

**MODERNIZING OPPORTUNITY-TO-ORDER WORKFLOWS THROUGH
SAP BTP INTEGRATION ARCHITECTURE**

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Abstract

The Opportunity-to-Order (O2O) workflow is central to revenue realization for enterprises, yet many organizations continue to rely on legacy Oracle-based infrastructures—such as SOA Suite, B2B, BPM, and custom-built applications like POST—that are costly, complex, and inefficient. In this case, these systems incurred annual licensing costs exceeding \$3 million, while requiring 75% of orders to undergo manual intervention, leading to delays, scalability bottlenecks, and increased operational overhead.

To address these challenges, we undertook a strategic modernization program by adopting the SAP Business Technology Platform (BTP) Integration Suite as the digital backbone of its O2O process. This migration replaced Oracle B2B with SAP BTP Trading Partner Management, Oracle SOA and BPM with SAP Cloud Integration, Oracle OHS with SAP API Management, and eliminated dependencies on POST, Rosetta Net, and .NET frameworks. Orders from multiple intake channels—including XML, XLS, and Salesforce CPQ—are now staged in PostgreSQL and validated through a rules engine before flowing seamlessly into SAP ECC.

Results demonstrate significant improvements: touchless orders increased from 26% to 50%, overall processing latency was reduced by 35%, and annual licensing costs were reduced by over 90% (from \$3M to \$300K). Additionally, automation contributed to \$600K in operational savings and improved order accuracy. The findings confirm that SAP BTP offers a scalable, cost-effective, and future-proof solution that enhances order automation, simplifies architecture, and provides a foundation for AI-driven anomaly detection and predictive quoting.

This research contributes a practical reference model for enterprises seeking to modernize O2O workflows by transitioning away from Oracle-based infrastructures toward cloud-native, API-first platforms.

Keywords: SAP BTP, Opportunity-to-Order, Workflow Modernization, Integration Architecture, Digital Transformation, Oracle Migration, API Management, B2B Integration, Salesforce CPQ, Order Automation, Cloud-Native Platforms.

1. Introduction

The Opportunity-to-Order (O2O) workflow is one of the most critical processes within the enterprise value chain, serving as the bridge between sales activities and revenue realization. In large-scale organizations, O2O processes span multiple systems, stakeholders, and integration layers. These processes are expected to be scalable, accurate, and cost-efficient, as

even minor inefficiencies directly impact customer experience, revenue recognition, and operational costs.

Despite its importance, many enterprises continue to rely on legacy infrastructures that were designed for earlier generations of business demands. A leading cybersecurity provider—O2O operations were historically supported by a custom-built application (POST) combined with multiple Oracle-based middleware platforms including Oracle SOA Suite [1], Oracle B2B [2], Oracle BPM, Oracle HTTP Server (OHS), and Rosetta Net frameworks. While these systems had delivered value in earlier decades, they presented several challenges in 2024–2025:

- **High Licensing and Maintenance Costs:** Oracle licensing exceeded \$3 million annually, significantly increasing the total cost of ownership.
- **Manual Dependencies:** Nearly 75% of orders required manual intervention during validation or staging, handled by an operations team of more than 60 people, at a cost of **\$4.3 million annually**.
- **Scalability Bottlenecks:** The system could not handle increasing order volumes or distributor onboarding requirements without significant rework.
- **Unsupported Technology Risks:** POST and legacy Oracle tools were outdated, no longer supported with security patches, and highly prone to outages.

These challenges created a strategic imperative to modernize the O2O process. The modernization goals were fourfold:

1. **Reduce manual interventions** by applying automated validations and a modern rules engine.
2. **Lower the total cost of ownership (TCO)** by migrating away from expensive Oracle licenses.
3. **Increase scalability and agility** by adopting cloud-native, API-first integration.
4. **Simplify the architecture** to reduce vendor dependencies and ensure long-term maintainability.

To address these goals, the SAP Business Technology Platform (BTP) Integration Suite [3] was selected as the foundation for its next-generation O2O workflows. SAP BTP was chosen after a comparative evaluation of alternative platforms including MuleSoft, Boomi, Oracle Cloud, and Apigee. The decision was based on SAP BTP's lower cost of ownership (\$300K annually), tight alignment with SAP ECC and Salesforce CPQ [4], real-time orchestration capabilities, and robust B2B integration features.

The modernization initiative involved retiring POST and replacing legacy Oracle components with SAP BTP services such as Cloud Integration, API Management, and Trading Partner Management. Orders originating from multiple intake channels (XML orders, XLS uploads, and Salesforce CPQ quotes) were redesigned to flow through PostgreSQL staging, pass through a rules-based validation layer (covering account, tax ware, quote, and grant validations), and then be automatically created in SAP ECC.

By modernizing its O2O workflows with SAP BTP, we have achieved the following results:

- Touchless order processing increased from 26% to 50%.
- Quote automation increased from 12% to over 77% within two quarters.
- Licensing costs were reduced by over 90%, from \$3M to \$300K annually.
- Processing latency decreased by 35%, accelerating order fulfillment.
- Operational savings of \$600K per year were realized through automation and reallocation of manual effort.

This paper presents a detailed account of O2O modernization journey, including the technology evaluation process, system architecture, implementation methodology, and key results. The study not only highlights the practical challenges of replacing Oracle with SAP BTP but also provides a reference model for other enterprises seeking to modernize their order processing systems in alignment with digital transformation and cloud adoption strategies.

