often across continents) without unified visibility into occupancy, maintenance status, or renovation progress. Sales teams struggle to upsell premium rooms and suites when corporate clients and wedding couples can't experience the spaces online. Event planners walk empty ballrooms and can't visualize setups. Guests discover hotels through static photos and low-trust reviews. On-property, guests ask staff basic questions repeatedly — 'Where is the spa?' 'What are nearby restaurants?' — consuming staff time. Facility managers operate IoT systems in silos — HVAC, lighting, water, elevators, security, kitchen equipment — without integrated spatial visualization or predictive maintenance. Housekeeping, maintenance, and engineering lack coordinated dispatch and status tracking.

Each challenge is tackled with disparate tools. No continuity. No ability to iterate on guest experience. No way to correlate operational data (water usage, energy, maintenance requests) with guest satisfaction.

The Solution: Spatial OS

One investment in photorealistic spatial content (via drone scanning, LiDAR, CAD integration, 360° photography) unlocks every PROPVR product. Spatial Twin for offline luxury suite exploration. Spatial Stream for web-based pre-booking tours. Spatial Cave for immersive event

venue showcases. Spatial Agent for AI-powered concierge and booking assistance. Spatial Lens for AR-guided room navigation and amenity discovery. Spatial Lite on hotel websites and guest apps. Spatial Map for neighborhood context, attractions, and connectivity. And Spatial Twin integrated with hotel BMS/IoT for real-time operations, predictive maintenance, and energy optimization.

This whitepaper maps each of the 9 stakeholders to their ideal experience, explains the physical deployment (where does hardware go, why, how does the user interact), and quantifies ROI — from faster room upsells to higher event conversion to 30% energy reduction to 25% maintenance cost savings.

Industry Challenge: The Hospitality Ecosystem in Transition

1. Portfolio Visibility & Strategic Planning

Leading luxury chains and resort operators manage 20, 50, even 100+ properties worldwide. Each property has different designs, construction status, occupancy rates, RevPAR performance, renovation roadmaps, and market conditions. C-suite and board members lack a unified view. Strategic decisions (where to invest next, which property to renovate first, whether to acquire a distressed asset) are made on spreadsheets, PDF reports, and occasional site visits.

Current workflow: Monthly reports, static dashboards, and in-person board visits. Portfolio data is fragmented across hotel management systems, accounting, and email. Board presentations rely on PowerPoint decks that fail to convey the scale, quality, and positioning of 30+ distinct properties.

- C-suite struggles to assess portfolio strength holistically and make informed investment decisions.
- Investors cannot 'experience' the portfolio before committing capital.

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- Board meetings are slow to approve expansions or acquisitions without immersive visual proof.

2. Room Upselling & Premium Suite Discovery

Hotels generate revenue through room-type upsells: standard rooms at USD 200/night, superior rooms at USD 300, suites at USD 500-1,500, and presidential suites at USD 3,000+. Corporate clients and leisure travelers book online without seeing the space. Hotel staff can describe the suite verbally, but that doesn't convert. Some chains maintain physical mockups in select cities — expensive and immobile.

Online travel agents (Booking.com, Expedia, Airbnb) show static photos and floor plans. Video tours are often low-fidelity phone recordings. Result: Most guests default to booking the 'standard room' because they can't justify the premium without visceral confidence in the upgrade.

- Premium suite inventory underutilized; average selling price is \$50-100 below potential.
- Corporate travel buyers make decisions on price alone because immersive experience is absent.
- Luxury properties can't differentiate on experience because guests don't encounter the experience until check-in.

3. Wedding & Event Venue Sales

Wedding venues and event spaces host hundreds of events annually — weddings (USD 50,000-500,000), corporate conferences (USD 100,000-1,000,000+), galas, and product launches. Couples and event planners visit on-site, walk through an empty ballroom, and try to imagine the decorated space. Planners manually create floor plans using PowerPoint or hand-drawn sketches. Multiple site visits are needed to finalize details. If a couple is traveling from abroad, they can't visit and must make a USD 100,000+ decision based on photos and video calls.

Current workflow: Site visits, email chains, PowerPoint floor plans, phone consultations. Planners lose 20-30% of bookings to competing venues that are more convenient to visit.

- Remote couples/planners can't visualize the venue and default to competitors with in-person mockups.
- Planners iterate floor plans manually, slowing down decision cycles.
- Venues can't showcase multiple setups (round tables vs. theater style) without physical rearrangement.

4. Guest Pre-Booking & Online Discovery

Online booking drives 50-80% of hotel revenue in 2024. Guests browse on Booking.com, Expedia, hotel website, and OTA apps. Photos and descriptions are limited. Guest reviews are often negative (photos show the worst angle, reviews amplify dissatisfaction). Guests making a USD 2,000-10,000 booking decision can't experience the hotel online. Hotels can't cross-sell spa treatments, restaurant reservations, or local experiences pre-arrival.

Current workflow: Static photo galleries, basic video tours, and guest reviews. No interactive experience. Conversion rates on premium rooms are low because guests lack confidence.

- Pre-booking abandonment rate ~70% because guests lack immersive confidence.
- Cross-sell opportunities (spa, dining) missed because guests don't know what's available.
- Hotel branding is weak; guests perceive the hotel as 'a room' rather than an experience.

5. On-Property Guest Experience & Wayfinding

After check-in, guests often struggle with basic questions: Where is the spa? What restaurants are available and when? How do I get to the beach? Where is the gym? How far is the nearest market? Staff spend hours answering these questions. Guests get lost or miss amenities, reducing satisfaction. Hotels can't upsell experiences in real-time.

Current workflow: Printed maps, staff interaction, and trial-and-error. Digital concierge solutions exist but require pre-installation and manual interaction.

- 10-15% of guests report getting lost or disoriented on-property.
- Staff answers same questions repeatedly, inefficient and error-prone.
- Upsell of experiences, treatments, and dining is left to chance rather than guided discovery.

6. Smart Hotel Operations & IoT Fragmentation

Modern hotels deploy hundreds of IoT sensors and actuators: HVAC (room temperature, air quality), smart lighting (room lights, corridor lights, exterior facade), door locks (access logs, battery status), minibar sensors (inventory tracking), water flow meters (per-room consumption, leak detection), power meters (energy usage by zone), elevators (real-time health monitoring), pool chemistry sensors, laundry equipment, kitchen appliances, and security systems. These systems operate independently, generating data silos. Facility managers lack unified visibility into hotel health, energy efficiency, and maintenance needs.

Current workflow: Multiple vendor dashboards (HVAC one app, lighting another, energy another, elevators another). Manual work order systems. Maintenance is reactive rather than predictive. Energy optimization is guesswork.

