



SIILI®



AIKO-hanke

Työpaja: I: Tekoälyn tilannekatsaus ja yrityskokemukset

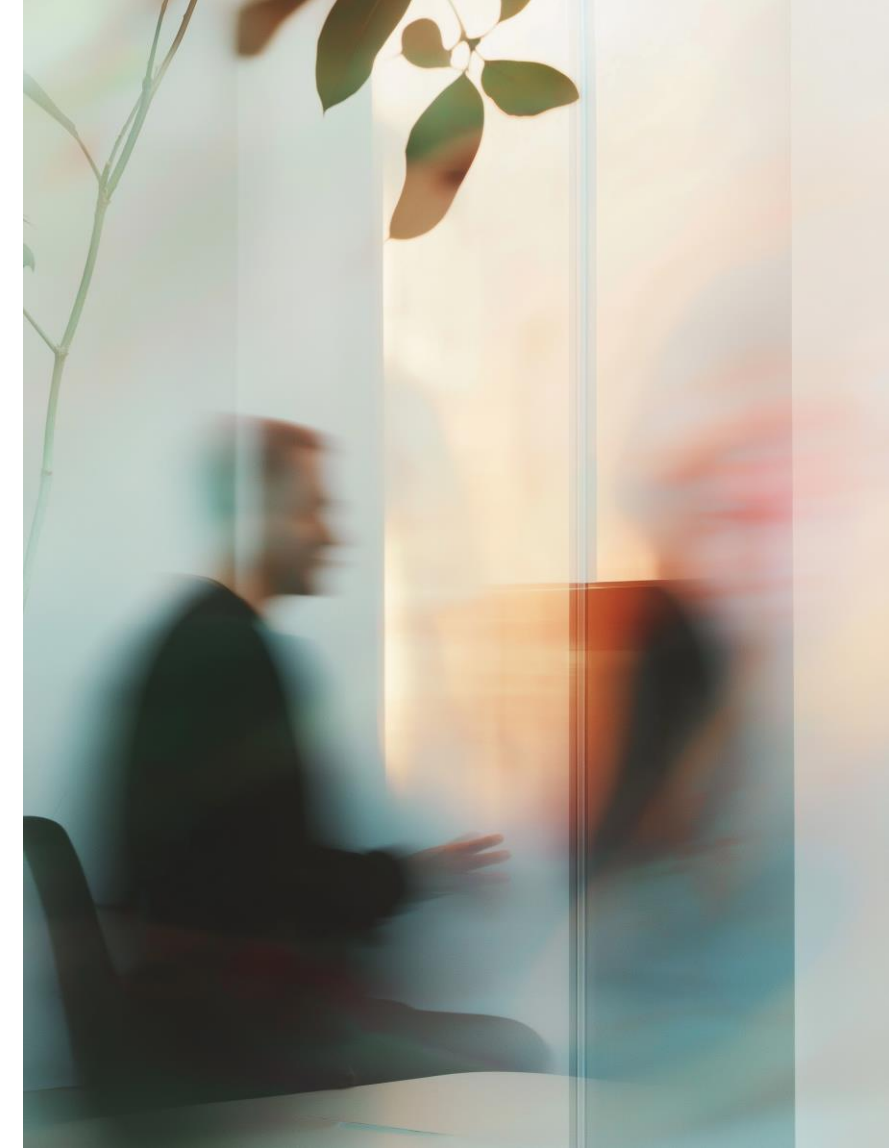
Marko Jaanu / Siili Solutions



Marko Jaanu

Head of AI Powered Technology

25+ years experience in digital
development, products, services and
methodologies





Make AI Real

End-to-end digital
development partner

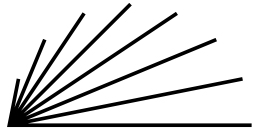


In a world overflowing with AI hype, Siili stands apart as the beacon in the noise.

Siili pioneers AI-driven software solutions by blending strong development, AI expertise, and industry knowledge.

We strengthen customers' competitiveness with smarter, faster, and more impactful digital innovations.

We lean into what's next and empower our customers to do the same.