2. Background and Literature Review

2.1 Legacy Order-to-Cash and Opportunity-to-Order Systems

Enterprise order-to-cash (O2C) and opportunity-to-order (O2O) workflows have historically been supported by monolithic middleware and custom-built staging systems. Oracle's integration suite—comprising SOA Suite, B2B, BPM, and OHS—was widely adopted in the 2000s and 2010s due to its ability to handle partner transactions and business workflows. In parallel, organizations built custom applications such as POST, which staged, validated, and routed distributor and partner orders before fulfillment in ERP systems like SAP ECC.

While effective for earlier workloads, these systems now present critical limitations:

- **Escalating Licensing Costs:** Oracle licensing for large enterprises exceeds \$3M annually.
- **Operational Inefficiencies:** Up to 75% of orders require manual validation due to fragmented workflows.
- **Complex Architectures:** Multiple overlapping technologies (Rosetta Net, .NET frameworks, POST) introduce high support overhead.
- **Risk of Obsolescence:** Applications like POST are unsupported and no longer patched, creating security and compliance risks.

2.2 The Push for Digital Transformation

The past decade has seen a strong enterprise push toward digital transformation—replacing fragmented, legacy integration models with cloud-native, API-driven, and low-code/no-code platforms. Key drivers include:

1. **Cost Optimization:** Reducing licensing and infrastructure costs.
2. **Scalability:** Supporting exponential growth in distributor and channel orders.

3. **Automation:** Enabling touchless order processing to minimize manual interventions.
4. **Agility:** Responding quickly to new partner onboarding, acquisitions, and product launches.

Industry studies emphasize that 70–80% of enterprise orders require manual rework due to mismatched data across quoting, ordering, and fulfillment systems. This creates a strong case for upstream validations during quoting and automated reconciliation across systems such as Salesforce CPQ and SAP ECC.

2.3 Integration Platform Market Landscape

The Integration Platform as a Service (iPaaS) market has evolved rapidly, offering enterprises multiple options for modernizing O2O workflows. Key players include:

- **SAP Business Technology Platform (BTP):** Provides Integration Suite, API Management, Trading Partner Management, Event Mesh, and Business AI services. Recognized by Gartner as a leader in iPaaS.
- **MuleSoft Any point Platform:** Strong API lifecycle management and connectivity for heterogeneous systems, but higher TCO and longer implementation timelines [5].
- **Boomi Integration:** Popular for SaaS-to-SaaS and low-code integrations but lacks deep SAP alignment [6].
- **Oracle Cloud Integration (OIC):** Positioned as a successor to Oracle SOA, but costly and still tied to Oracle licensing models.
- **Apigee X (Google):** Excellent API gateway and developer management but limited in B2B trading partner orchestration [7].

A comparative study of these platforms shows that SAP BTP outperforms in cost-efficiency, SAP ecosystem alignment, and real-time orchestration, making it a preferred choice for enterprises already invested in SAP back-office systems.

2.4 Related Work on O2O Automation

Several research and industry initiatives highlight the impact of automation on O2O and O2C pipelines:

- **Workflow Automation:** Prior work has shown that upstream validations in CPQ reduce order fallouts and manual interventions by 30–40%.
- **B2B Partner Integration:** Studies on trading partner management emphasize the need for standardization of XML and EDI exchanges across global distributors.
- **Quote-to-Order Accuracy:** Research highlights the role of real-time quote validation against ERP master data in reducing duplicate account creation and late-stage order rejections.
- **AI in Order Processing:** Early academic papers demonstrate the potential of AI-based anomaly detection for fraud prevention, order exception management, and predictive pricing—an area still underexplored in O2O research.

2.5 Research Gap

Although digital transformation [8] and iPaaS adoption have been extensively discussed, practical case studies of large-scale O2O modernization are limited. Most literature focuses on either O2C automation or integration platform evaluations in isolation. This paper contributes by documenting a comprehensive enterprise migration case studying showing how replaced Oracle-based O2O systems with SAP BTP, the measurable outcomes achieved, and the strategic roadmap for AI-enabled future enhancements

3. Technology Evaluation and Comparison Before Selecting SAP BTP [9]

3.1 Evaluation Criteria

To identify the most suitable platform for modernizing O2O workflows, we have conducted a comparative evaluation across five dimensions:

1. **Total Cost of Ownership (TCO)** – licensing, infrastructure, and support costs.
2. **Ecosystem Alignment** – native compatibility with SAP ECC and Salesforce CPQ.
3. **Latency and Performance** – ability to support real-time order intake and validation.
4. **Automation Capabilities** – built-in rules engines, validation services, and touchless order enablement.
5. **Scalability and Future-readiness** – cloud-native design, AI-readiness, and partner onboarding support.

This evaluation was performed through platform benchmarks, architecture workshops, vendor assessments, and pilot integrations.

3.2 Platform Alternatives

3.2.1 SAP Business Technology Platform (BTP) (fig.1)

- **Strengths:**
 - Native alignment with SAP ECC and S/4 HANA.
 - Integration Suite with Cloud Integration, Event Mesh, and Trading Partner Management (TPM).
 - API Management for secure, scalable API exposure.
 - Low TCO.[10]
 - Built-in validation services and orchestration.
 - Enterprise Low code Application Platform [11]
- **Weaknesses:** Limited out-of-the-box connectors for certain non-SAP SaaS platforms.

