Noyan Fintech

Tivani
Instant empowerment

Platform Technical Overview

Architecture, capabilities and deployment model of the Tivani credit infrastructure

Platform Architecture · Capabilities · Deployment Model

Platform Overview

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1 Tivani at a Glance

Tivani is a credit and lending infrastructure platform that covers the entire credit lifecycle on a single, API-first architecture. This document describes the platform's technical layers for the engineering and product teams evaluating an integration.

3 layers Admin / Business / Consumer architecture	**6** modules core: from origination to collections	**5** wallets Cash, EWA, BNPL, Voucher, Facilities	**12** standards international financial and security

Technical Pillars of the Platform

- **Event-driven architecture:** Built on CQRS, Domain-Driven Design (DDD), Event Sourcing and the Saga pattern — to guarantee data consistency and fault resilience.
- **Multi-currency wallet:** Simultaneous management of fiat currencies and crypto on a single core, with the ability to add a new currency dynamically — without redesign.
- **Deployment on your server:** An encrypted image on the organization's own infrastructure (On-Premise) or delivered as SaaS — data never leaves your control.
- **Banking-grade accounting:** Double-entry ledger per IFRS, daily account reconciliation per Basel III, and the four-eyes principle for sensitive transactions.
- **Verified security:** All 10 OWASP Top 10 items passed, a security scan with zero findings, and encryption in transit and at rest.

2 Three-Layer Architecture

Tivani consists of three logical layers, each designed for a distinct type of user. This separation guarantees security, independent scalability, and a dedicated experience for each group.

Side C — End-User Layer
Mobile app | Five wallets | Transactions, purchase, statement, investment

Side B — Organization Layer (Underwriter)
Management dashboard | Credit allocation | Corporate vouchers | Documents and contracts | Financial reporting

Side A — Administration Layer
Organization definition | Credit plans and fees | Compliance engine | High-level reporting

Responsibility of Each Layer

Layer	User	Key Capabilities
Side A — Administration	Administrating team (Noyan or parent organization)	Defining organizations, credit plans, fee structure, user categorization, compliance engine, high-level reporting
Side B — Organization	Underwriter / client organization	User management, credit allocation and management, corporate vouchers, financial dashboard, documents and contracts
Side C — End User	Credit consumer	Mobile app, five wallets, withdrawal, in-network purchase, investment, statement and history

3 Core Modules

The credit lifecycle in Tivani — from the moment of application to final settlement — is covered by six integrated modules. Each module is developed and scaled independently, yet all operate on a shared data core. Below, each module is described together with its technical sub-capabilities.

Module	Role in the Credit Cycle
Lending Core	Defining credit products, plans, rates and business rules
Origination	Application, identity verification, credit assessment, credit decision, allocation
Servicing	Installment management, statements, renewal, repayment, modifications
Collections	Automated reminders, delay follow-up, management of overdue receivables
Payments	Credit payment gateway, settlement, connection to banking networks
AI Scoring	Automated data-driven credit decisioning — the heart of the platform's differentiation

Lending Core and Credit Payment Gateway (CPG)

The Lending Core defines credit products, and the Credit Payment Gateway (CPG) executes them at the point of payment.

Capability	Technical Description
Credit Plan definition	Defining a plan as an installment purchase (BNPL) or a credit line, with a variable number of installments and months
Installment management	Automated scheduling, calculation and tracking of installments throughout the cycle
Credit Payment Gateway (CPG)	Executing credit at the moment of payment, connected to the transaction path

Merchant Management

Capability	Technical Description
Payment acceptance	Payment via QR code or online within the merchant network
Third-party payment connectivity	Ability to connect to third-party payment gateways
Merchant network management	Defining and managing the merchants authorized for each credit product

Accounting Module — IFRS Alignment

Tivani's accounting module is built on a double-entry ledger and is aligned with a set of International Financial Reporting Standards (IFRS). Each standard covers one aspect of financial reporting:

Standard	Function in Tivani
IFRS 15	Revenue recognition
IFRS 9	Financial instruments and expected credit loss (ECL)
IFRS 13	Fair value measurement
IFRS 7	Disclosure of financial-instrument risk
IAS 1 / IAS 7	Presentation of financial statements and statement of cash flows
Accounting periods	Closing and managing financial periods

Supporting Sub-Systems

Beyond the core modules, a set of sub-systems supports the full cycle:

Sub-System	Function
Ledger	Double-entry accounting and recording of every transaction
User Wallet	Balance and credit management at user level
Employee EWA	Salary advance for the organization's employees
Scoring	Credit decision engine
eCRM	Managing interaction and the relationship cycle with credit users
Payment	Transaction execution and settlement

Activation Order and Dependencies

In a typical deployment, modules are activated in this order: first the Lending Core and Origination (to define the product and onboard users), then Servicing and Payments (to run the cycle), and finally Collections and AI Scoring (to optimize risk and yield). This phasing allows an organization to reach operation quickly and enable advanced capabilities gradually.

