IT DEVELOPMENT IN KCSD

ASSOCIATION OF EURASIAN
CENTRAL SECURITIES
DEPOSITORIES
ALMATY, NOVEMBER 14, 2023

KCSD SERVICE MODEL

FOR INSTITUTIONAL INVESTORS	FOR PRIVATE INVESTORS	FOR ISSUERS
depository services	registrar services	registrar services
banking services	banking services	paying agent services
trade repository services	services to return the unclaimed assets	services to return the unclaimed assets
	corporate actions services	assignment of international identifiers

Depository activities

- Implementation of the omnibus account system
- Improvement of transaction registration and securities settlement technologies
- Launch of a venue for securities based lending transactions

Registration securities holders

- Expansion of safekeeping services of assets of "lost" security holders
- Implementation of the registry system for bills
- Reduction of transaction registration time
- Facilitating online access to registry services

Corporate actions hub

- Integration of the registration system of KCSD with the system of information disclosure on corporate actions
- Creation of web-portal Corporate Actions
- Electronic voting system for general shareholders meetings

Banking operations

- Implementation of a foreign currency exchange service
- Banking system optimization

OTC market

- Implementation of the DvP model for OTC transactions
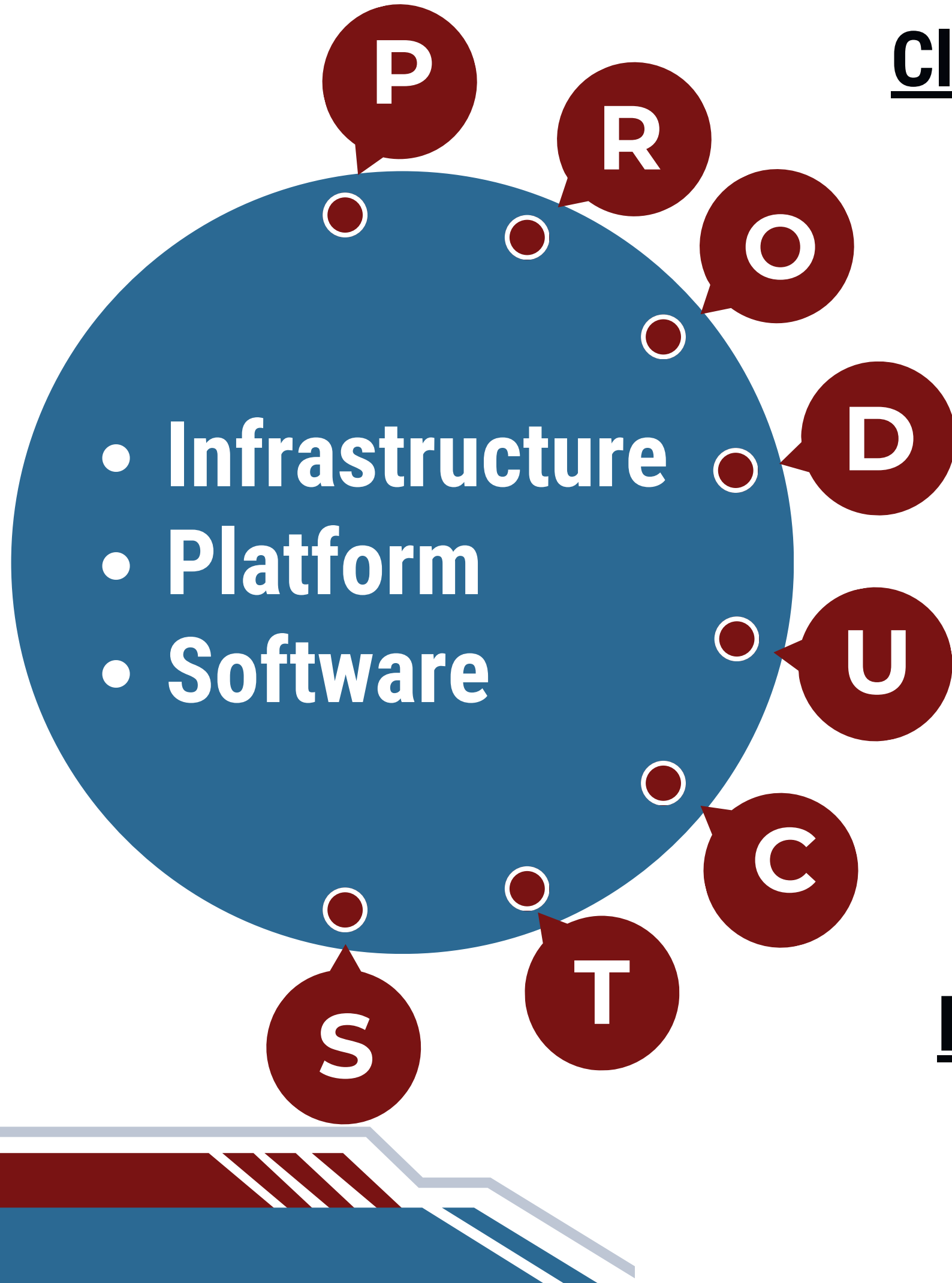- Development of a service for securities and other financial instruments trading