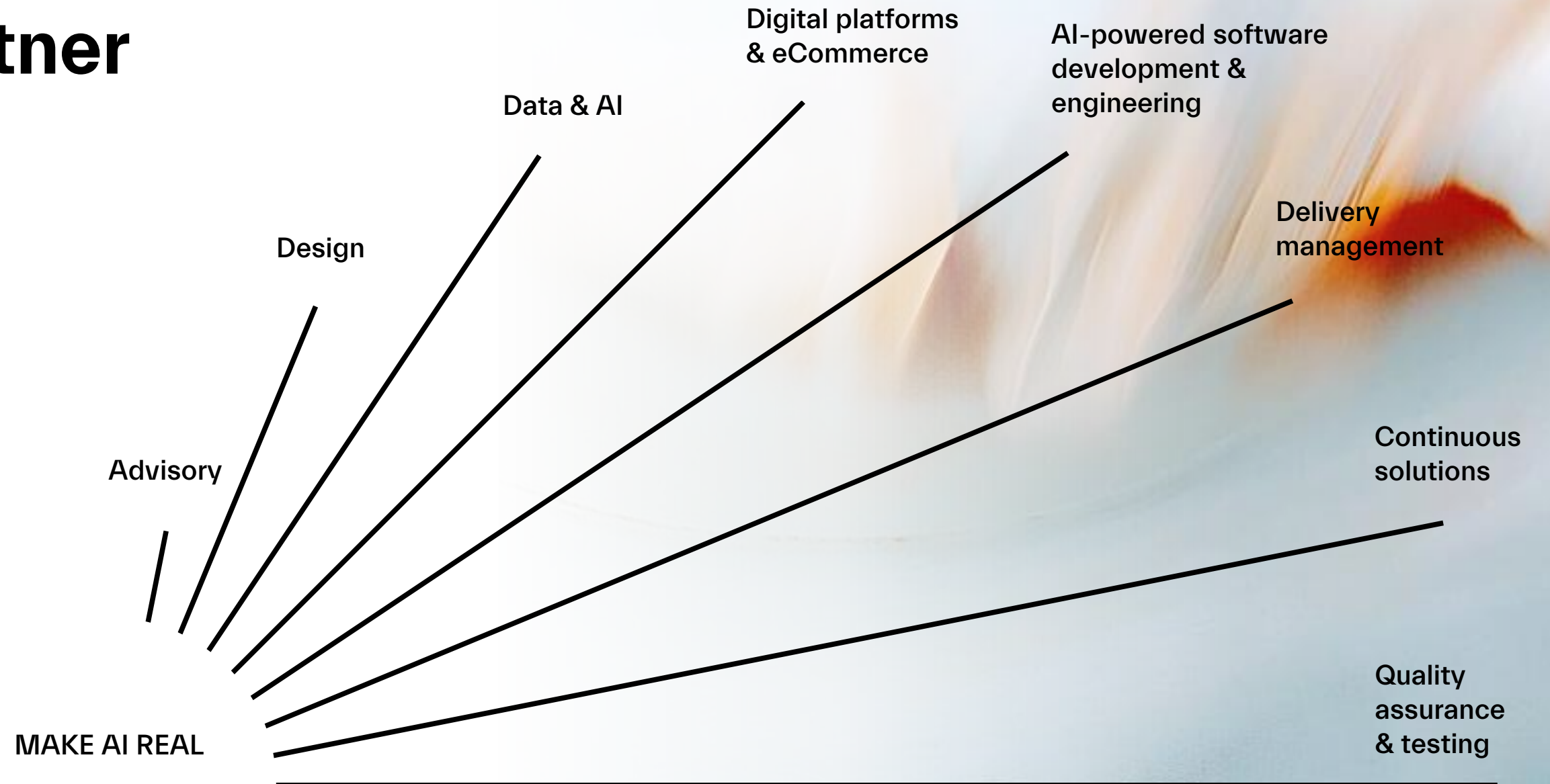


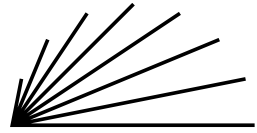
End-to-end digital development partner

Making AI practical and impactful reality.

As pioneers of AI-powered digital development, we advance our customers' digital maturity and ability thrive in the evolving AI-landscape.

Whether it's a full-scale project or a tailored expert team, we enable our clients to unlock business value and achieve sustainable growth.