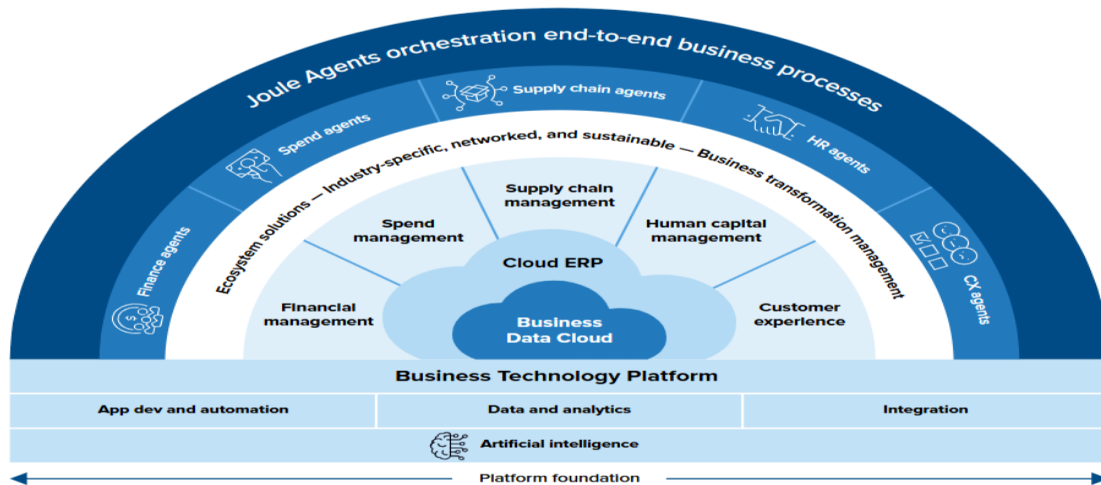


Figure 1. SAP Business Technology Platform

3.2.2 MuleSoft Any point Platform (fig.2)

- **Strengths:**
 - Industry-leading API lifecycle management.
 - Strong developer ecosystem and reusable connectors.
- **Weaknesses:**
 - High licensing costs and consulting-heavy implementations.
 - Weaker SAP-native integration compared to BTP.

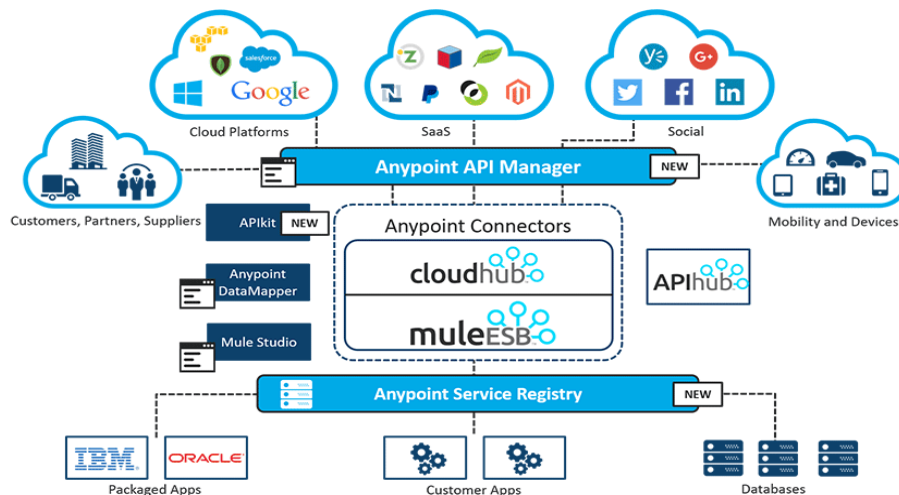


Figure 2. MuleSoft Any point Platform Architecture

3.2.3 Boomi Integration (fig.3)

- **Strengths:**
 - Low-code integration platform.
 - Large catalog of SaaS connectors.

- **Weaknesses:**
 - Limited scalability for complex B2B processes.
 - No native SAP CPQ alignment.

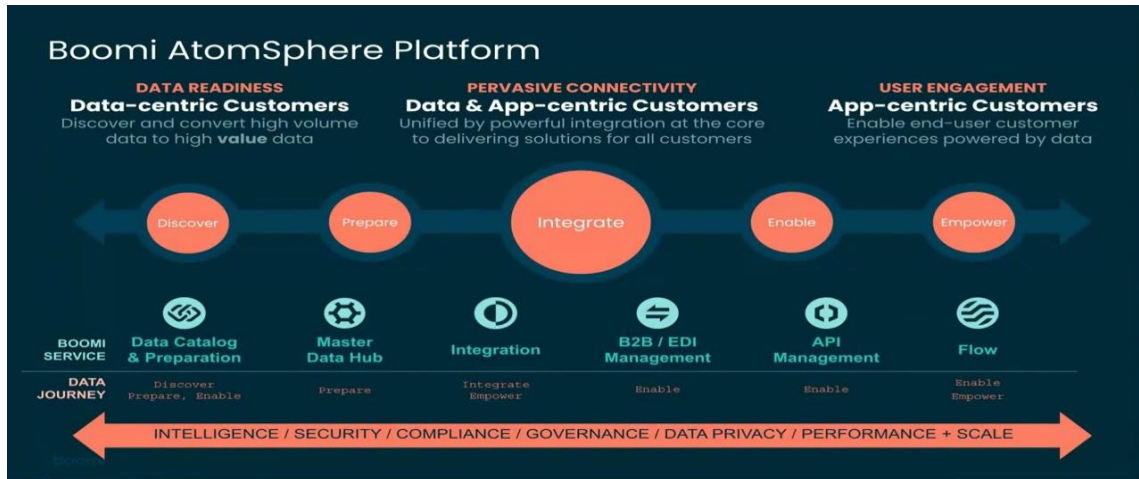


Figure 3. Boomi Atmosphere Platform

3.2.4 Oracle Cloud Integration (OIC)

- **Strengths:**
 - Natural upgrade path from Oracle SOA Suite.
 - Strong support for existing Oracle customers.
- **Weaknesses:**
 - Continued dependency on expensive Oracle licensing models.
 - Does not significantly reduce TCO.
 - Lacks flexibility in multi-cloud environments.

