NeoBank Digital – Interest & Pricing Management Module

1. Document Control

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2. Executive Summary

The Interest & Pricing Management Module defines, calculates, and manages loan interest rates, fees, and penalties across all lending products. It enables NeoBank to dynamically configure pricing rules based on risk tiers, regulatory guidelines, and promotional offers. The objective is to maximize profitability while ensuring fairness, compliance, and customer transparency.

3. Objectives

- Provide dynamic interest calculation based on customer risk profile.
- Automate penalty and late fee calculations.
- Ensure pricing compliance with central bank regulations.
- Support promotional interest rates and seasonal campaigns.
- Improve transparency in loan pricing for customers.

4. Scope

In-Scope

- Interest rate configuration engine.
- Risk-based pricing (linked with credit scoring).
- Fee & penalty calculation engine.
- APIs for loan origination and repayment modules.
- Promotional campaign support (discounted interest).
- Transparent disclosure of APR (Annual Percentage Rate).

Out-of-Scope

- Loan approval workflow (covered in Loan Application Module).
- Collections process (covered in Repayment Module).
- Fraud detection (covered in Fraud & Risk Module).

5. Key Features

1. **Interest Configuration Engine** – define base rates, margins, and adjustment factors.
2. **Risk-Based Pricing** – adjust rates based on credit score tiers.
3. **Penalty Calculation** – late fees, prepayment penalties, foreclosure charges.
4. **Promotional Campaigns** – temporary discounted rates.
5. **Regulatory Compliance Checks** – ensure rates comply with local laws.
6. **APR Disclosure** – transparent display of total cost of borrowing.
7. **APIs for Integration** – provide rates to loan application & repayment modules.

6. User Stories

- As a **customer**, I want to see my applicable loan interest rate clearly so that I can make an informed decision.
- As a **finance officer**, I want to configure penalty rules so that charges are automated and consistent.
- As a **risk officer**, I want rates adjusted by customer risk profile to ensure fair pricing.
- As a **compliance officer**, I want to ensure all rates comply with central bank rules.

7. Integrations

- **Credit Scoring Engine** – input for risk-based pricing.
- **Loan Application Module** – fetch applicable interest rates during application.
- **Repayment Module** – calculate penalties and outstanding balances.
- **Regulatory Systems** – compliance reporting.

8. Authentication & Security

- Authentication: OAuth2.0 with RBAC.
- Data Encryption: AES-256 at rest, TLS 1.3 in transit.
- Secure audit logs of pricing changes.

- Access restricted to finance and compliance teams.

9. Non-Functional Requirements (NFRs)

- **Performance:** Rate calculation ≤ 1 second.
- **Availability:** 99.9% uptime.
- **Scalability:** Handle 200,000 daily rate calculations.
- **Compliance:** RBI lending rate guidelines, GDPR.
- **Security:** Immutable logs for all interest configuration changes.

10. Risks & Mitigations

Risk	Impact	Mitigation
Incorrect rate configuration	Customer disputes	Dual-approval workflow for pricing changes
Regulatory non-compliance	Fines & penalties	Automated compliance validation rules
System downtime	Loan disbursal delays	High availability architecture
Lack of transparency	Customer dissatisfaction	Mandatory APR disclosure in all loan documents

11. Success Metrics

- Accuracy of Interest Calculations: ≥ 99.9%.
- SLA for Rate API Response: ≤ 1 second.
- Compliance Incidents: Zero.
- Customer Transparency Rating (survey): ≥ 4.5/5.

12. Dependencies

- Credit Scoring Engine availability.
- Loan Application and Repayment Modules.
- Regulatory compliance approvals.

13. Timeline & Milestones

- **Week 1–2:** Requirement gathering & design.
- **Week 3–4:** Interest configuration engine development.
- **Week 5:** Risk-based pricing integration.
- **Week 6:** Penalty calculation engine.
- **Week 7:** Regulatory compliance testing.
- **Week 8:** Internal testing.
- **Week 9:** UAT & finance sign-off.
- **Week 10:** Production rollout.

14. Appendix

- Glossary of Terms: APR, Risk-Based Pricing, Foreclosure Charges.
- Reference Standards: RBI Lending Rate Guidelines, Basel Standards.