- Energy waste: Hotels spend USD 5-15/sq.ft./year on energy; much is avoidable through optimization.
- Maintenance failures: Equipment breaks without warning, causing guest dissatisfaction and emergency repair costs.
- Water waste: Hotels consume 300-500 liters/guest/night; much is lost to leaks and inefficient irrigation.
- Guest experience correlation: Complaints about room temperature, dark corridors, or elevator waits are not linked to underlying sensor data.

7. Destination Marketing & Competition

Resorts and destination properties (Red Sea Global, AMAALA, NEOM Sindalah, Diriyah) are marketed to international audiences. Competitors abound — other resorts, alternative destinations. Pre-opening, the resort is virtual. Post-opening, the resort competes on photos and reviews. Destination marketers need to showcase the resort in the context of the destination: beaches, cultural sites, adventure activities, accessibility from airports and cities.

Current workflow: Website, travel agent partnerships, influencer trips, travel shows. Limited interactive experience. Destination context is separate from resort showcase.

- Destination appeal is hard to convey without in-person travel.
- Competitive differentiation is difficult when all resorts show similar static photography.
- Travel agents and booking platforms provide only basic property information.

Spatial OS Platform Overview

PROPVR's Spatial OS is a unified platform: one spatial content investment (digital twin, CAD import, LiDAR scan, 360° photography) drives outputs across 13 products, deployed across 5 interaction modes (desktop, web, VR, AR, immersive rooms) and integrated with IoT systems for real-time operations.

Core Technology Stack

Spatial Twin is the source. It's a native EXE with photorealistic rendering, Walk mode (first-person navigation through rooms, suites, restaurants), Fly mode (aerial overview of resort masterplan), View mode (cinematic camera paths for marketing), day/night simulation, and gamification (click interactions, timeline scrubbing, unlock special offers). The Twin runs offline via Spatial Touch (local GPU hardware) for zero-latency premium experience, or online via Spatial Stream (pixel streaming cloud EXE to browser) for cost-efficient global access.

Every other product plugs into the Twin or a variant: Spatial Lite (web-only lightweight version for hotel websites), Spatial World (portfolio dashboard for multi-property operators), Spatial Cave (immersive 270°-360° projection for event showcases), Spatial Table (tangible tabletop for floor plan layout), Spatial Holo (glasses-free holographic display of resort model), Spatial Tour (VR full-immersion walk-throughs), Spatial Lens (AR tablet for in-room and on-property navigation), Spatial Agent (AI avatar for concierge and booking assistance), Spatial Drive (structured sales presentation tool), Spatial Map (geospatial intelligence for location context and competitive analysis).

Spatial Twin integrates with hotel BMS (Building Management System), IoT platforms, and property management systems (PMS) to visualize real-time sensor data, work orders, and predictive maintenance.

Spatial OS Product Portfolio

Product	Description	Key Capability
Spatial Twin	EXE-native 3D walkthrough with Walk/Fly/View modes, gamification, day/night sim	Photorealistic digital twin exploration
Spatial Lite	Web-based interactive project showcase	Browser-native property/facility showcase
Spatial World	Portfolio-level spatial intelligence platform	Multi-asset management and visualization
Spatial Stream	Pixel streaming technology	Host EXE experiences in cloud, stream to any browser
Spatial Touch	High-end GPU hardware device	Offline deployment for galleries/centres, zero latency
Spatial Tour	VR headset interior walkthroughs	Immersive VR exploration
Spatial Holo	Holographic model viewer	3D holographic display without headsets
Spatial Cave	Immersive LED/projection room	Surround-display cinematic experience
Spatial Table	Interactive tangible tabletop	Tactile plan exploration and deep-dives

Spatial Agent	AI-powered avatar assistant	Conversational AI with spatial context
Spatial Lens	AR tablet viewer	Augmented reality overlay on physical spaces
Spatial Drive	Interactive sales presentation tool	Guided developer sales presentations
Spatial Map	Location intelligence and mapping	Geospatial context and neighbourhood data

Stakeholder 1: Hotel Owner / Chain HQ / C-Suite

Leading luxury chains and independent resort operators manage portfolios ranging from 5 to 100+ properties worldwide. Portfolio spans luxury urban hotels, destination resorts, villas, and mixed-use developments. C-suite executives (CEO, CFO, Chief Development Officer) make strategic decisions on acquisitions, expansions, renovations, and brand positioning based on financial and operational data.

Deployment: Where Products Go, Why, How Used

Spatial World — Executive Portfolio Dashboard

Deployment: Mounted on the executive dashboard at chain HQ (large display, web browser, or custom interface).

Why: C-suite needs bird's-eye view of the entire portfolio in real-time — occupancy rates, RevPAR, ADR, construction progress, renovation milestones, maintenance status, energy usage, and pipeline of new properties.

How: CFO opens Spatial World on the executive dashboard. It shows all properties as 3D models on a world map with live overlays:

- Each property displays key metrics: Occupancy 92%, RevPAR USD 450, ADR USD 350, Construction 45% complete.
- Color-coded: Green = optimal performance, Yellow = attention needed (maintenance spike, occupancy dip), Red = critical (outage, major renovation).
- Expansion pipeline: New properties under construction shown as translucent models with completion timelines.
- Energy heatmap: Total portfolio energy consumption by property, identifying high-consumption outliers.

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- Renovation tracking: Properties mid-renovation shown with progress bars and budget vs. actual spend.

Impact: C-suite makes data-informed decisions on where to invest capital, which properties to divest, and strategic priorities. Board presentations accelerated.

Spatial Cave — Boardroom for Investor Presentations & Brand Launches

Deployment: Immersive 270°-360° LED/projection display (12 m × 8 m) in the chain's boardroom or exclusive event space.

Why: Major decisions (acquisitions, expansions, brand launches, IPO roadshows) require buy-in from investors, board members, and stakeholders. PowerPoint slides and 2D renderings fail to convey the magnitude and ambition of a USD 2 billion resort development. Spatial Cave creates visceral impact.

How: During an investor meeting, Spatial Cave displays the brand's flagship property and future expansion:

- Current state: Existing resort as photorealistic 3D model, with live occupancy simulation (guests in rooms, lounges, beaches).
- Proposed expansion: New tower rises on screen, beachfront suites materialize, new spa and conference center visualized.
- Guest journey: Camera walks investors through a guest's full stay — arrival → check-in → suite → dining → spa → departure.
- Financial projection: Timeline scrubbing shows revenue and EBITDA year-by-year as new rooms come online and brand premium materializes.

Impact: Investors are visually convinced of the opportunity. Funding approvals accelerate. Board confidence in management's vision strengthens.

Spatial Twin (Fly & Walk Mode) — Masterplan Review & Property Evaluation

Deployment: Spatial Twin EXE on HQ planning team's laptops, or via Spatial Stream (pixel-streamed to web for easier access).

Why: Strategic decisions (acquire property X, renovate resort Y, expand tower Z) require deep understanding of the property's layout, appeal, and optimization potential. Executives need to 'experience' the property as a guest, understand flow, and identify areas for enhancement.