3.2.5 Google Apigee X

- **Strengths:**
 - Market leader in API Gateway and API monetization.
 - Strong analytics and developer onboarding capabilities.
- **Weaknesses:**
 - Not designed for B2B partner onboarding or full O2O automation.
 - would require additional platforms for validation and SAP integration.

3.3 Comparative Decision Matrix

Criterion	SAP BTP	MuleSoft	Boomi	Oracle Cloud	Apigee X
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TCO	Low	High	Medium	High	Medium
SAP/CPQ Alignment	Strong	Weak	Weak	Medium	Weak
Latency & Performance	High	Medium	Medium	Medium	High
Automation	Strong	Medium	Medium	Weak	Weak
Scalability	High	High	Medium	Medium	High
Future AI-readiness	Strong	Medium	Medium	Weak	Medium

Below (fig.4) are the technologies comparison vs characteristics before selecting the SAP BTP:

Characteristic	Oracle Suite	MuleSoft	Boomi	Google Application Integration	SAP BTP
SAP Compatibility	High	Medium	Medium	Low	High
B2B/EDI Support	Yes	Yes	Yes	No	Yes
Licensing Model	High, Legacy	Consumption-based	Flat	Consumption-based	Flat, Predictable
Real-Time Capabilities	Medium	High	Medium	Medium	High
Ease of Integration	Medium	High	Medium	Medium	High

Figure 4: Technology Comparison Before Selecting the SAP BTP

SAP is a Leader in this Magic Quadrant. It offers SAP Integration Suite [12], which is part of the SAP Business Technology Platform (SAP BTP). It provides application, data, process, AI and business integration capabilities, both within and outside the SAP application ecosystem.

3.4 Decision Rationale

After thorough evaluation, SAP BTP (fig.5) was selected as the preferred platform because it:

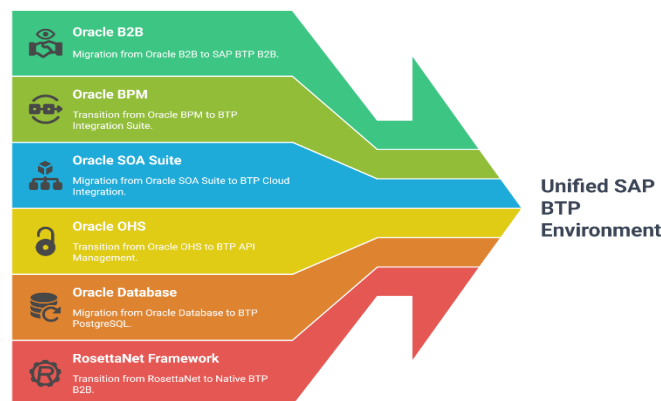


Figure 5: Legacy to Modern Integration

- TCO reduced by 90%, from \$3M to \$300K annually.
- Provided tight ecosystem alignment with both SAP ECC and Salesforce CPQ, unlike MuleSoft or Boomi.
- Offered real-time orchestration capabilities through Cloud Integration and Event Mesh.
- Enabled partner onboarding and B2B automation via Trading Partner Management [13].
- Created a future-ready foundation for AI-based anomaly detection, predictive quote validations, and touchless order pipelines.

While MuleSoft and Boomi were strong contenders (fig.6), their lack of deep SAP alignment made them suboptimal. Oracle Cloud was rejected due to high cost and continued vendor lock-in, while Apigee X was assessed as insufficient for full O2O modernization, though valuable for API monetization.

Figure 6. Magic Quadrant for Integration Platform as a Service [14]



SAP BTP was selected due to its lower cost of ownership (fig.7), tight SAP ecosystem integration, real-time orchestration, and powerful B2B capabilities.

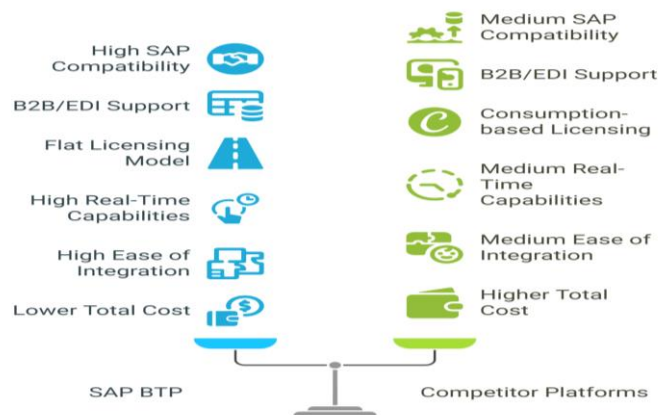


Figure 7: SAP BTP offers superior compatibility and cost effectiveness

4. Methodology

The modernization of Opportunity-to-Order (O2O) workflow required not only a technology migration but also a structured evaluation and validation framework. The methodology followed a design science approach, supported by architecture analysis, stakeholder engagement, and performance benchmarking.