We work with visionary leaders globally to bring their businesses, services and products to life

112M€

Revenue (2024)

93%

Customer retention

29%

Share of international revenue (2024)

19

Locations

8

Countries

1,000+

Experts



Key client sectors

- Services
- Industry
- Public
- Finance
- Automotive

Specialized SIIL companies



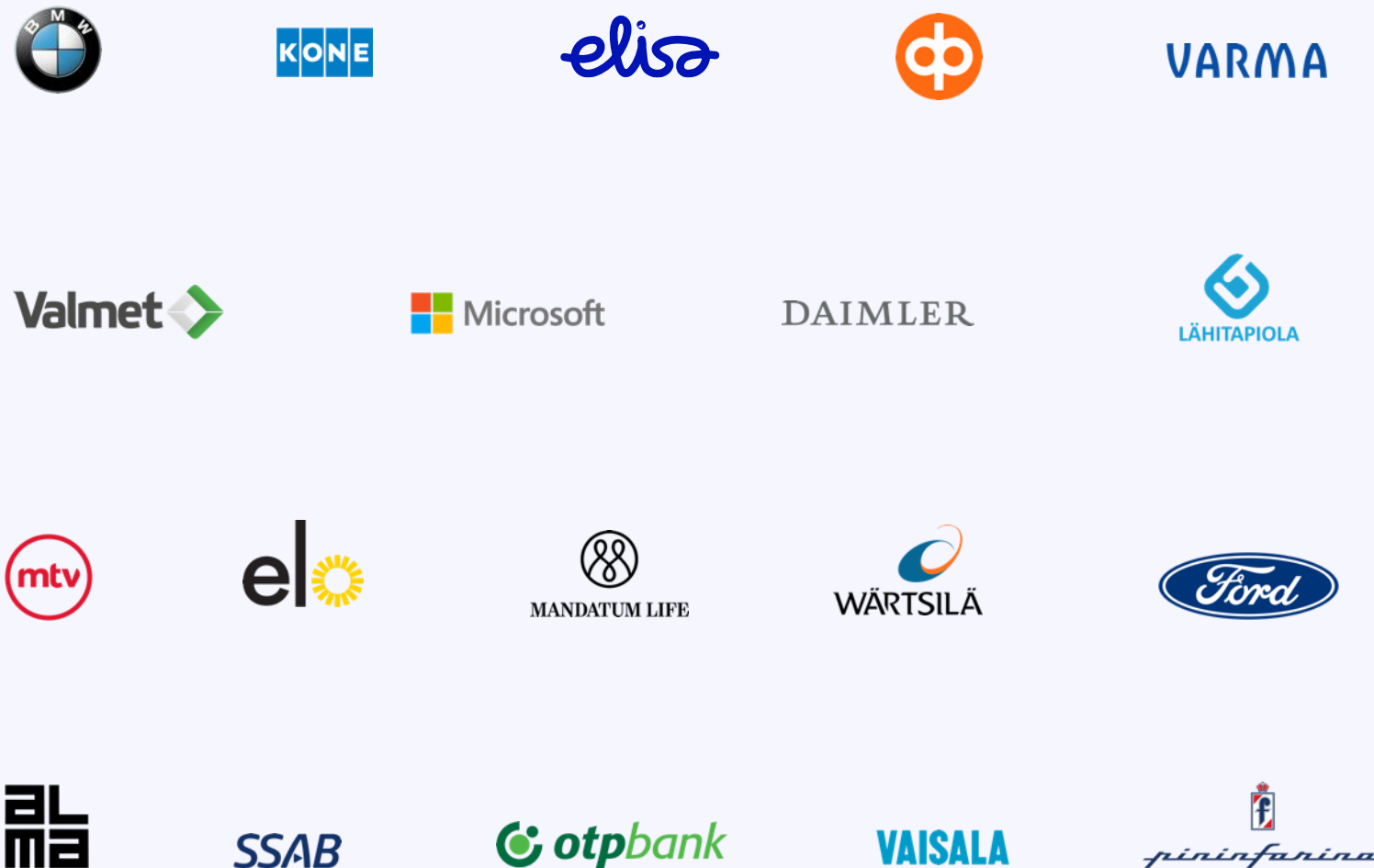
SIILI AUTO

VALA

Integrations
Group

Strong and diversified client base

// PRIVATE SECTOR



// PUBLIC SECTOR



Miksi tekoäly juuri nyt?

