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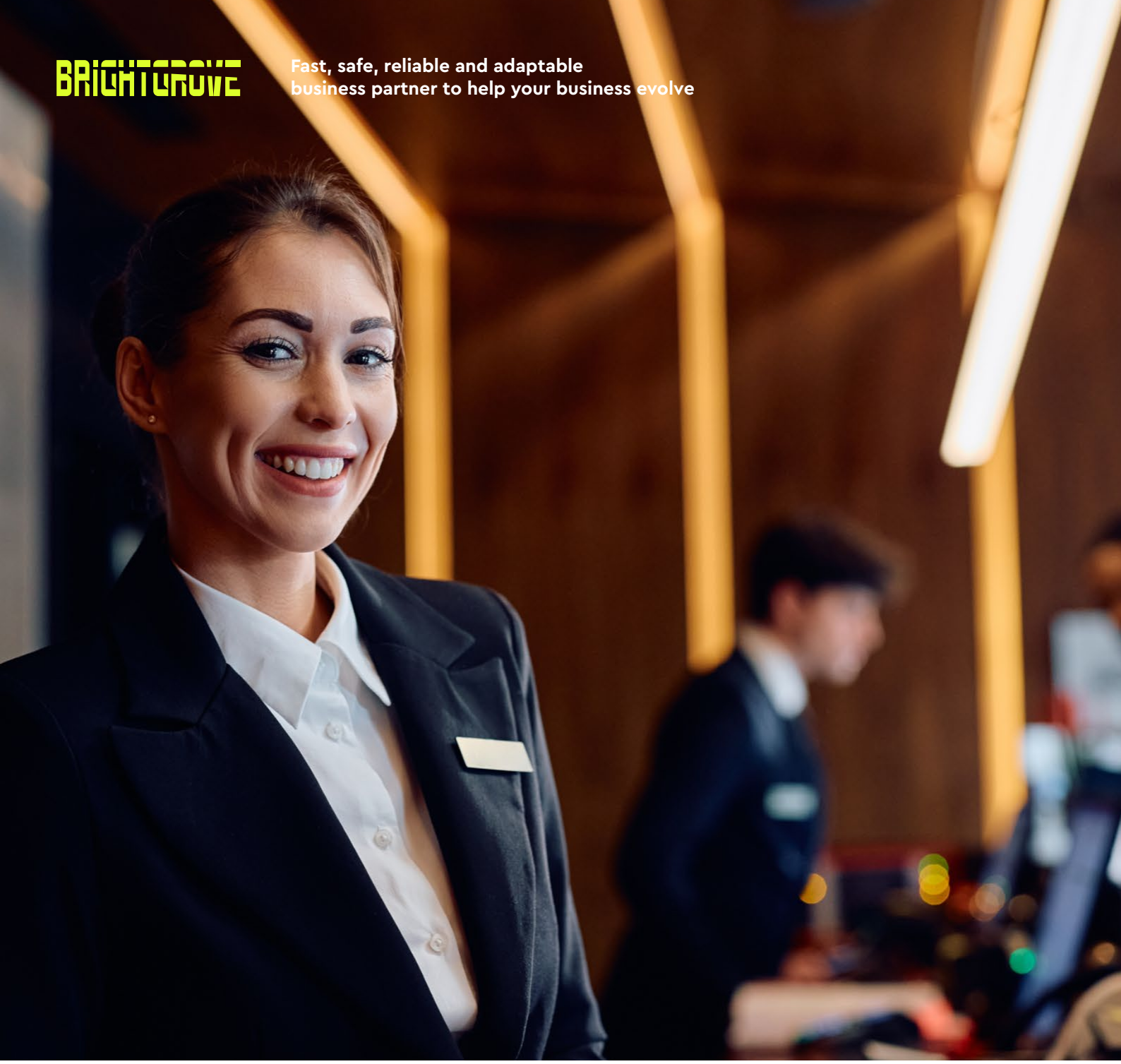


USE CASE

Digital Transformation of Commission Collection for a Global Hotel Supplier

PROJECT OVERVIEW

Our team was engaged by a global hotel supplier to implement the "Paywall" initiative – a comprehensive digital transformation of their commission collection process. This project aimed to resolve significant cash flow challenges by creating an automated payment processing system that would collect commissions at the moment of transaction rather than through the traditional post-stay collection processes.