4.1 Research Design

The initiative was guided by a design–evaluate–validate cycle. The design phase focused on creating the target SAP BTP architecture, while the evaluation phase compared it against legacy POST and Oracle systems. Validation was performed through system monitoring, pilot implementations, and controlled distributor rollouts.

Key components of the design framework included:

- **Legacy-to-modern mapping:** documenting existing Oracle SOA, BPM, and POST workflows and mapping them to SAP BTP Integration Suite equivalents.
- **Architecture validation:** using migration blueprints, system logs, and transaction flow diagrams.
- **Data-driven benchmarking:** measuring latency, throughput, and error rates before and after migration.
- **Functional validation:** testing XML, XLS, and Salesforce CPQ order scenarios end-to-end.

4.2 Audience and Stakeholder Engagement

The migration impacted a wide spectrum of stakeholders, necessitating active engagement throughout the program:

- **Solution Architects:** responsible for design validation and platform integration.
- **CPQ Leads & Order Operations Teams:** provided input on order accuracy and validation gaps.
- **Revenue Operations & Channel Partners:** ensured distributor adoption and alignment.
- **Licensing and Finance Teams:** evaluated cost reduction impacts.
- **SAP Order Fulfillment Experts:** supported validation with SAP ECC and S/4 HANA.

Workshops and cross-functional sessions ensured consensus on system behavior, validation rules, and integration checkpoints.

4.3 Data Collection and Validation Steps

Validation followed a multi-step process to ensure both functional correctness and performance optimization:

1. **Functional Mapping:** Compared order flows from legacy POST/Oracle stack to new SAP BTP flows.

2. **Scenario Analysis:** tested XML-based distributor orders, XLS batch uploads, and CPQ quotes.
3. **Validation Rules:** applied checks for accounts, tax ware, grant, and quote reconciliation.
4. **Order Lifecycle Monitoring:** tracked acknowledgements, confirmations, and error handling through SAP BTP dashboards.
5. **Throughput Benchmarking:** measured processing latency reductions compared to POST.

4.4 Analysis Plan

A **triangulated analysis method** was applied, combining:

- **Quantitative KPIs:** touchless order percentage, latency reduction, licensing and operational cost savings.
- **Qualitative Inputs:** stakeholder interviews and distributor feedback.
- **Comparative Benchmarks:** before-and-after results across Oracle vs SAP BTP platforms.

This approach ensured that the modernization effort was validated not only on cost efficiency but also on scalability, accuracy, and business impact.

5. System Architecture

The architecture of the Opportunity-to-Order (O2O) workflow underwent a complete transformation as retired its legacy Oracle- and POST-based systems in favor of a cloud-native SAP BTP integration backbone. This section contrasts the pre-migration architecture with the post-migration target state.

5.1 Pre-Migration Architecture

The legacy system (fig.8) was based on a combination of Oracle middleware and a custom-built application known as **POST**, which staged and validated orders before sending them into SAP ECC.

Key characteristics of the pre-migration architecture included:

- **Order Intake Channels:** Distributor orders were received via XML over HTTPS and uploaded Excel files, while direct quotes were staged manually.
- **POST Application:** Performed limited validation and order review. However, it required manual intervention for ~75% of all orders, resulting in processing delays.
- **Oracle SOA Suite & BPM:** Managed integration flows and approval workflows but were costly to license and complex to maintain.
- **Oracle B2B & Rosetta Net:** Enabled partner communication but lacked flexibility for new distributors.

- **Oracle HTTP Server (OHS) and .NET Frameworks:** Provided connectivity but were outdated and security vulnerable.
- **Validation Gaps:** Account mismatches, duplicate creation, and late validations occurred at order processing rather than at quoting.

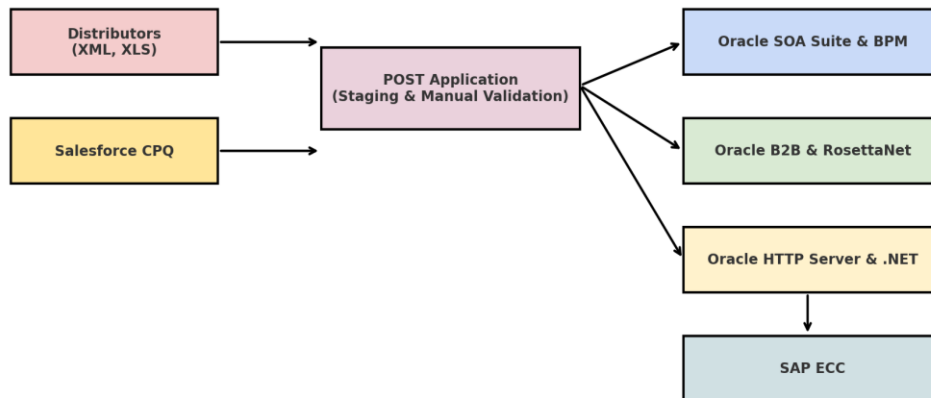


Figure 8: Pre-Migration Architecture (Oracle SOA, BPM, B2B, POST, .NET)

The overall architecture was complex, fragmented, and expensive, with annual Oracle licensing costs exceeding \$3M and an operations team of 60+ personnel required to manage manual exceptions.

5.2 Post-Migration Architecture (fig.9)

The target state adopted SAP Business Technology Platform (BTP) Integration Suite as the backbone, supported by modern cloud-native services.