Ecosystem services

- Introduction of services for the identification & proper verification of clients

KEY PRIORITIES

- Digital Transformation in:
  - IT architecture
  - IT infrastructure
  - Organisation
- Digitalizing business processes

PRODUCTS

- **Infrastructure**
- **Platform**
- **Software**

Clearing & Settlement

Banking

Securities Onboarding

OTC

Client Onboarding

Securities Register

Information Products

Billing

Corporate actions

PRODUCT...

- ... is the **functionality** of the software...

- ...focusing on **the processes** implemented by the **microservices** and **the platforms**

- ...utilising the **infrastructure**

- ...performed by **cross-functional** teams

NEW PRODUCT DEVELOPMENT

- ✓ Cross-functional teams

- ✓ From idea to deployment & user adoption independently

- ✓ Reusable templates from platform teams (metrics, logs, images)

- ✓ Only push code to GitLab

- ✓ CI/CD pipelines, tests, linters, review, security and sanity checks
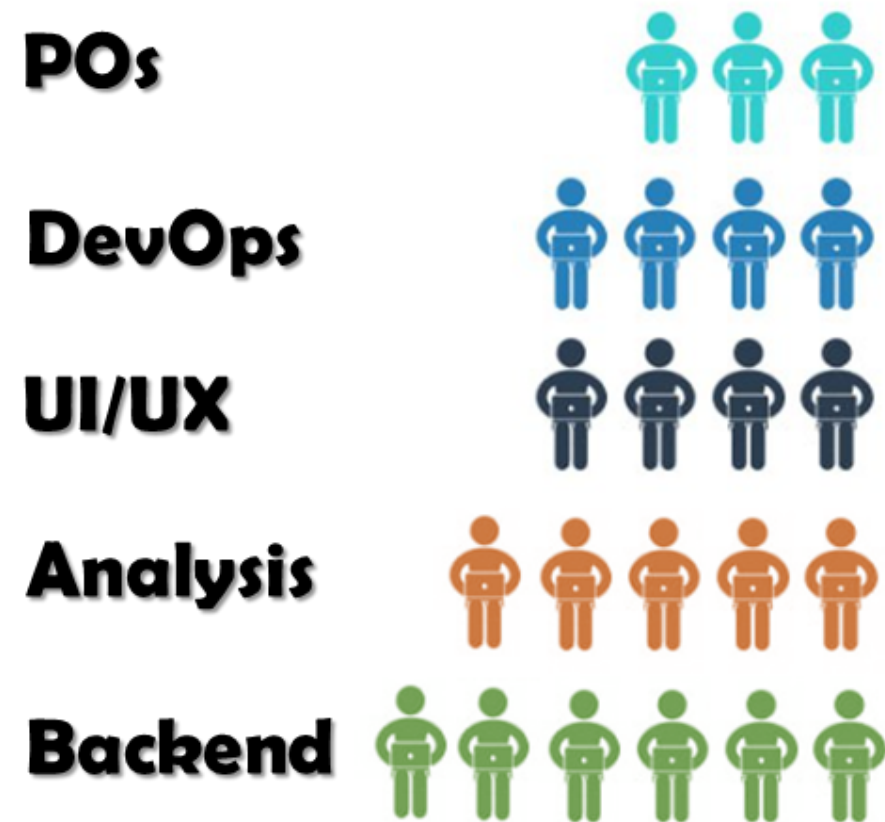
- ✓ Own metrics and KPI, OKR