BUSINESS CONTEXT & CHALLENGE

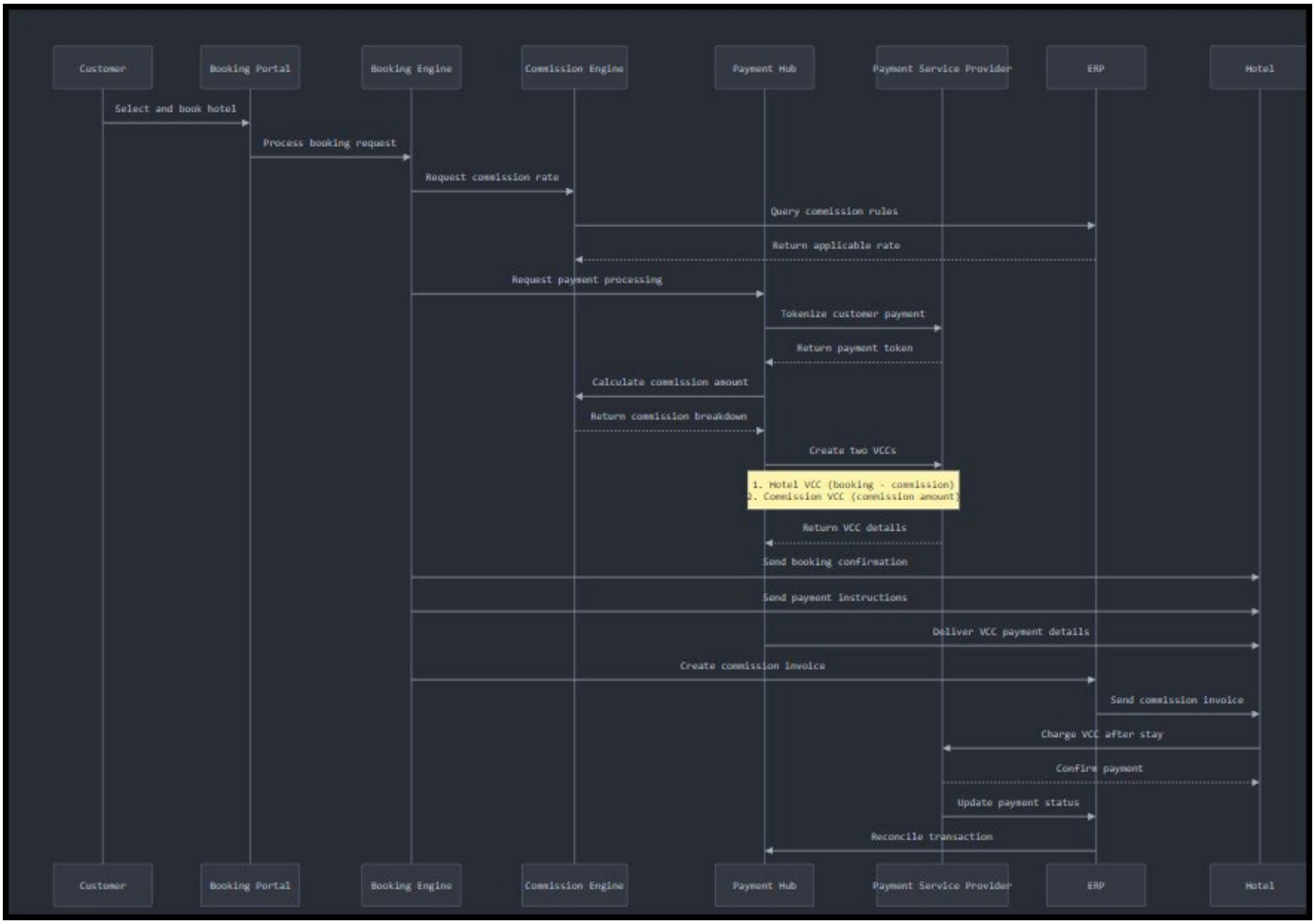
The client's financial data revealed critical inefficiencies in their commission collection model:

- Significant sum in outstanding commission payments with large % overdue payment terms
- €1+ million annual cost due to high interest rates on delayed payments
- Complex, fragmented collection processes that varied between chain hotels (managed through agencies) and independent properties (managed through decentralized processes)
- Increasingly challenging global financial environment with EU inflation reaching 9.2% in 2022

This presented an opportunity to apply expertise in financial technology transformation, process digitalization, and payment integration systems.