Key characteristics of the post-migration architecture included:

- **Order Intake:** Orders from XML, XLS, and Salesforce CPQ were received through Trading Partner Management (TPM) and API Gateway.
- **Integration Backbone:**
 - Cloud Integration orchestrated message routing and transformation.
 - API Management secured external and internal service consumption.
 - Event Mesh enabled asynchronous event-driven updates.
- **Staging & Validation:** Orders staged in PostgreSQL and validated through a rules engine, including:
 - Account validation
 - Tax ware validation
 - Grant validation
 - Quote validation

- Approval workflows

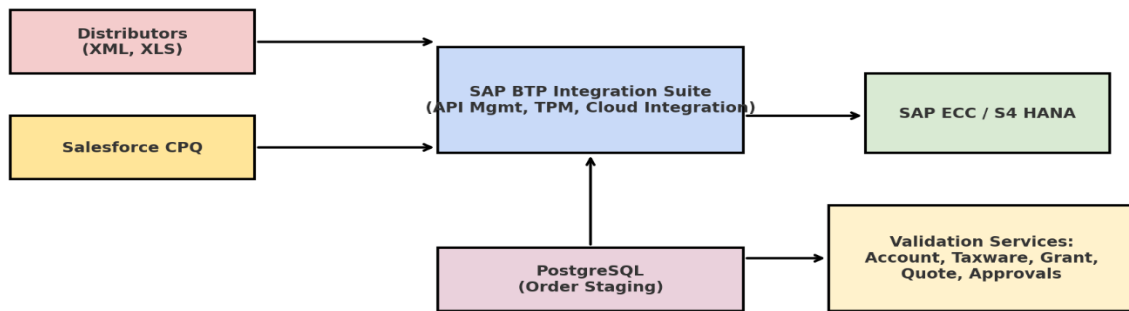


Figure 9: Post-Migration Architecture (SAP BTP Integration Suite, TPM, API Mgmt., PostgreSQL, SAP ECC)

- **ERP Integration:** Validated orders were seamlessly created in SAP ECC / S/4 HANA, with acknowledgements and error handling managed via SAP BTP dashboards.
- **Operational Dashboards:** Error handling, retry logic, and lifecycle audit trails provided real-time visibility.

This modernized architecture delivered real-time orchestration, reduced latency, and 50% touchless order processing.

5.3 Validation Workflow (fig.10)

A critical enhancement of the modernization program was the introduction of a rules-based validation engine, which automated checks that were previously handled manually or deferred until late in the order process.

The validation workflow included:

1. **Account Validation:** Ensure all proposals map to a valid SAP customer ID.
2. **Tax ware Validation:** Confirm compliance with regional tax rules.
3. **Grant Validation:** Verify grants, promotions, and entitlements.
4. **Quote Validation:** Match Salesforce CPQ data against order line items.
5. **Approval:** Enforce rules for special pricing, reseller authorizations, and distributor eligibility.

This upstream validation framework ensured data integrity, reduced duplicate account creation, and minimized late-stage order rejections.

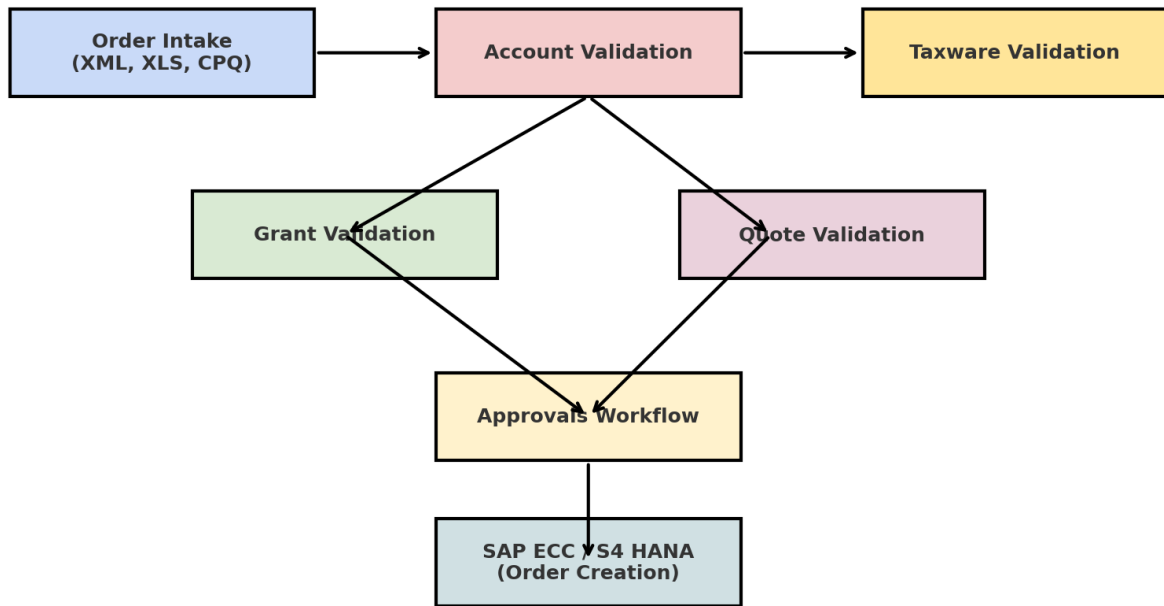


Figure 10: Validation Workflow (Account, Tax ware, Grant, Quote, Approvals)

6. Results and Analysis

The modernization (fig.11) of Opportunity-to-Order (O2O) workflows through the adoption of SAP Business Technology Platform (BTP) delivered measurable improvements across operational efficiency, cost optimization, and system reliability. Results were assessed using both quantitative KPIs and qualitative feedback from stakeholders.