Cross functional teams...

Siloed functional teams

...can make better and faster decisions and launch products and services that meet market needs iteratively throughout the lifecycle
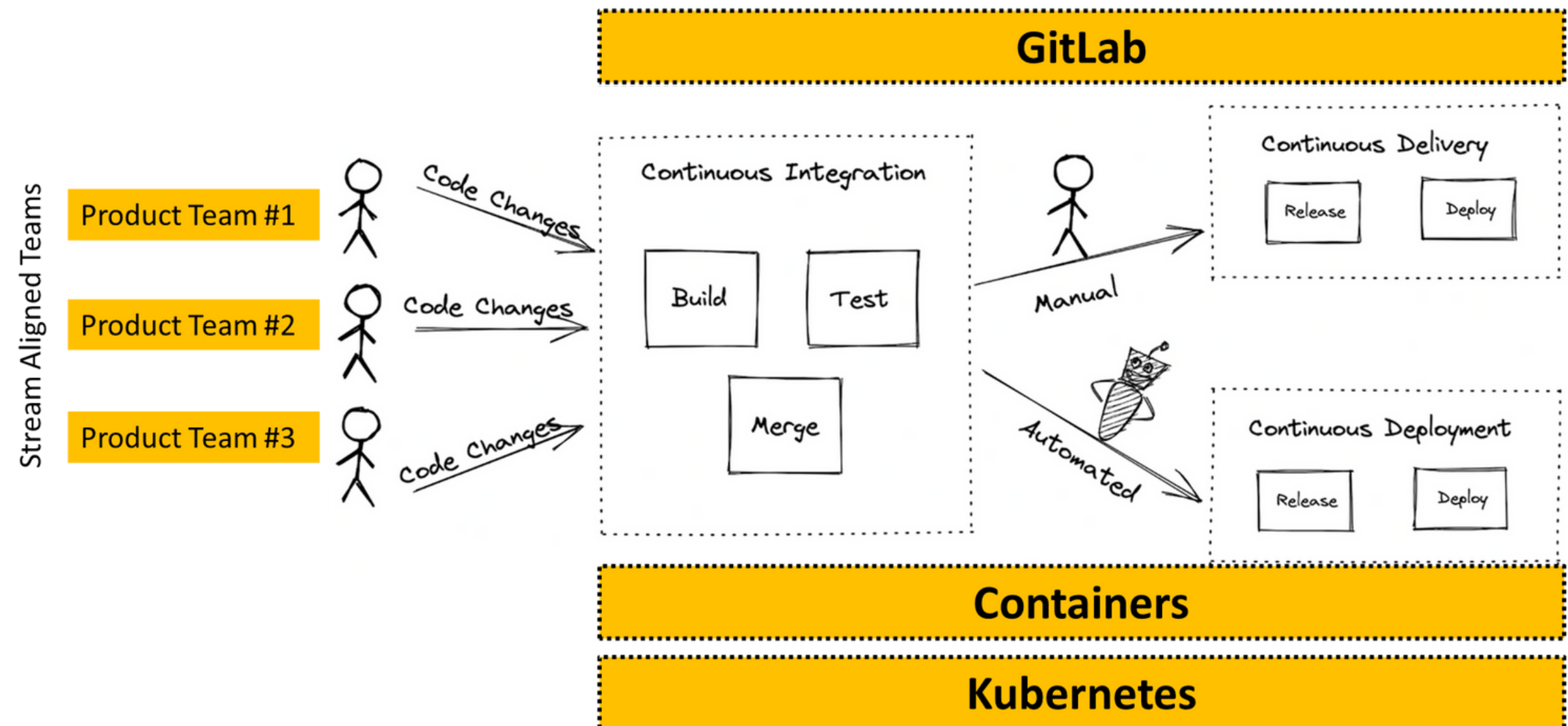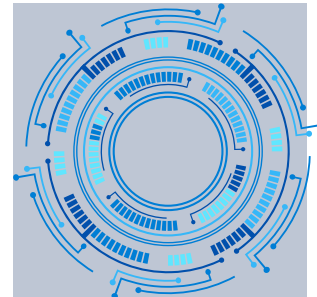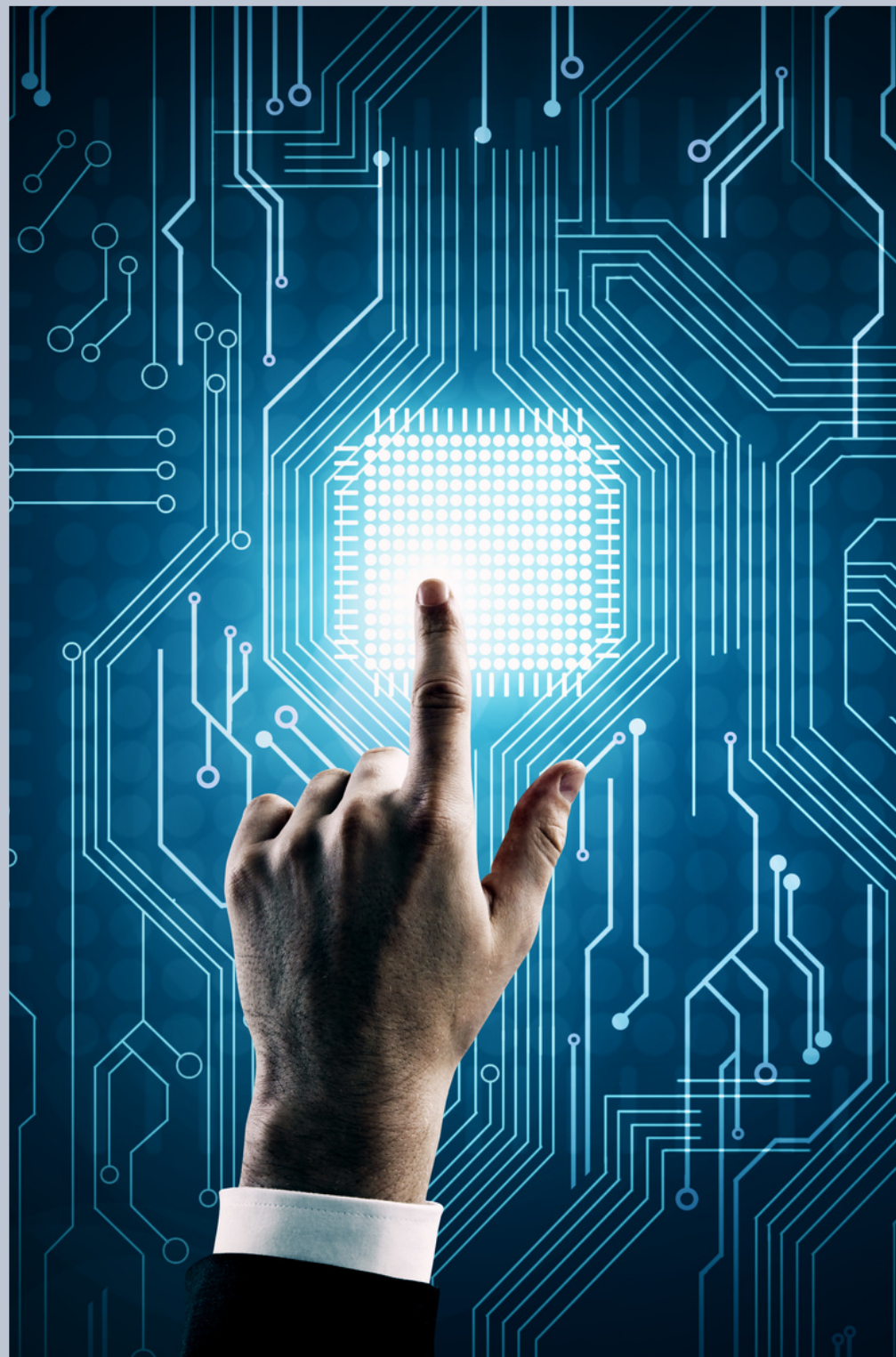
POs