BUSINESS PROCESS MODELING AND VISUALIZATION

One of the key activities in the discovery phase was comprehensive business process modeling using to create visual representations of the current and future states.



Beyond the high-level process flow, we created detailed swim lane diagrams to map the interactions between different systems and stakeholders.

These visualizations were crucial for:

- Aligning stakeholders on the current process pain points
- Creating a shared understanding of the target state
- Identifying system integration requirements
- Highlighting process optimization opportunities
- Detecting potential implementation risks

END-TO-END IMPLEMENTATION APPROACH

1. Requirements Collection & Business Analysis Phase

Our team of business analysts conducted extensive discovery sessions with key stakeholders across multiple departments:

- **Process Mapping Workshops:** Documented the existing commission collection workflows for different hotel categories and booking channels
- **Financial Data Analysis:** Analyzed payment timelines, commission rates, and outstanding payments to quantify the business impact
- **Stakeholder Interviews:** Conducted structured interviews with Finance, Operations, Hotel Solutions, and Legal teams
- **Customer Journey Mapping:** Created detailed flows for different booking scenarios (prepaid rates, flexible rates, meeting & group bookings)
- **Regulatory Compliance Assessment:** Evaluated PCI DSS, PSD2, and other financial regulations impacting payment processing

Key insights that shaped the technical approach:

- A large portion of business travel bookings and almost all enterprise solution bookings already involved credit card guarantees
- Customer card charges often faced high failure rates in current systems
- Payment processing differed considerably between independent and chain hotels

2. Technical Architecture & System Design

Based on the requirements analysis, we designed a comprehensive technical architecture to enable the Paywall approach:

Core System Components:

Commission Rule Engine:

- Developed a scalable service to retrieve and calculate commission rates in real-time
- Created mirrored ERP system to handle high transaction volumes
- Implemented caching mechanisms to optimize performance
- Built SOAP web services interfaces for cross-system communication

Payment Processing Integration:

- Designed integrations with payment service providers
- Created a dual VCC (Virtual Credit Card) management system:
- Primary VCC for hotel payment (booking value minus commission)
- Secondary VCC for commission allocation
- Implemented tokenization system for secure card handling
- Built PCI-compliant interfaces for credit card information exchange

Booking System Modifications:

- Enhanced booking engine to flag Paywall transactions
- Modified internal inventory management systems to support new payment instructions
- Updated Card Delivery Systems to manage VCC distribution
- Redesigned Reservation Info Push Service for connected hotels

Financial Systems Integration:

- Created automated commission invoice generation
- Developed reconciliation processes between payment providers and ERP systems
- Built flags in the ERP to prevent duplicate commission requests
- Implemented accounting interfaces for financial reporting

Integration Architecture:

- Microservices architecture using REST APIs for new components
- SOAP interfaces for legacy system integration
- Event-driven architecture for booking status updates
- Real-time and batch processing depending on system requirements

3. UI/UX Design & Implementation

Our UX team redesigned several key interfaces to support the Paywall process:

Customer-Facing Booking Flow:

- Redesigned payment capture screens to improve conversion
- Implemented clear communication about payment timing and guarantees
- Created simplified 3DS verification flow
- Developed responsive designs for mobile and desktop users
- Added intelligent error handling for payment failures

Hotel Partner Portal:

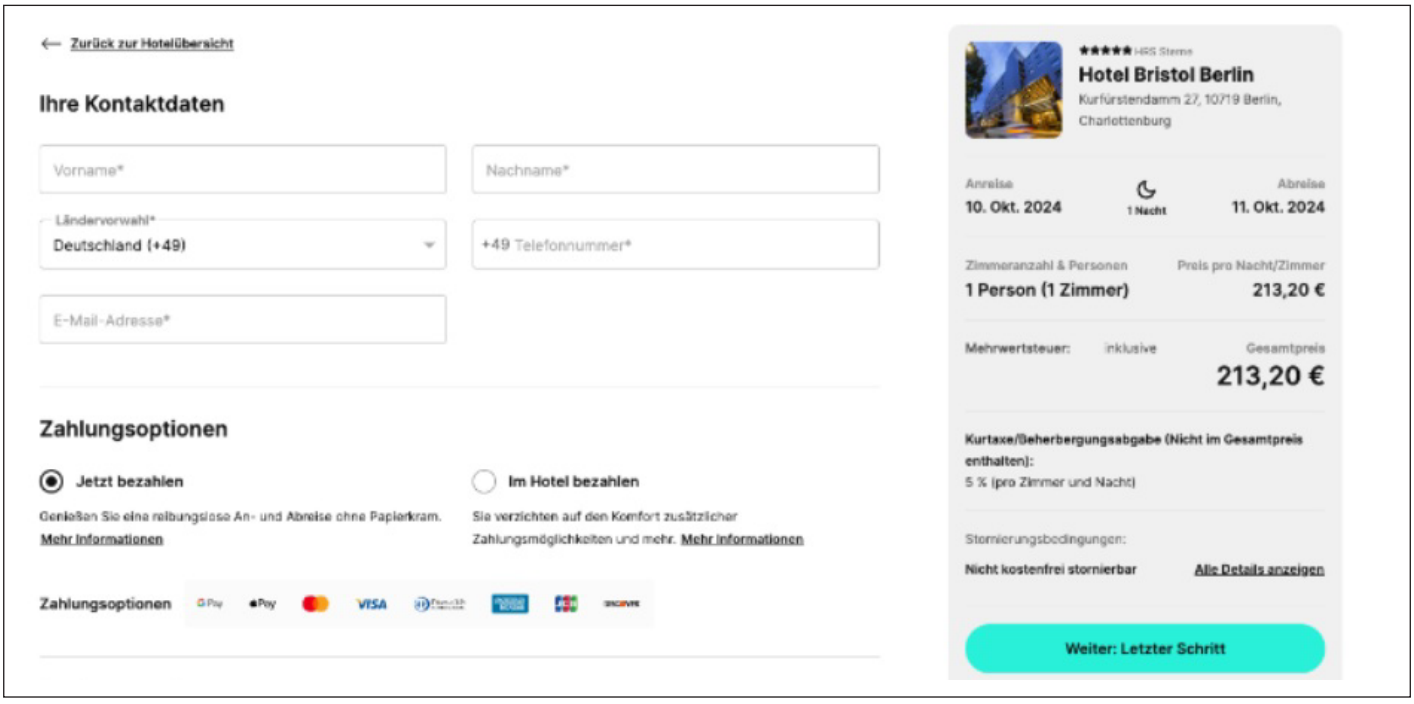
- Designed new payment instruction displays
- Created commission transparency tools
- Implemented invoice management interfaces
- Developed payment status dashboards

Internal Operations Dashboard:

- Built comprehensive monitoring tools for payment processes
- Created exception handling interfaces
- Designed reconciliation workflows
- Implemented reporting visualizations

The UX design process included:

- User research with corporate bookers and hotel finance teams
- Wireframing and prototyping of payment flows
- Usability testing to optimize conversion rates
- A/B testing of payment messaging



4. Development & Implementation

We assembled a cross-functional team to execute the implementation:

Team Composition:

- Product Owners with financial services background
- Business Analysts specializing in process optimization
- Data Scientists with AI capabilities for payment pattern analysis
- UX Researchers and Designers with financial interfaces expertise
- Full-stack Developers with payment integration experience
- QA Engineers specialized in financial systems
- DevOps Engineers for CI/CD pipeline management

Technical Implementation Details:

- **Frontend:** React.js for customer-facing interfaces, with Tailwind CSS for responsive design
- **Backend:** Java microservices for payment processing, Node.js for APIs
- **Database:** PostgreSQL for transactional data, MongoDB for event logging
- **Integration:** Apache Camel for ESB functionality, Kafka for event streaming
- **Security:** Tokenization services, encryption layers, PCI-compliant infrastructure
- **DevOps:** Kubernetes orchestration, Jenkins pipelines, Terraform for infrastructure