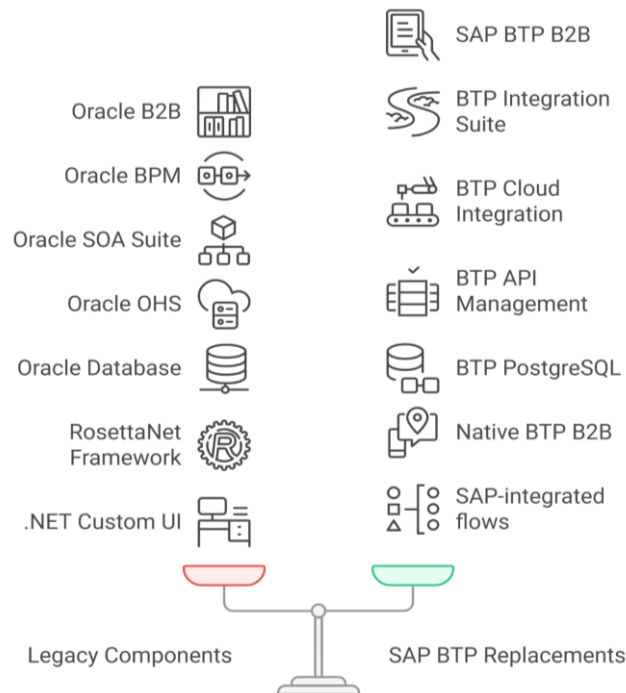


Figure 11: Modernize with SAP BTP for Enhanced Efficiency

6.1 Key Performance Indicators

1. Touchless Orders

- Prior to migration, only 26% of orders were processed touchlessly, with the remainder requiring manual intervention in POST.
- Post-migration, touchless orders increased to 50%, representing a 92% improvement in automation.

2. Quote Automation

- Quote automation improved significantly during phased rollout:
 - Q1: 12% automated
 - Q2: 40% automated
 - Q3: 77% automated
 - Post-go-live: 90%+ automated.

3. Licensing and Operational Costs

- Oracle licensing costs of \$3M annually were reduced to \$300K with SAP BTP.
- Automation drove an additional \$600K in annual operational savings, primarily from reduced manual order processing.

4. Latency Reduction

- Average processing latency decreased by 35% due to real-time validations and streamlined order staging in PostgreSQL.

5. System Reliability

- Outages and security risks associated with unsupported POST and Oracle components were eliminated.
- Built-ins retry mechanisms and monitoring dashboards in SAP BTP improved order lifecycle visibility.

6.2 Stakeholder Feedback

- **Order Operations Team:** Reported significant reduction in manual backlog and ability to reallocate staff to exception handling and governance.
- **Salesforce CPQ Leads:** Validations at the quote stage reduced duplicate account creation and improved quoting accuracy.
- **Finance & Licensing Teams:** Confirmed substantial cost savings and improved compliance controls.
- **Distributors:** Provided positive feedback on simplified XML/XLS onboarding and reduced turnaround times.

6.3 Comparative Analysis

Compared to alternatives such as MuleSoft and Boomi, SAP BTP achieved faster time-to-value due to its native SAP alignment and prebuilt integration accelerators.

- MuleSoft would have required additional integration layers for SAP ECC.
- Boomi’s low-code approach was suitable for SaaS, but lacked the scalability required high-volume distributor transactions.
- Oracle Cloud Integration would have maintained high licensing costs with limited impact on modernization.

Thus, SAP BTP was validated as both a cost-efficient and strategically aligned choice, delivering measurable ROI [15] within the first year of implementation.

6.4 Summary of Results:

Metric	Legacy (Oracle + POST)	Modernized (SAP BTP)	Improvement
Touchless Orders	26%	50%	+92%
Quote Automation	12%	90%+	+650%
Annual Licensing Cost	\$3M	\$300K	-90%
Operational Savings	–	\$600K	New savings
Latency	Baseline	-35%	Faster
Security/Reliability	Unsupported, outage risk	Vendor-supported, stable	Eliminated risks

7. Discussion

The modernization of Opportunity-to-Order (O2O) workflow provides a valuable case study in replacing legacy middleware with a cloud-native integration platform. The results demonstrate that SAP BTP not only addressed immediate challenges of cost, scalability, and automation but also created a future-ready foundation for continued digital transformation [16].

7.1 Interpretation of Results

The increase in touchless orders from 26% to 50% shows that upstream validations and automated rules can drastically reduce manual dependencies. Similarly, the rise in quote automation from 12% to 90%+ confirms that shifting validation closer to the quoting stage eliminates late-stage rejections and duplicate account creation.

The 35% latency reduction validates the efficiency of cloud-native orchestration, while the 90% reduction in licensing costs illustrates the financial impact of moving away from Oracle’s

expensive licensing model. Operational savings of \$600K annually reinforce the case for automation beyond direct licensing costs.

7.2 Comparison with Alternative Platforms

Compared to MuleSoft and Boomi, SAP BTP demonstrated stronger alignment with SAP ECC and Salesforce CPQ, which were critical to order-to-cash processes. MuleSoft's API-first model offered strong external connectivity but lacked prebuilt accelerators for SAP systems, requiring additional integration layers. Boomi's low-code approach was effective for SaaS-to-SaaS scenarios but insufficient for high-volume distributor onboarding and B2B orchestration.

Oracle Cloud Integration (OIC), while a logical extension of the legacy stack, did not resolve the fundamental issue of cost. It maintained dependence on Oracle's licensing model and did not simplify the architecture. Apigee X provided excellent API gateway capabilities but lacked trading partner management and end-to-end order lifecycle orchestration.