How: CDO or Asset Manager launches Spatial Twin for a property under evaluation:

- Fly mode: Aerial view of the entire resort masterplan, rotation to view beachfront, gardens, pool areas, and parking.
- Walk mode: First-person walk from lobby entrance → reception → corridor → suite → balcony. Assess guest experience, sightlines, and wayfinding.
- Day/night simulation: View the same spaces during morning (bright, airy), evening (mood lighting), and night (security, ambiance).
- Annotation tool: Executive marks up the property with strategic notes ('upgrade this bathroom,' 'this hallway feels narrow,' 'opportunity to add bistro here').

Impact: Executive teams make confident property decisions before committing capital.

Renovation priorities prioritized based on guest-experience impact, not just cost.

Spatial Holo — HQ Reception & Brand Display

Deployment: Holographic display (2 m × 1.5 m) in the chain HQ's executive reception or main atrium.

Why: Brand identity and prestige. Visitors (investors, partners, media, prospective employees) should encounter the brand as immersive and innovative, not merely corporate.

How: As visitors enter HQ reception, they encounter a holographic 3D model of the brand's flagship resort, floating mid-air. The holo cycles through scenes:

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- Daytime: Resort in sunlight, guests lounging by pool, bustling restaurants.
 - Evening: Resort lit up, fine dining in full swing, beachfront glow, sunset atmosphere.
 - Brand story: Voiceover plays, describing the resort's positioning, unique features, and awards.

Impact: Visitors are impressed. Brand premium strengthens. Investor confidence increases. Media captures content for press coverage.

Spatial Drive — Structured Investor Presentations

Deployment: Interactive presentation tool on HQ's boardroom screen or laptop, controlled by executive presenting.

Why: Investor decks require consistent, impactful storytelling. Spatial Drive ensures every presentation (fundraising, board meeting, IPO roadshow) follows the same high-standard narrative.

How: CFO presents to investors using Spatial Drive. The tool provides structured flow:

- Chapter 1: Company overview with portfolio map showing all properties and growth trajectory.
- Chapter 2: Flagship property showcase with interactive Spatial Twin walk-through.
- Chapter 3: Financial projections with revenue, occupancy, and EBITDA modeled year-by-year.
- Chapter 4: Expansion roadmap with new properties visualized in context of market opportunity.

Impact: Consistent, professional investor communications. Faster funding closes. Higher valuations due to clear vision.

Spatial Table — Portfolio Planning & Renovation Prioritization

Deployment: Interactive tangible tabletop (3 m × 2 m) in the chain's development/strategy department.

Why: Strategic planning (which properties to renovate, in what order, with what budget) involves balancing ROI, market demand, brand positioning, and capital availability. A tabletop allows executives and development managers to collaboratively model scenarios.

How: Development team gathers around Spatial Table. All properties are displayed as rectangles on a 2D map (sorted by region, brand, age). Operators can:

- Drag a property into the '3-Year Renovation Pipeline.' System calculates cost, timeline, and projected ROI increase.
- Drop a property into the 'New Acquisition' bin. System analyzes acquisition cost, synergies with nearby properties, and brand-fit.
- Adjust capital budget. System re-prioritizes which properties get renovated based on ROI efficiency.
- Visualize portfolio transformation: Properties change color as they move through planning, acquisition, and renovation phases.

Impact: Strategic planning cycles compressed from 3-4 months to 2-3 weeks. Executive consensus achieved faster. Capital allocation optimized for maximum brand lift and ROI.

Stakeholder 2: Hotel Sales & Revenue Team

Sales teams at luxury hotels manage room inventory, pricing, and upsells. Revenue managers adjust rates based on demand. They engage corporate travel buyers, travel agencies, wedding planners, and leisure travelers. Primary challenge: moving guests from standard to premium rooms (suites, club floors, high-floor suites with views).

Deployment: Where Products Go, Why, How Used

Spatial Twin — Premium Suite Upselling in Sales Office

Deployment: High-end laptop or desktop (GPU-enabled) in the hotel's sales office where corporate travel buyers and wedding planners visit.

Why: Corporate clients making USD 100,000+ room block commitments (100 rooms for 3 nights) want confidence that the rooms justify the premium price. Wedding couples spending USD 500,000+ want to experience the suite before committing. A physical mockup is expensive and immobile. Spatial Twin delivers immersive suite experience on-demand.

How: Sales agent walks a client (e.g., corporate travel buyer for a Fortune 500 company) into the sales office and launches Spatial Twin on a large display:

- 'Let me show you our presidential suite.' The agent walks the client through Spatial Twin, first-person perspective.
- Client walks into the suite living room, sees the marble finishes, designer furniture, and ocean view through floor-to-ceiling windows.
- Agent: 'The suite spans 200 sq. meters. Notice the separate bedroom, two bathrooms, and private terrace.' Client walks to the terrace, sees the view.
- Agent pivots to standard suite. 'Our standard suite is 60 sq. meters. Smaller but still elegant.' Client walks through the standard suite, feels the difference.

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- Agent: 'The presidential suite costs USD 50/room/night more per block rate. With 100 rooms, that's USD 5,000 additional revenue per night. But higher satisfaction, repeat bookings, and brand perception.' Client visualizes the upgrade premium against guest experience and commits.

Impact: Room upgrade conversion increases from 10% to 35%. Average transaction value rises USD 50-150 per room. Annual hotel revenue increases USD 500,000+.

Spatial Touch at Sales Office — Offline, Zero-Latency Experience

Deployment: High-end GPU hardware (Spatial Touch) with large touchscreen display in the sales office for premium client meetings.

Why: When a client is in the office, instant, responsive experience is critical. Streaming latency (Spatial Stream) would be distracting. Spatial Touch provides native performance, zero lag, full feature-richness.

How: Sales agent boots Spatial Twin on the Spatial Touch device (dedicated GPU hardware). Client experience is identical to Fly/Walk modes, but with instant responsiveness. Client can 'play' with the experience — walk slowly through rooms, rotate views, check details — without lag.

Impact: Clients are impressed by the technology. Conversion confidence increases. Brand perception as innovative and premium strengthens.

Spatial Stream — Web-Based Room Tours for Remote Buyers

Deployment: Shared link to Spatial Stream (pixel-streamed experience) sent to corporate travel buyers, travel agencies, and online travel agents via email or booking system.

Why: Many corporate clients are remote. Wedding couples are often traveling. Travel agents can't visit every hotel they book. A web link allows stakeholders to explore rooms from anywhere, anytime, on any device.

How: Sales agent sends an email with a personalized link: 'Dear Ms. Johnson, preview the presidential suite here [link]. Walk through, see the view, check the amenities. Questions? Call me.' Client clicks link, browser opens Spatial Stream experience (no app installation needed). Client walks through the suite at their own pace, in their time zone, while sitting at their desk.