The development followed a phased approach:

Phase I: Implementation for First Distribution Channel:

- Commission calculation for complex multi-day bookings
- Post-event invoice reconciliation
- Integration with meeting booking platform

Phase II: Extension to Second Distribution Channel:

- High-volume payment processing
- Integration with multiple booking channels
- Enhanced messaging systems

Phase III: Integration Third Distribution Channel

- Corporate booking tool integration
- Policy compliance features
- Reporting for corporate clients

5. Testing & Validation

We implemented a comprehensive testing strategy:

Unit & Integration Testing:

- Automated test suites for all microservices
- API contract testing
- Database integrity validation

Performance Testing:

- Load testing simulating peak booking periods
- Stress testing of commission calculation engine
- Response time optimization

Security Testing:

- PCI DSS compliance validation
- Penetration testing of payment interfaces
- Data encryption verification

User Acceptance Testing:

- Controlled rollout to selected hotels
- Live testing with a partner hotel
- Monitoring of booking conversion rates

Business Metrics Validation:

- Commission collection improvement tracking
- Comparison of payment success rates
- Monitoring of booking conversion impacts

TECHNICAL CHALLENGES & SOLUTIONS

Throughout the implementation, we addressed several significant technical challenges:

Handling Diverse Payment Scenarios:

Challenge: Different booking types (non-refundable, flexible, meetings) required distinct payment handling

Solution: Implemented a rule-based payment orchestration system that applied specific logic based on rate type, booking channel, and hotel category

Commission Calculation Complexity:

Challenge: Commission rates varied based on multiple factors including hotel chain, booking value, and distribution channel

Solution: Created a sophisticated commission calculation engine with caching mechanisms and fallback logic

Legacy System Integration:

Challenge: Integration with ERP system that wasn't designed for 24/7 high-volume operations

Solution: Developed a mirrored commission rule system with asynchronous synchronization to reduce load on legacy systems

Payment Failure Handling:

Challenge: High decline rates (30–40%) for customer card charges

Solution: Implemented intelligent retry mechanisms, alternative payment workflows, and optimized 3DS verification processes

Cross-Channel Consistency:

Challenge: Maintaining consistent payment experiences across diverse booking channels

Solution: Created a centralized payment processing service with channel-specific adapters

RESULTS AND BUSINESS IMPACT

The Paywall initiative demonstrated both successes and challenges:

Successes:

- Successful technical implementation of MVP enterprise solution with all core components
- Functional commission service integration with payment providers
- Successful implementation of Paywall flag in corporate booking portals
- Effective 3DS authentication integration
- Ability to toggle Paywall ON/OFF in production without issues

Challenges:

- Significant decrease in "Book to Confirm" conversion rates for business travel customers, leading to project pause
- Integration difficulties between different business units
- Operational complexities in handling payment exceptions

STRATEGIC INSIGHTS & RECOMMENDATIONS

Based on the implementation experience, we provided strategic recommendations for future financial technology initiatives to our client:

Portfolio Management Framework:

- Establish formal portfolio evaluation criteria
- Implement balanced scorecard approach to project assessment
- Create project prioritization framework aligned with business strategy

Enhanced Requirements Management:

- Implement structured user story development with acceptance criteria
- Conduct regular requirement review sessions
- Define MVP and FVP scopes early in project lifecycle

Technical Architecture Recommendations:

- Develop modular payment processing components
- Implement A/B testing infrastructure for payment flows
- Create unified customer payment experience across channels

Testing Strategy Improvements:

- Establish cross-team testing coordination
- Implement automated end-to-end testing pipelines
- Develop conversion impact assessment methodology

CONCLUSION

The Paywall initiative represents a complex digital transformation of financial processes in the business travel industry. While the project encountered challenges that led to its temporary pause, our comprehensive implementation approach generated valuable insights into payment process digitalization.

The technical architecture, integration approach, and UI/UX enhancements laid the groundwork for future optimization of commission collection processes. The expertise applied—spanning financial technology, payment processing, and user experience design—demonstrates the specialized talent required for successful digital transformation in financial services.

Ready to take the next step?

Reach us today at info@brightgrove.com