> **Advantage of modular architecture:** An organization can activate only the modules it needs and add the rest in later phases — without redesigning the infrastructure.

4 Five Wallets and Their Mechanics

Tivani offers five wallet types, each covering a distinct financial need. All operate on the same shared double-entry accounting core, but the rules and flow of each differ. Every wallet is **multi-currency** — meaning it can hold fiat currencies and crypto simultaneously, with the ability to add a new currency dynamically.

Wallet	Technical Mechanism	Use
Cash	Positive balance, direct transfer and payment	Ordinary purchase, gift card, money transfer
Cash Credit (EWA)	Cash credit line with a limit and repayment	Salary advance, employee earned-wage access
Non-Cash Credit (BNPL)	Credit restricted to a merchant network, in installments	Installment purchase within a defined network
Corporate Voucher	Credit locked to a category, brand or network	Welfare voucher, purchase limited to authorized goods
Facilities	Loan with collateral or credit assessment	Loan secured against an investment portfolio

Key Capability: Locked Voucher

A corporate voucher can be locked at the level of a product category, a specific brand, or a defined merchant network. For example, an organization can issue a welfare voucher usable only for purchasing authorized items within a defined network — without the organization becoming involved in logistics or settlement.

5 Intelligent Credit Scoring Engine

The scoring engine is the heart of Tivani's technical differentiation. In a fraction of a second it produces an explainable credit decision from hundreds of parameters — without slowing the user experience. Its output is not a “black box,” but a decision with a transparent rationale.

Six Tools of the Engine

Tool	Technical Function
Live Liability View	Real-time aggregation of each user's active loans and bounced cheques from connected sources
Cheque Signal	Analysis of the user's cheque status as a predictive risk indicator
Delay Pattern Engine	Detection of repayment-delay patterns at the daily level (uniform or non-uniform)
Scoring API	Processing hundreds of parameters (amount, bank type, collateral, installments, history) in milliseconds
Behavioral Graph	Extraction of behavioral signals from the connected partner ecosystem
Explainable Feedback	Generating a transparent rationale for every decision — supporting compliance and transparency

Why this technical differentiation matters: More accurate scoring directly reduces the default rate and raises the approval rate for good customers. The explainability capability also satisfies the regulatory-compliance requirement — something black-box models cannot do.

6 Technical Architecture and Scalability

Tivani is built on architectural patterns designed for high-volume financial systems. Each pattern solves a specific problem:

Architectural Pattern	The Problem It Solves
CQRS (read/write separation)	Independent optimization of the write path (transactions) and read path (reporting) for high performance
Domain-Driven Design (DDD)	Precise modelling of complex credit logic and adaptation to business change
Event Sourcing	Recording every change as an event — a complete, reconstructable history of each transaction
Saga pattern	Managing distributed transactions and safe rollback in the event of failure
Idempotency	Preventing reprocessing of a duplicate transaction — guaranteeing financial uniqueness
Distributed lock	Safe coordination of operations in a multi-instance (cluster) environment

Horizontal Scalability

The platform scales horizontally: as load increases, the number of service instances (pods) grows according to the customer's infrastructure capacity. The read path scales separately through database replicas, and a cache layer reduces database load. This architecture has been evaluated and designed for national-scale scenarios — schemes with tens of millions of users.

> **Practical outcome:** An infrastructure that grows with your business and will never be “too big.” Scalability is bounded by infrastructure resources, not by the architecture.

7 Standards, Security and Evidence of Maturity

Tivani is not an idea on paper; it is a production-ready system that has been measured in independent technical evaluations. This section presents the evidence of maturity.