Impact: Remote buyers gain immersive confidence. Booking conversion increases. Travel agents can upsell premium rooms to clients without in-person visits. OTA platforms show differentiated hotel content vs. competitors.

Spatial Lite on Hotel Website & App — Interactive Room Browser

Deployment: Embedded on hotel website homepage and in the hotel's mobile app (iOS/Android).

Why: Direct-to-consumer booking is critical. Guests starting on hotel website often compare with competitors. A lightweight, engaging room browser on the website keeps guests engaged and increases conversion.

How: Guest lands on hotel website. Instead of 'Browse Rooms' showing static photo gallery, the website shows interactive Spatial Lite. Guest can:

- Click 'Standard Room' and see a 360° interactive view of the room, with hotspots for 'Bathroom,' 'View,' 'Amenities.'
- Click hotspots to zoom or get descriptions ('Rainfall shower, premium toiletries, heated towel rack').
- See a 2D floorplan showing room layout (useful for accessibility verification).
- Swipe to 'Suite' and see the larger, more luxurious alternative without leaving the browser.
- Drag to explore 360° view of common areas (lobby, pool, restaurant) without needing video.

Impact: Website engagement increases (3-5x more time spent on room pages). Booking conversion increases 20-30%. Direct bookings (hotel website) increase vs. OTA bookings, saving commission costs.

Spatial Drive — Corporate Sales Presentations

Deployment: Presentation tool used by sales manager when pitching the hotel to corporate travel departments, conference organizers, and group buyers at industry events.

Why: Group bookings (100-500 room blocks) generate USD 500,000-5,000,000 in revenue. Sales managers need a structured, impressive presentation to win deals. Spatial Drive ensures consistency and impact.

How: Sales manager presents to a Fortune 500 travel manager at their office using Spatial Drive:

- Chapter 1: Hotel overview, location, accessibility from airports.
- Chapter 2: Interactive walkthrough of standard and premium rooms available for the group block.
- Chapter 3: Meeting and event spaces with capacity, setup options, AV capabilities.
- Chapter 4: Dining venues, spa, gym, and ancillary services tailored to the group's needs (e.g., team-building activities).
- Chapter 5: Pricing and terms, with customized rate quote.

Impact: Sales conversion increases. Group deal size increases. Premium ancillary services (spa, dining) are better upsold as part of the package.

Spatial Agent on Website — AI Booking Assistant

Deployment: AI avatar chatbot on hotel website and in-app, available 24/7.

Why: Guests have questions about rooms, amenities, nearby attractions, and pricing before booking. Waiting for email responses or calling the hotel is friction. An AI agent can answer 80%+ of questions instantly in multiple languages.

How: Guest on hotel website types or speaks: 'Show me rooms with ocean view.' Spatial Agent responds: 'Our Deluxe Ocean View room offers a panoramic view of the Arabian Gulf. Would you like to see it?' Launches Spatial Lite walkthrough. Guest asks: 'What's nearby?' Agent responds: 'You're 2 km from the beach, 5 km from the marina, 15 km from the souk. Want recommendations?' Pulls up Spatial Map showing local attractions.

Impact: Website bounce rate decreases. Booking conversion increases. Hotel brand feels innovative and accessible. Reduces staff support load.

Spatial Map — Location Intelligence & Competitive Positioning

Deployment: Embedded on hotel website, shown in sales presentations, and on in-room guest tablets.

Why: Location is a key selling point. Guests want to know: How far is the beach? What restaurants are nearby? How accessible is the city center? What's the drive time to the airport? Spatial Map answers these questions with geospatial data, not text.

How: Guest lands on hotel website. A 'Location' section shows Spatial Map:

- Hotel positioned on an interactive 3D map with surrounding geography, roads, and landmarks.
- Isochrones overlay: 5-minute walk, 10-minute drive, 20-minute drive circles from hotel, showing what's accessible.
- Nearby attractions marked: Beaches, restaurants, museums, markets, nightlife, shopping, medical facilities.

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- Hotel vs. competitors: Overlay nearby competing hotels, showing the hotel's competitive positioning (e.g., closest to beach, best restaurant access).

Impact: Website visitors understand the hotel's location value proposition without reading text. Booking confidence increases. Location-specific premium justifies higher rates.

Stakeholder 3: Wedding & Event Planners

Wedding planners and event coordinators book high-value events at hotels and resorts: destination weddings (USD 100,000-500,000+), corporate conferences (USD 200,000-2,000,000), galas, and product launches. Clients are often international, making in-person venue visits impossible. Planners need to visualize multiple setup configurations and finalize details without site visits.

Deployment: Where Products Go, Why, How Used

Spatial Twin — Venue Walkthrough & Day/Night Simulation

Deployment: Spatial Twin EXE on laptop or via Spatial Stream, shared with planner and client during sales consultation.

Why: Empty ballrooms are hard to visualize as finished event spaces. A bride sees bare walls and concrete floor, not the decorated ballroom with florals, lighting, and guests. Planners need to show the client the 'final vision' so they commit USD 100,000+ with confidence.

How: Wedding planner sits with bride and groom (in person or via video call) and launches Spatial Twin on a shared screen:

- 'Welcome to our ballroom. Let me show you what your wedding will look like.'
First-person walk into the empty ballroom.
- Planner: 'Imagine your ceremony here. The orchestra stage here, guest seating here arranged in semicircle facing the altar.'

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- Agent overlays virtual florals, lighting, and ceremonial decorations (the Spatial Twin can blend 3D assets). Bride sees the visualized ceremony setup.
 - Planner: 'After the ceremony, guests move to the reception. We'll convert the space: dance floor center, high-top tables perimeter, head table on the raised platform.' Spatial Twin switches layout showing reception configuration.
 - Day/night simulation: 'For the evening reception, the lighting becomes mood lighting. See?' Spatial Twin shifts to night mode, showing the ballroom lit romantically.
 - Bride: 'Can we see the garden setup?' Planner navigates to Spatial Twin model of the garden terrace. 'Cocktail reception here, 200 guests. String lights overhead, bistro tables with fire pits.'

Impact: Bride is visually confident. Planner closes the USD 150,000 wedding booking with 50% fewer follow-up site visits (which are logistically hard for international clients).

Spatial Touch at Event Sales Office — Zero-Latency, Premium Experience

Deployment: Spatial Touch (GPU hardware) with large touchscreen in the hotel's event sales office.

Why: When a planner visits in person to finalize a USD 500,000+ event, they want instant, responsive experience. Zero latency. Full interactivity.

How: Event sales manager boots Spatial Twin on Spatial Touch. Planner can 'play' through the venue, rotate the camera, walk through all spaces, and get a visceral feel. The responsiveness impresses and reinforces the hotel's premium positioning.

Impact: Planners are impressed. Competing hotels lose bids because they can't match the immersive experience. Upsells (additional services, premium packages) increase.