- Prosessiteollisuuden paineet: energiatehokkuus, sääntely, osaajapula
- Pilvipalvelut + teollisuus-OT-datan avaaminen
- Generatiivinen AI & agentit tuovat luonnollisen kielen käyttöliittymän operointidataan

Brownfield = historiadata + sensorit jo olemassa

Greenfield = generatiivinen AI lyhentää suunnittelu-sykliä ja uudet innovaatiot
→ kilpailuetu

Tuotekehityksen elinkaari & tekoälyn kosketuspisteet

Ideointi

→ konseptointi

→ simulointi

→ prototypointi

→ testaus

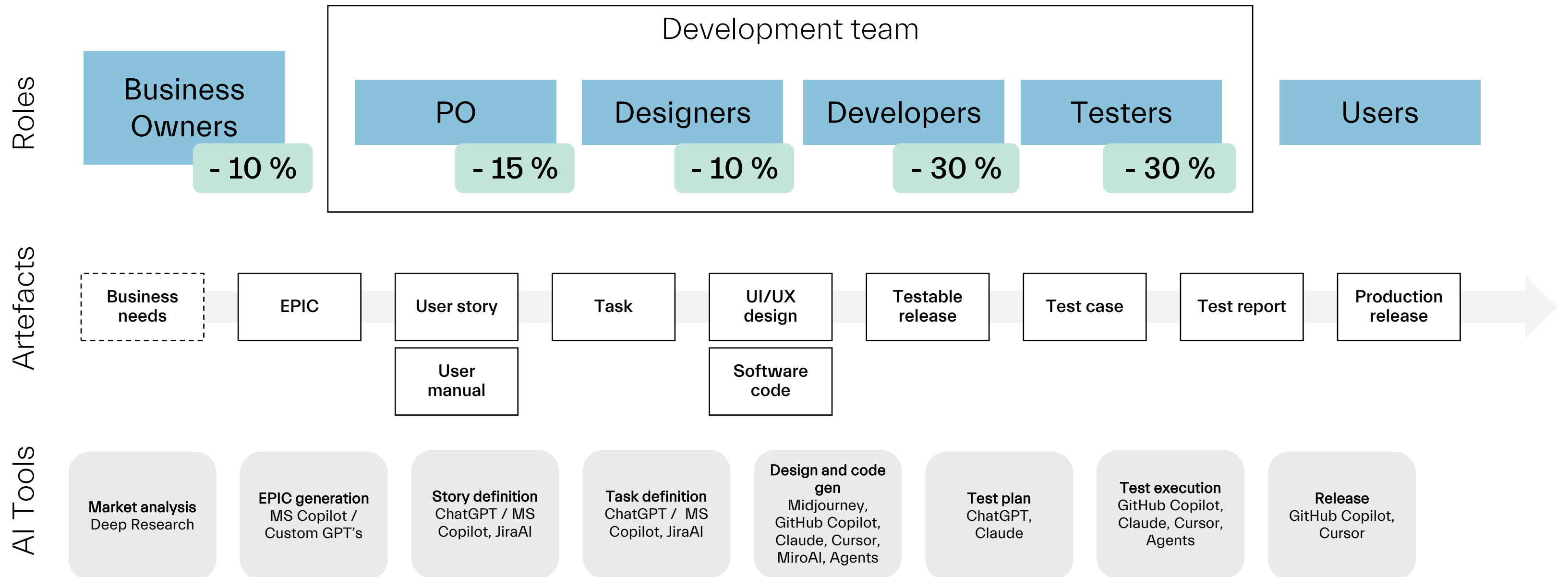
→ käyttöönotto

→ ylläpito

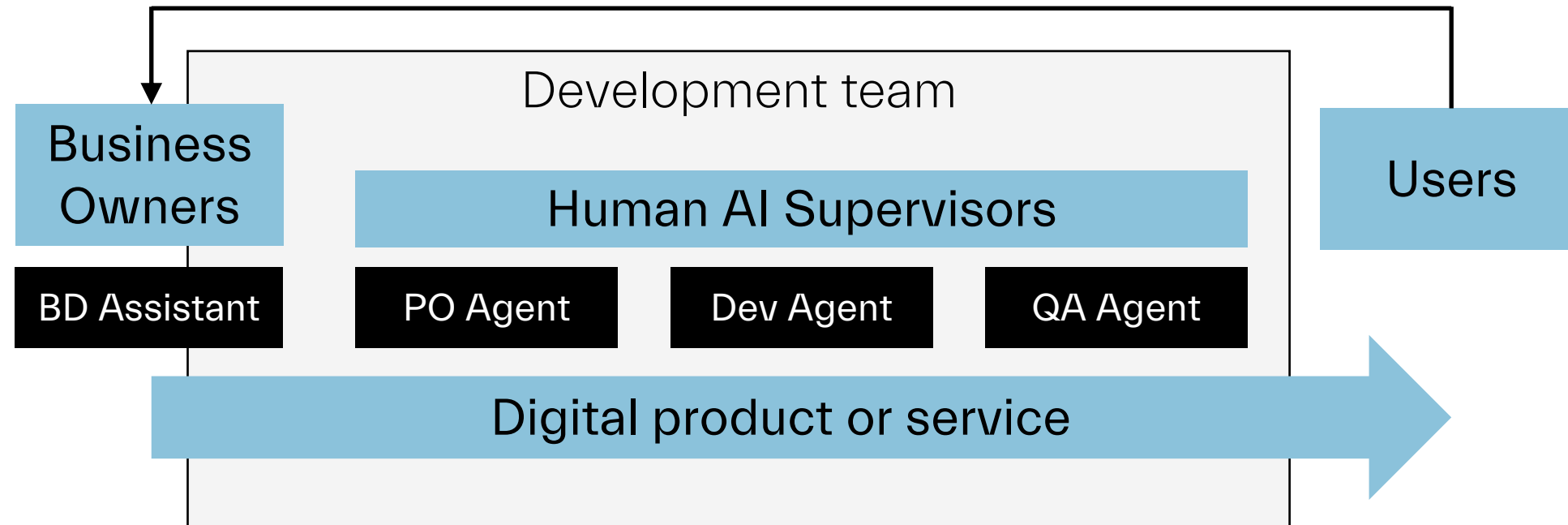


There are tangible efficiency gains available for Digital Development with the current maturity of AI solutions