DevOps

UI/UX

Analysis

Backend

...lead to siloed service architecture

Customer centricity and time to market acceleration are at the focus of the Product team
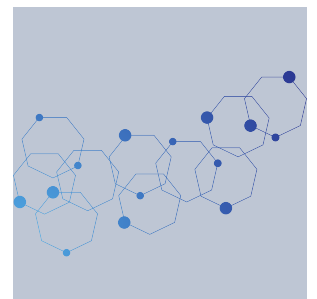
PRODUCT DEVELOPMENT

- Shared objectives

- Open feedback

- Diverse expertise

- Adaptability and flexibility
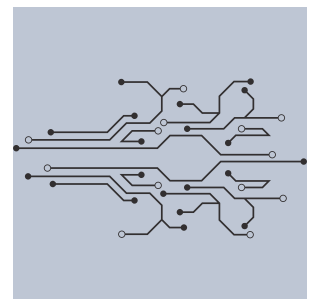
- Data-driven decision making

INFRASTRUCTURE

Storage, Network, Kubernetes, Business Continuity & Disaster Recovery, Backups

PLATFORM

Docker, Images, Templates, Monitoring, Logging, Alerting, CI/CD, E2E Tests, Stress Tests, Reusable and Shared Components

SOFTWARE

Focus and concentration on a service, fast deployments, small pieces of changes, easy to scale

- Controlling physical infrastructure: storage, CPU, Network, RAM

- Core Oracle Database for transaction layer

- DWH for analytical layer

- Inner Cloud-like Services with Kubernetes as a basis

- Geographically Distributed Cluster

- Horizontal scalability

INFRASTRUCTURE

- All source codes moving to GitLab
- Developing feature in Oracle in the isolated environment using branching
- Staging Oracle server to test new developed functionality
- Code review process for every code changes
- Long-running and CPU-intensive tasks migrating from Oracle to Microservices
- Integrations, queue, parsing, async-tasks as Microservices
- Analytical queries moving to DWH layer
- Data Replication between Data Centers for Transaction Layer Data
- Moving BLOB files to S3

PLATFORM

- The set of reusable microservices, foundational tools, frameworks and systems that cross-functional teams and other stakeholders can use to build and deliver software products
- The platform supports the development, deployment and operations of software applications
- The platform is responsible for the technical aspects, including architecture design, system configuration, coding, testing, deployment and ongoing maintenance