Spatial Cave — Immersive Venue Showcase for Large Events

Deployment: Immersive 270°-360° projection room (12 m × 8 m) in the hotel, used for presentations to event planners and clients.

Why: For very large events (1,000-person conference, luxury gala), stakeholders can't fully comprehend the space in 2D or on a laptop screen. Spatial Cave puts them inside the decorated ballroom, experiencing the scale and ambiance.

How: Hotel hosts a corporate conference planner in Spatial Cave. The scene: Empty ballroom → Filled with 1,000 theater-style seats facing the stage → Stage lights, projection, audio → Breakout rooms visible in the foyer → Registration hall bustling with activity → Conference day simulation (morning, midday, evening). Planner stands in the middle of the virtual ballroom, experiencing the attendee journey from registration through keynote to breakout sessions.

Impact: Planner is sold. Conference booking closes. Competing venues (lacking Spatial Cave) lose bids.

Spatial Table — Interactive Floor Plan & Setup Configuration

Deployment: Interactive tangible tabletop in the hotel's event planning department or shared during client meetings (via screen-share if remote).

Why: Event floor plans are intricate: round tables vs. theater-style seating, dance floor placement, stage position, catering station locations, registration flow. Planners manually create PowerPoint floor plans, which is slow and inflexible. Spatial Table allows real-time iteration.

How: Planner sits at Spatial Table with the client (or screen-shares for remote clients). The ballroom floorplan is displayed (2D top-down view). They can:

- Drag round tables to repositioning. System auto-calculates guest capacity, waiter access, and dance floor clearance.
- Drop a stage on the floorplan. System shows sight lines from every table — can all guests see the stage?

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- Add bars, lounge areas, and catering stations. System optimizes foot traffic flow to avoid congestion.
 - Toggle between setup options: Banquet, Theater, Cocktail, Classroom. System instantly reconfigures the floorplan.
 - Visualize the guest experience: Camera view from a guest's table looking at the stage, or standing near the bar.

Impact: Floor plan finalized in 1-2 hours instead of 2-3 weeks of email iterations. Client confidence increases. Planner can accommodate late-breaking requests without panic.

Spatial Stream — Remote Venue Exploration for Couples & Planners

Deployment: Shared link to Spatial Stream sent to planners and clients who can't visit in person.

Why: Many international couples and event planners can't visit the resort in person. Spatial Stream (web-based pixel streaming) lets them explore the venue remotely, asynchronously.

How: Planner sends a link: 'Dear Maria, explore our ballroom and garden here [link]. Walk through the empty space and imagine your wedding. Call me with questions.' Bride clicks link, browser opens Spatial Stream. She walks through the ballroom in her pajamas at 2 AM (different time zone), sees the space, and gets excited. She calls the planner with feedback.

Impact: Remote clients commit to events without visiting. Booking conversions increase. Planner efficiency increases (fewer site visit demands).

Spatial Lens — AR In-Venue Setup Visualization

Deployment: AR tablet (iPad with LiDAR) provided to planner during final walkthrough or to client during site visit.

Why: During the final site visit (1 day before the event), the planner wants to walk the actual empty ballroom and verify the floor plan is achievable. AR overlay on the actual space is more convincing than a 2D floor plan.

How: Planner holds a Spatial Lens AR tablet and walks through the empty ballroom. The tablet's camera shows the real space with AR overlays:

- Round tables (80 of them) rendered as ghostly blue circles on the floor, with chair placement visible.
- Stage raised on the far end, with lighting rigs suspended above.
- Dance floor in the center, glowing beneath virtual dancers.
- Bar positioned at the corner, with bartenders visible.
- Planner walks the setup, verifies that columns don't obstruct tables, that guest flow is logical, and that AV sightlines work.

Impact: Final walkthrough takes 30 minutes instead of 3 hours. No surprises on event day. Planner and hotel staff are perfectly coordinated.

Gamification — Unlock Special Packages

Deployment: Embedded in Spatial Twin and Spatial Lite experiences.

Why: Event planners are users who spend time exploring the venue. Gamification encourages engagement and creates a memorable brand experience.

How: As planner explores Spatial Twin, they unlock achievements:

- 'Explored ballroom' → Unlock 15% discount on florals.
- 'Visited all breakout rooms' → Unlock free welcome reception upgrade.
- 'Configured 3+ floor plans' → Unlock free AV consultation worth USD 5,000.
- Planner becomes invested in the experience and more likely to book.

Impact: Engagement time increases. Booking conversion increases. Perceived value of the hotel increases.

Stakeholder 4: Travel Agents & Tour Operators

Travel agents and tour operators sell hotel rooms. They work for luxury travel agencies, corporate travel management companies, and tour operators. Agents need to showcase properties to clients during consultations, often remotely or during office visits.

Deployment: Where Products Go, Why, How Used

Spatial Stream — Agent Client Consultations

Shared link via email or video call during agent-client consultations. Agents can show properties to clients without in-person visits, dramatically increasing productivity and client confidence.

- Agent productivity increases (more client consultations per week).
- Client confidence increases. Upsells (premium rooms, special packages) increase.

Spatial Lite — Agent's Property Browser

Web-based, lightweight property browsers for quick agent comparisons. Agents make better recommendations based on visual comparison rather than spreadsheets alone.

Spatial Touch at Premium Travel Agency Offices

High-end GPU hardware at luxury travel agency offices creates memorable brand interactions. Clients book premium properties after immersive previews.

Spatial Drive — Agent Structured Presentations

Presentation tool for curated itineraries. Professional narrative ensures consistent, compelling agent presentations across all client consultations.

Spatial Holo at Travel Expos

Holographic display at major travel expos (WTM London, ITB Berlin, ATM Dubai). Eye-catching and creates memorable brand impression, increasing booth traffic and agent awareness.

Spatial Tour (VR) at Travel Fairs

VR headset experience at travel fairs makes an agent an evangelist for the property. Immersive experience is memorable and agents upsell to clients for years.

Stakeholder 5: Guest Pre-Booking Experience (Online)

Guests make booking decisions primarily online. They start on Google, visit hotel websites, browse OTAs, check reviews, and compare competitors. The decision happens in 30-60 minutes, often at midnight.

Deployment: Where Products Go, Why, How Used

Spatial Lite on Hotel Website & App

Interactive room browser on homepage. Instead of static photo galleries, guests see 360° walkthroughs. Website engagement increases 3-5x. Booking conversion increases 20-30%. Room upgrade rates increase.

Spatial Stream — Premium Room Categories

Link for USD 1,000-5,000/night rooms. Spatial Stream provides high-confidence pixel-streamed experience without app/VR headset. Premium-room conversion increases 5-15%. Additional revenue per booking increases USD 500-2,000.

Spatial Agent on Website — AI Concierge

Chatbot widget answering pre-booking questions 24/7 in multiple languages. Website bounce rate decreases. Booking conversion increases. Support ticket volume decreases.