Digital development best practice in 2025

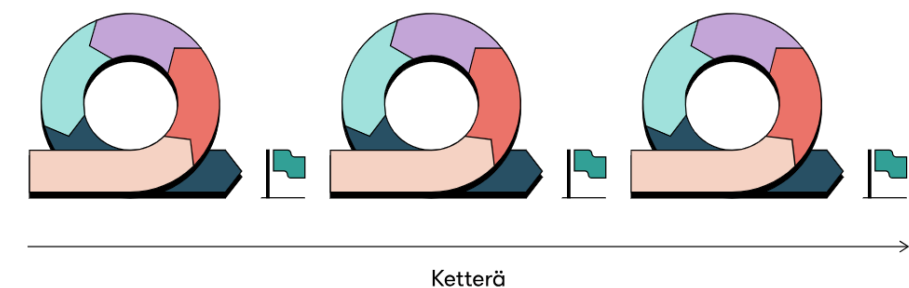
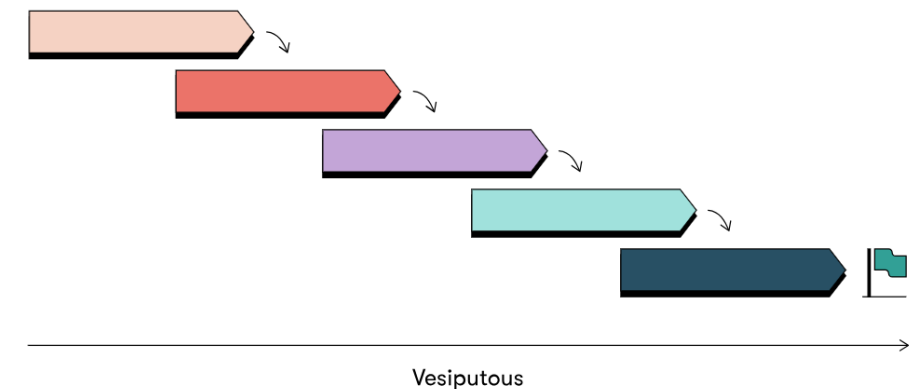


Our vision on a state-of-the-art digital development process of 2028



Vrt. Vesiputousmalli tai Agile-malli

<https://courses.minnalearn.com/fi/courses/agile/preview/miksi-ketteroeityae/kettera-verrattuna-perinteiseen/>



R&D Re-imagined

AI example use cases today

Idea & Validation

Idea Generation

Feasibility Study

AI Use cases

- Trend/Patent Analysis
- Voice of Customer Analysis
- Competitive Landscape Analysis
- Idea building with synthetic customers
- Predictive Modeling & Simulation
- Resource Allocation Optimization