Thus, SAP BTP emerged as the most balanced choice—cost-efficient, SAP-aligned, and scalable.

7.3 Implications for Enterprise

Modernization has several implications for broader enterprise operations:

- **Scalability:** The simplified architecture allowed for rapid distributor onboarding and higher order throughput.
- **Governance:** Account hierarchy standardization and validation automation reduced dependency on tribal knowledge.
- **Workforce Optimization:** Order operations teams shifted from manual processing to exception handling and governance.
- **Vendor Rationalization:** Eliminating Oracle, Rosetta Net, and .NET dependencies reduce complexity and long-term risk.

7.4 Limitations

Despite its successes, the current modernization has certain limitations:

- **AI/ML Adoption:** The system has not yet integrated AI-based anomaly detection or predictive quote recommendations.
- **Distributor Dependency:** Adoption timelines were dependent on distributor readiness and willingness to transition to XML/XLS standards.
- **Non-SAP Ecosystem Integration:** While SAP alignment was strong, integration with certain non-SAP SaaS applications required additional effort.

8. Future Research Directions

While the modernization of Opportunity-to-Order (O2O) workflow delivered substantial improvements in cost efficiency, automation, and scalability, several opportunities remain for future enhancements. These directions align with broader trends in artificial intelligence (AI), advanced analytics, and low-code automation.

8.1 AI-Enhanced Quote Prediction

One promising area is the integration of SAP Business AI services into the O2O pipeline. Predictive models could:

- Anticipate the likelihood of a quote converting to an order.
- Recommend optimal discounting or bundling strategies.
- Flag anomalies in quote structures, reducing the need for manual review.

Such predictive quoting capabilities would further increase touchless order percentages and reduce cycle times.

8.2 AI-Driven Anomaly Detection

Currently, exception handling relies on predefined rules and manual intervention. AI/ML models could be trained on historical order data to:

- Detect unusual order patterns (e.g., duplicate accounts, invalid distributor mappings).
- Flag potential fraud or compliance risks in real time.
- Automate routing of exceptions to the appropriate operations teams.

This approach would increase resilience, reduce risk, and enhance order accuracy beyond rule-based methods.

8.3 Advanced Analytics for Order Lifecycle Monitoring

While SAP BTP provides dashboards for order tracking, advanced analytics could be layered on top to provide:

- **Predictive SLAs:** anticipating potential delays before they occur.
- **What-if simulations:** testing the impact of distributor onboarding, pricing models, or product launches on order flow.
- **Real-time performance tuning:** optimizing integration flows dynamically based on load and latency patterns.

8.4 Low-Code Distributor Onboarding

Although XML/XLS distributor onboarding was streamlined, manual configuration still poses a bottleneck. Future research could explore low-code or no-code onboarding portals, allowing channel partners to self-configure integrations. This would accelerate adoption and reduce dependency on IT resources.

8.5 Towards 100% Touchless Orders

The long-term vision is to achieve fully touchless O2O workflows. Key enablers include:

- Expanding validation coverage to include all upstream checks.
- Automating exception handling with AI and intelligent workflows.
- Integrating robotic process automation (RPA) for edge cases where legacy systems persist.
- Continuous learning models that adapt validations based on evolving distributors and customer behaviors.

8.6 Broader Research Implications

In this case highlights the broader applicability of O2O modernization. Future academic and industry research could:

- Benchmark multiple enterprises migrating from Oracle to SAP BTP.
- Compare cost savings and ROI across different industries (e.g., manufacturing, telecommunications, healthcare).
- Investigate the role of AI in bridging gaps between quoting, ordering, and fulfillment systems.

9. Conclusion

The modernization of Opportunity-to-Order (O2O) workflows represents a significant step forward in aligning enterprise order management with the demands of digital transformation. By retiring POST and Oracle-based middleware (SOA Suite, BPM, B2B, Rosetta Net, OHS, .NET) and migrating to the SAP Business Technology Platform (BTP), achieved measurable improvements in efficiency, scalability, and cost optimization.

The migration delivered:

- An increase in touchless order processing from 26% to 50%, reducing manual dependencies.
- A leap in quote automation from 12% to 90%+, minimizing downstream errors and duplicate account creation.
- A 90% reduction in licensing costs, from \$3M annually to \$300K.
- Operational savings of \$600K annually through automation and workforce reallocation.
- Improved system reliability and resilience, eliminating risks associated with unsupported POST and Oracle platforms.

Beyond immediate efficiency gains, this modernization provided a future-ready integration backbone, with SAP BTP Integration Suite, API Management, and Trading Partner Management enabling real-time order orchestration. The introduction of a rules-based validation framework improved data integrity and reduced order fallout, while cloud-native architecture lowered technical debt and enhanced scalability.

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This case study underscores the strategic value of platform rationalization and cloud-native integration. By selecting SAP BTP over alternatives such as MuleSoft, Boomi, Oracle Cloud, and Apigee, not only reduced costs but also ensured long-term alignment with SAP ECC and Salesforce CPQ ecosystems.

The findings position this initiative as a reference model for other enterprises seeking to modernize their O2O workflows. Looking forward, the integration of AI-driven predictive quoting, anomaly detection, and touchless exception handling presents a pathway toward fully automated, intelligent order pipelines.

In conclusion, the modernization of O2O workflows through SAP BTP demonstrates how enterprises can achieve both immediate operational benefits and strategic readiness for future innovations, making it a pivotal milestone in digital transformation journeys.

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