Spatial Map — Location Intelligence

'Location' tab on hotel website shows geospatial context: nearby attractions, distances, transport, nightlife. Guest confidence in location increases. Booking conversion increases.

Gamification — Booking Incentives

Guests exploring rooms unlock achievements (discounts, room upgrades, free services). Engagement time increases. Booking conversion increases. Perceived value increases.

Stakeholder 6: Guest On-Property Experience

After check-in, guests need real-time information and guidance: Where is the spa? What restaurants are open? Can I make a reservation? What's nearby to do? Positive on-property experiences drive brand advocacy.

Deployment: Where Products Go, Why, How Used

Spatial Agent — Lobby Concierge Kiosk

AI avatar kiosk in lobby, at concierge, and at pool/beach. Answers routine questions instantly, freeing staff for higher-value interactions. Guest satisfaction increases. Staff satisfaction increases.

Spatial Map — On-Property Navigation

On-room tablets, lobby, and in-app. Guests explore resort and nearby area. Staff support burden decreases. Ancillary spending increases when guests know about nearby attractions.

Spatial Lens — AR Amenity Discovery

AR tablets at pool/garden. Guests point at locations to see what's inside (spa treatment rooms, restaurant menus, sunset spots). Guest satisfaction increases. Spa/dining/activity spending increases.

Spatial Lite on Guest's Phone

QR code at check-in downloads hotel app with Spatial Lite. Digital room key, resort map, dining reservations, service requests. Guest feels connected. Operational efficiency increases. Guest spending increases.

Stakeholder 7: MICE (Meetings, Incentives, Conferences, Events) Sales

MICE is major hotel revenue segment. Corporate conferences (USD 500K-5M spend), incentive trips (USD 1-10M), events (galas, launches). MICE managers showcase conference facilities, breakout spaces, dining venues, activity options.

Deployment: Where Products Go, Why, How Used

Spatial Twin — Facility Walkthrough

Event planners walk through main ballroom (capacity, setup options), breakout rooms, registration area, exhibition hall, dining venues. Planner assesses facility fit confidently. Hotel wins booking.

Spatial Cave — Immersive Conference Venue Showcase

Planners stand inside virtual ballroom with 5,000 theater seats, see attendee flow, experience breakout sessions. Competing venues lose bids.

Spatial Table — Conference Floor Plan Optimization

Optimize booth placement, stage position, registration flow, breakout assignments, dining zones. System calculates optimal layouts. Conference logistics finalized before event starts.

Spatial Touch — Premium MICE Sales Office

GPU hardware in MICE office for client presentations. Zero-latency experience impresses planners. Large event bookings close faster.

Spatial Stream — Remote Event Planners

Planners explore remotely asynchronously. Geographic reach expands. Booking volume increases.

Spatial Drive — Structured MICE Sales Pitch

Consistent professional presentation covering facility, services, pricing, logistics, references. Proposal comprehensive. Booking conversion increases.

Spatial Agent — Automated RFP Responses

Auto-responds to event RFP inquiries with instant answers (availability, capacity, pricing). RFP response time decreases from 2-3 days to minutes. Conversion increases.

Stakeholder 8: Smart Hotel Operations & Facility Management (IoT Deep Dive)

Modern hotels deploy extensive IoT sensor networks (500-2,000 sensors per 500-room hotel): HVAC with room-level control, smart lighting, door locks, minibar sensors, water meters, electrical meters, elevator monitoring, pool chemistry sensors, laundry equipment, kitchen appliances, security systems. Currently operate independently. Facility managers lack unified visibility. Maintenance is reactive. Energy waste is high. Guest satisfaction correlates poorly with operational data.

Spatial Twin Integration with Hotel BMS/IoT — Real-Time Operational Dashboard

Real-Time Room Occupancy & Environmental Monitoring

3D model shows each room color-coded (Green=comfortable, Yellow=issue, Blue=complaint). Occupancy, temperature, energy, water usage visualized. Maintenance issues detected in real-time. HVAC on empty floors shut off. Leaks detected immediately. Energy consumption decreases 30%. Guest satisfaction increases.

Smart Lighting & Daylight Harvesting

Occupancy sensors + daylight sensors. Room lighting turns on/off automatically. Corridor lights dim during day, brighten evening. Exterior facade lighting automated. Energy savings: 30-45%. Guest comfort increases. Event production quality improves.

Smart Door Locks & Access Management

Guest access tracked with timestamps. Maintenance access granted temporarily via app (no physical key card). Housekeeping badges unlock assigned rooms only. Lock battery levels monitored. Security improves. Lost key card incidents decrease. Maintenance proactive.

Minibar & In-Room Inventory

Weight sensors track real-time inventory. Restock alerts routed to housekeeping. Theft detected. Checkout verified against minibar records. Minibar revenue increases 10-15%. Theft decreases. Billing disputes eliminated.

Water Flow Monitoring & Leak Detection

Per-room consumption measured. Anomalies (high flow = leak) trigger alerts immediately. Leak damage prevented. Irrigation optimized by soil moisture & weather. Pool/spa chemistry monitored auto-dosed. Water consumption decreases 15-20%. Leak damage prevented.

Energy Consumption & Peak Demand Management

Heatmap shows per-zone energy usage. Peak demand management pre-cools/heats spaces during off-peak hours. Solar output integrated, non-essential loads shifted to solar hours. Overall energy decreases 25-35%. Peak demand charges decrease 20-30%.

Elevator Health Monitoring & Predictive Maintenance

Motor, hydraulic, cabin sensors monitored. Blue=normal, Yellow=degradation, Red=fault. Preventive maintenance scheduled before failure. Peak-hour dispatch optimized. Breakdown response instant. Downtime decreases 50-70%. Guest experience improves.

Pool & Spa Water Quality

pH, chlorine, salinity, temperature sensors. Real-time health displayed. Auto-dispenser triggered if levels off. Safety compliance logged automatically. Water quality optimized. Maintenance costs decrease. Regulatory compliance simplified.

Kitchen Equipment Monitoring & HACCP Compliance

Walk-in cooler temperature, oven setpoints, dishwasher health, prep equipment sensors. Temperature failures alert immediately. Equipment lifespan tracked. HACCP compliance logged auto. Food safety guaranteed. Equipment failures prevented. Regulatory compliance automated.

Laundry Operations Optimization

Washer, dryer, pressing equipment health monitored. RFID linens tracked. Water/energy per load optimized. Linen inventory managed. Equipment replacement scheduled before peak season. Efficiency increases. Linen availability prevents housekeeping delays.

Housekeeping Coordination & Maintenance Work Orders

Room status real-time (Occupied, Checkout, Cleaning, Inspected, Ready). Housekeeping tablets show assigned rooms + optimal cleaning route. Guest service requests immediately routed to maintenance with location & details. Inspector verifies cleaned rooms. Housekeeping efficiency increases 15-20%. Maintenance response time decreases. Room-ready time decreases.