  - Increase efficiency by standardizing and streamlining software development, deployment and maintenance processes
  - Improve Scalability and Reliability
  - Improve Security by providing Identity and Access management system;
  - Ongoing evolution and improvement of the platform.
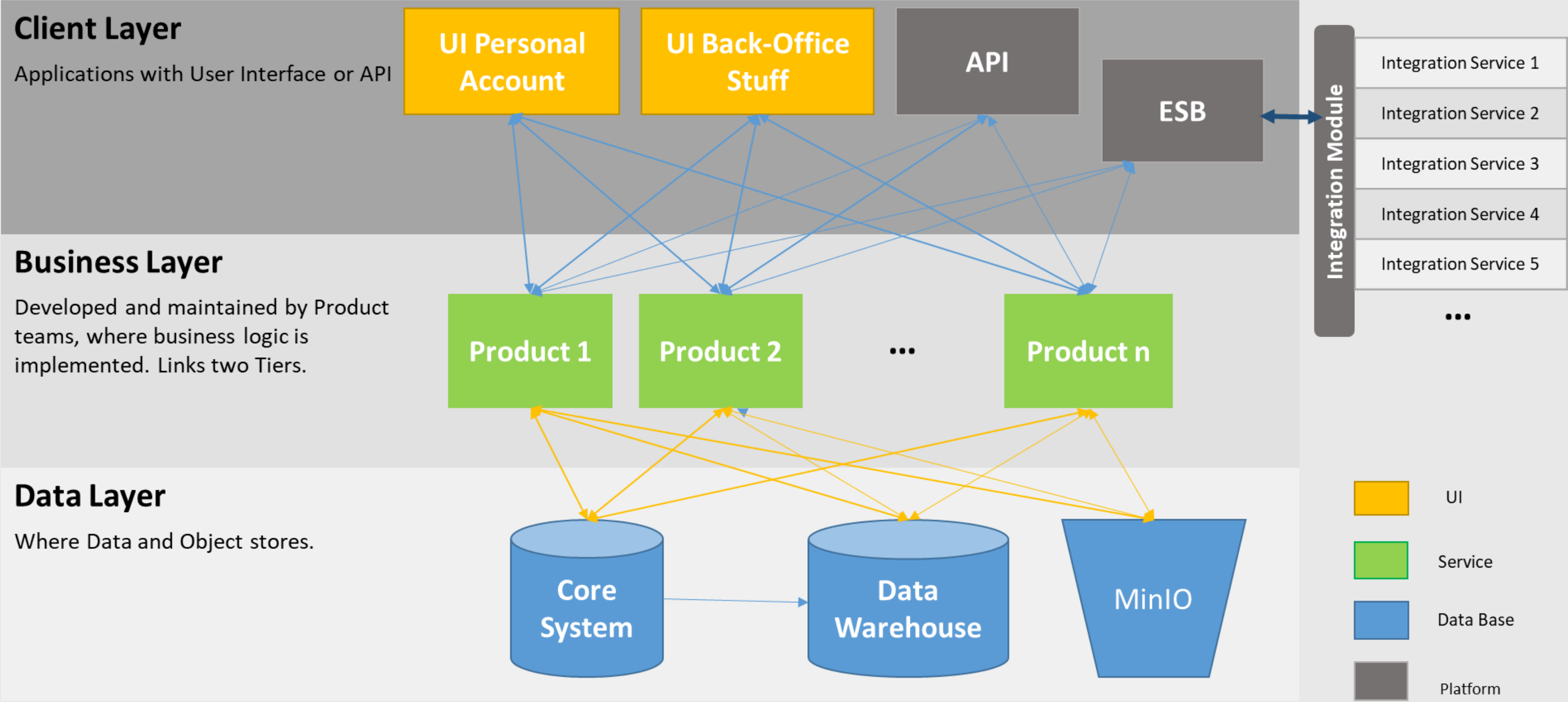
Key Results To Date

TARGET INFRASTRUCTURE IN PLACE

Ledger DataBase, Metadates, API manager, KAFKA, ESB, Digital Security Sign, Global MT parser, Identity Server, Minio

REDUCING PROCESSING TIME

generating documents, processing of incoming documents, improved throughput of our systems

LAUNCH OF NATIONAL PLAFORM FOR REGISTRATION PROCESS OF CORPORATE SECURITIES ISSUES

LAUNCH OF PLATFORM FOR ALL TYPE OF CLIENTS "PERSONAL ACCOUNT"

INTEGRATION SERVICES

new information disclosure services (corporate actions for the issuers, information on securities holders for government bodies and trading venue) identification services with government databases
payment service with KASPI

THANK YOU

CENTRAL SECURITIES DEPOSITORY (KCSD)

+7 (727) 262 08 46

WWW.KCSD.KZ

REPUBLIC OF KAZAKHSTAN, 050040/A15P5B5
ALMATY, SATPAYEV STR., 30/8
NON-RESIDENTIAL PREMISES 163
E-MAIL: CCMAIL@KCSD.KZ