Twelve International Standards

Standard	Implementation in Tivani
IFRS	Double-entry bookkeeping
ISO 20022	Modern financial messaging (pacs, camt)
ISO/IEC 27001	Complete audit-trail recording
PCI DSS	Sensitive-data masking
Basel III	Daily/weekly/monthly account reconciliation
PSD2	Fee transparency (fixed, percentage, tiered, hybrid)
GDPR	Data retention and the right to be forgotten
ACID	Isolated and reversible transactions
IEEE 754	Precise financial computation (no decimal error)
Four-eyes principle	Two- or three-stage approval of sensitive transactions

Security Model

Layer	Mechanism
Authentication	Secure token (JWT) from the user service
Access control	Role-based (user, manager, administrator)
Data in transit	TLS 1.3 encryption
Rate limiting	Request ceilings per user and per address
Audit trail	Recording of all changes, immutable
Encryption at rest	Data encrypted in storage

Implemented Technical Modules

Tivani's technical infrastructure comprises a set of completed and operational modules, each with a separate write and read path:

Technical Module	Function
Wallet	Wallet management: top-up, withdrawal, blocking, reservation
Currency	Dynamic currency management (fiat and crypto)
Transfer	Money transfer with dynamic fees
Ledger	Double-entry general ledger
Fee	Fee model: fixed, percentage, tiered, hybrid
Approval	Four-eyes principle for sensitive transactions

Technical Module	Function
Reconciliation	Daily, weekly and monthly account reconciliation
ISO 20022	Standard financial messaging
Common	Shared utilities: security, audit trail, idempotency

Independent Evaluation Results

OWASP Top 10	Security scan	Load test
All 10 vulnerability categories passed successfully — without exception.	Full security scan: zero findings at critical, medium and low severity.	Under high load, a zero error rate with stable response time at the 99th percentile.

8 Resilience, Recovery and Observability

A serious financial system must be dependable not only under normal conditions but also in the face of failure. Tivani is designed with several layers of resilience and recovery.

High Availability

Component	Approach
Database	Read/write separation and connection pooling
Application	Multiple concurrent instances (cluster mode)
Cache	Clustering capability
Scheduled operations	Distributed lock to prevent duplicate execution

Recovery Scenarios

Scenario	Approach
Database failure	Point-in-time recovery
Service failure	Automatic restart
Transaction error	High-level isolation and safe rollback
Network error	Idempotency and safe retry
Distributed transaction	Saga pattern for coordinated rollback

Observability

The platform is fully monitorable: metrics collection, visual dashboards, and log aggregation, together with automated alerts (high latency, error rate, connection failure, reconciliation mismatch). This means your operations team always has full visibility into the health of the system.

9 Deployment, Integration and Service Level

Tivani is designed for deployment on the organization's own infrastructure — with full data sovereignty preserved. This section describes the deployment model, integration and service-level commitments.

Deployment Models

Model	Description	Suitable For
On-Premise	Encrypted image on the organization's server	Banks, large enterprises, high data sensitivity
SaaS (White-Label)	Hosted by Noyan, under the organization's brand	Lendtechs, commercial platforms
Mini-App	Integrated into the existing ecosystem	Super-apps, messengers

Infrastructure and Integration

- **Containerized:** Container-based deployment with support for Docker Swarm and Kubernetes, together with a HELM Chart for automated deployment.
- **Standard API:** A documented programming interface (OpenAPI/Swagger) for connecting to the organization's existing systems.
- **Banking connectivity:** Compatibility with financial messaging standards for connection to banking networks and switches.
- **CI/CD:** An automated deployment pipeline for secure updates without service interruption.

Service Level (SLA) and Responsibility Model

Service Level	Availability Commitment
Core services	99.5%
Ancillary services	98.5%

The service level is defined with clear tiers (P1 to P4) and a Service Credit mechanism. An important point: in On-Premise deployment, responsibility for an SLA breach falls on Noyan only when the cause is a defect in the product itself — not the infrastructure, network or server managed by the organization. This separation makes both parties' expectations clear from the outset.

10 From Contract to Operation

Tivani's deployment path is fast and structured. Unlike an in-house build that takes months, a Tivani integration reaches operation within a few weeks.

Technical Launch Path

Step	Technical Action	Approximate Time
1	Technical meeting, review of the target architecture and prerequisites	1 week
2	Deployment in a test environment (sandbox) and first API call	1 to 2 weeks
3	Integration, credit-product configuration and pilot	2 to 4 weeks
4	Production deployment and operation	Weeks

Deployment Prerequisite Checklist

- Server infrastructure meeting the specifications (for On-Premise deployment)
- Access to the organization's authentication service and user base
- Definition of the credit product, plans and fee structure
- A counterpart technical team for API integration

In summary: Tivani is a complete, operational and proven credit infrastructure — with a modern architecture, alignment with twelve international standards, measured security, and a deployment model that keeps data sovereignty in the organization's hands. What would otherwise demand months of building and a large team is available in weeks, on your own infrastructure.

Next Step

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