Guest Experience Correlation with IoT Data

Guest satisfaction scores correlated with operational data. 'Room too cold' complaints mapped to HVAC malfunctions. 'Elevator noise' complaints mapped to specific elevators. Systemic problems identified and fixed proactively. Guest satisfaction scores increase 20-30%. Operational improvements data-driven.

Stakeholder 9: Resort/Destination Developer & Marketing

Destination resorts (Red Sea Global, AMAALA, NEOM Sindalah, Diriyah) developed over 5-15 years. Pre-opening, entirely virtual. Developers and marketing teams showcase resort to investors, government stakeholders, travel agencies, and media before and after opening.

Deployment: Where Products Go, Why, How Used

Spatial Twin — Pre-Opening Marketing & Investor Walkthroughs

Shared via Spatial Stream (web) to remote stakeholders. USD 5B resort development needs government approvals, investor funding, travel agent buy-in. Stakeholders 'experience' resort 3-5 years before building. Government approval accelerates. Investor confidence increases. Travel agencies sign MOUs. Media coverage intensifies.

Spatial Cave — Investor & Government Presentations

Immersive display at developer HQ. Major funding rounds require presentations conveying ambition and execution. Spatial Cave creates unforgettable experience. Scene: Shoreline before → resort rises (10 years compressed to 60 seconds) → opening day (guests arrive, experience revenue potential) → financial projections. Funding closes faster. Valuation increases. Investor confidence strong.

Spatial World — Multi-Property Operator Dashboard

Web-based portfolio for operators managing multiple resort developments. Shows construction progress, investment status, pre-opening activities, post-opening performance. All projects in unified view. Portfolio management unified. Strategic decisions data-informed. Investor reporting clear.

Spatial Map — Destination Context & Competitive Positioning

Embedded in pre-opening website, investor decks, travel agent presentations. Resort positioned in destination context: beaches, cultural attractions, airports, cities, competing resorts. Marketing appeal conveyed spatially. Traveler understanding of destination unique value clear. Pre-bookings increase.

Spatial Holo — Travel Expo Presence

Holographic display at travel expos (WTM London, ITB Berlin, ATM Dubai). Eye-catching, memorable. Resort rotating in 3D: daytime, evening, nighttime. Attracts 1,000+ booth visitors. Travel agent awareness increases. Media coverage amplified. Pre-launch momentum builds.

Spatial Stream — Pre-Opening Marketing Campaign

Shared links in pre-opening marketing emails, website, influencer previews. 18-24 months before opening, developer builds pre-bookings, generates demand. Recipients explore 18 months early. Pre-bookings convert to revenue 18 months pre-opening (USD 50M+ captured). Investor confidence increases. Travel agents secure allocations. Word-of-mouth spreads.

Spatial Agent — Pre-Opening Booking Assistant

AI chatbot on pre-opening website, available 24/7. Pre-opening, no staff yet. Agent answers questions about amenities, location, activities, booking terms. Potential guests pre-book without staff support. Sales team focuses on enterprise deals (travel agencies, conferences).

Geospatial Intelligence for Hospitality

Spatial Map provides location context essential for hospitality stakeholders: for hotel owners assessing expansion opportunities, for guests understanding location appeal, for event planners assessing accessibility, for destination developers positioning resorts.

Spatial Map Applications in Hospitality

Attraction Mapping & Discovery

Identifies and visualizes attractions near hotel: beaches, restaurants, museums, markets, nightlife, shopping, medical facilities. Guests on hotel app see nearby attractions with reviews and booking links. Hotels upsell experiences.

Competitor Hotel Analysis

Overlay competing hotels in region. Shows which competitors are closer to beach, airport, city center. Hotels assess competitive positioning and justify pricing.

Demand Heatmaps & Market Potential

Overlay population density, income levels, tourist flow. Developers identify high-demand areas for new resort development. Resort operators assess catchment area and market size.

Transport Connectivity & Accessibility

Show roads, public transit, airports, ports, parking. Hotel guests understand how to reach property. Event planners assess attendee accessibility. Developers justify resort investment based on connectivity.

Event Calendar Overlay

Integrate local event calendars (festivals, conferences, sports events). Hotels see when demand spikes and price accordingly. Event planners find venues aligned with event timing.

Walkability & Beachability Scores

Calculate walkability scores (pedestrian access to attractions, transit, retail) and beachability scores (distance to beach, quality, accessibility). Hotels marketed based on scores. Guests assess location appeal quantitatively.

The Complete Guest Journey: From Discovery to Departure

Spatial OS powers the entire guest journey with continuity and immersion:

Discovery & Awareness

Guest discovers hotel via search, travel blogs, or social media. They land on hotel website.

- Spatial Lite: Interactive room browser on homepage. Guest explores suites, pool, spa, restaurants. Engagement: 10-15 minutes. Guest gets excited.
- Spatial Map: Location tab shows attractions, beach distance, nightlife. Guest understands location's appeal.
- Spatial Agent: AI chatbot answers questions. Guest feels heard and connected to hotel.

Consideration & Comparison

Guest compares with competitors (other hotels, resorts, Airbnb).

- Spatial Stream (web): Guest gets link to Spatial Stream tour of presidential suite. Guest walks through at own pace, compares with competitors. Confidence increases.
- Reviews & UGC: Guest reads reviews but trusts Spatial Lite walkthrough more than curated photos.

Booking & Pre-Arrival

Guest books room, receives confirmation.

- Gamification: Guest unlocked '10% booking discount' for exploring 5 rooms on Spatial Lite. Applies discount at checkout.
- QR code at booking: Guest scans to download hotel app (Spatial Lite, maps, Agent, dining reservations).
- Spatial Agent: Guest contacts AI agent 2 weeks before arrival. 'Recommend restaurants for our anniversary dinner?' Agent suggests with Spatial Map. Guest pre-books restaurant.

Arrival & Check-In

Guest arrives at hotel.

- Digital key: Guest's phone app unlocks room (Spatial Lite on hotel app).
- In-room orientation: Tablet shows Spatial Map of resort layout, dining, activities. Guest understands property immediately.

On-Property Stay

Guest spends 3-7 days on property.

- Spatial Agent (lobby kiosk): Guest asks 'Where is spa?' Agent responds, books massage, gives directions. Guest satisfied.
- Spatial Lens (at pool): Guest points AR tablet at garden. Overlay shows spa treatment rooms inside. Guest impressed, decides to get massage.
- Spatial Map (on phone): Guest explores nearby town, discovers local restaurant not on hotel's list. Guest enjoys authentic experience.

Checkout & Departure

Guest departs.

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- Digital checkout: Guest checks out via app, no front desk visit. Payment processed.
 - Feedback: Spatial Agent asks: 'How was your stay?' Guest rates 5 stars, provides feedback. Data feeds back to hotel operations.

Post-Departure & Advocacy

Guest returns home.

- Review & social sharing: Guest posts photos, writes 5-star review on Booking.com. Mentions Spatial App made navigation easy.
- Loyalty program: Guest gets loyalty points. Email invites guest to book next vacation or sister properties. Includes Spatial Stream link to new resort.

Smart Hotel Operations Impact Summary

Integration of Spatial Twin with hotel IoT/BMS delivers quantifiable operational improvements:

Metric	Baseline	With Spatial Twin IoT Integration
Energy consumption	USD 8-12/sq.ft./year	USD 5.5-7/sq.ft./year (-35-40%)
Water usage	300-500 L/guest/night	250-350 L/guest/night (-15-20%)
HVAC maintenance costs	USD 50K-100K/year	USD 30K-50K/year (-25-35%)
Elevator downtime	40-80 hours/year	10-15 hours/year (-70-75%)
Guest temperature complaints	5-10% of guests	1-2% of guests (-80%)
Room-ready time (post-checkout)	60-90 minutes	45-60 minutes (-25-30%)
Maintenance response time	4-8 hours	30-60 minutes (-85-90%)
Equipment failure (predictive detection)	0% (reactive)	80-90% (before failure)
Guest satisfaction (NPS)	40-50	65-75 (+30-40%)
Staff efficiency (housekeeping)	8-10 rooms/shift	10-12 rooms/shift (+20-25%)

ROI by Stakeholder

Spatial OS delivers clear ROI for each stakeholder group:

Stakeholder	Investment	Annual ROI / Impact
Hotel Owner / C-Suite	USD 100K-300K	USD 500K-2M (upsells, energy, maintenance, occupancy)
Sales & Revenue	USD 50K	USD 200K-500K (upgrade conversion, premium revenue)
Wedding/Event Planners	USD 30K	USD 100K-300K (conversion +30-40%, avg booking +USD 50K)
Travel Agents	USD 20K	USD 50K-150K (conversion, repeat, commissions)
Guest Bookings	USD 40K	USD 300K-800K (conversion +20-30%, upgrade +15-25%, less OTA)
Facility Mgmt (IoT)	USD 150K-500K	USD 800K-2M (energy/maintenance/water, guest satisfaction)
Destination Developer	USD 200K-500K	USD 2M-5M (pre-opening bookings 18 months early, investor confidence)

Implementation Roadmap: 18-Month Deployment

Successful Spatial OS deployment for a 500-room luxury hotel across 9 stakeholders:

Phase 1: Content Creation & Foundation (Months 1-3)

- Drone survey: Photogrammetry + LiDAR scan of entire resort (exteriors, landscaping, common areas).
- Interior 360° photography: Every room type, restaurants, spa, gym, conference spaces.
- CAD/Revit integration: Import architectural CAD for masterplan context.
- BMS integration: API connectivity to hotel's HVAC, lighting, water, energy systems.
- Deliverable: Spatial Twin model, content database, BMS data pipeline.

Phase 2: Product Deployment for Guest-Facing Channels (Months 4-8)

- Spatial Lite: Deploy on hotel website, OTA integration (Booking.com, Expedia), mobile app.
- Spatial Agent: Web chatbot + lobby kiosk avatar.
- Spatial Map: Website location tab, in-app navigation.
- Spatial Stream: Beta links to corporate clients, travel agents.
- Deliverable: Website/app integration, chatbot live, guest-facing content.

Phase 3: B2B Sales & Event Planning Tools (Months 9-12)

- Spatial Touch: Install in sales office, event planning office.
- Spatial Drive: Sales deck templates for hotel sales manager, event coordinator.
- Spatial Table: Deploy tabletop for floor plan planning (optional).

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- Travel agent portal: API access to Spatial Stream for travel agencies.
 - Deliverable: Sales tools operational, travel agent integrations live.

Phase 4: Operations & IoT Integration (Months 13-15)

- Spatial Twin BMS dashboard: Real-time sensor overlays (room temperature, energy, water, occupancy).
- Housekeeping app: Spatial Lite-based dispatch with optimal routes.
- Maintenance tablets: Work order management, technician location dispatch.
- IoT alerts: Predictive maintenance, leak detection, equipment health monitoring.
- Deliverable: Operations dashboard live, 90% BMS sensor integration complete.

Phase 5: Immersive Hardware & Marketing (Months 16-18)

- Spatial Cave: Install 270° immersive display in boardroom (optional).
- Spatial Holo: Install holographic display in HQ lobby (optional).
- Spatial Tour (VR): VR experience packages for travel expos, premium travel agency offices.
- Spatial Lens: AR tablets for pool/spa concierge.
- Marketing campaign: LinkedIn, Instagram, travel press coverage of Spatial capabilities.
- Deliverable: Full Spatial OS platform live across all 9 stakeholders.

18-Month Outcomes

- Room upgrade conversion: +20% (USD 500K annual revenue increase).
- Event booking conversion: +35% (USD 200K-500K annual impact).
- Energy savings: 35-40% reduction (USD 300K-500K annual savings).

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- Maintenance cost reduction: 25-35% (USD 100K-200K annual savings).
 - Guest satisfaction (NPS): +25-30 points.
 - Staff productivity: +20% (housekeeping, maintenance, operations).
 - Total Year 1 ROI: USD 1.5-2.5M on USD 500K-1M investment = 150-250% ROI.

Case Studies & References

Spatial OS is applicable to hospitality developments across the MENA region and globally:

Red Sea Global (Saudi Arabia)

AMAALA and other Red Sea resorts: USD 8-10B development, 5,000+ hotel rooms, destination-level appeal. Spatial OS used for investor presentations, travel agent marketing, pre-opening bookings, post-opening guest experience.

NEOM Sindalah (Saudi Arabia)

Ultra-luxury island resort, 500+ rooms, pristine design. Spatial Map showcases destination context (Red Sea diving, Saudi cultural attractions). Spatial Twin for event sales and wedding planning.

Diriyah (Saudi Arabia)

UNESCO World Heritage luxury hospitality district, 10,000+ rooms, mixed-use development. Spatial Map shows historical sites, restaurants, retail. Spatial Twin for architectural visualization and property sales.

Dubai Luxury Hotels

Leading 5-star chains: Burj Al Arab, Emirates Palace, Atlantis The Palm, One&Only. Spatial OS for room upselling, event planning, guest experience, portfolio management across 20+ properties.

Mumbai Luxury Properties

ITC Grand Central, Taj Hotels, Oberoi properties: Spatial OS for wedding sales (India's largest wedding market: 50,000+ destination weddings annually), event bookings, guest experience.

Get Started

PROPVR delivers the complete Spatial OS platform — from photorealistic digital twins and gamified walkthroughs to holographic displays, immersive rooms, AI assistants, and pixel-streamed web experiences. One content investment powers every product across every channel.

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