Design & Prototyping

Design & Development

Prototyping & Testing

AI Use cases

- Generative Design
- Real-Time Engineering Support
- Knowledge Management
- Testing with simulated customer & users
- Automated Testing & QC
- Digital Twin & Simulation

Solution & Commercial

Implement & Scale-Up

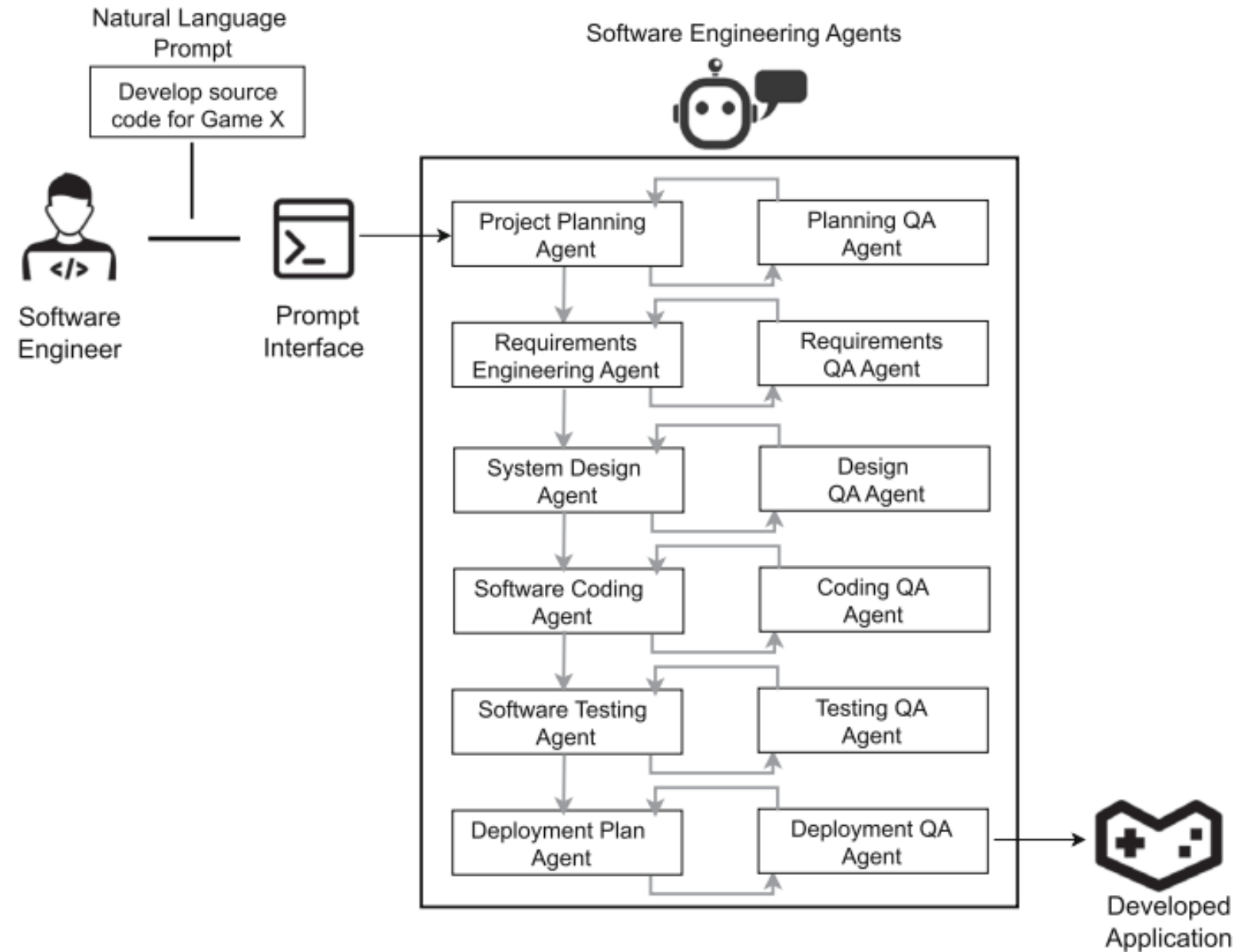
Commercialization

AI Use cases

- Supply Chain & Inventory Optimization
- Workforce Augmentation
- Demand Forecasting
- Pricing Optimization
- Targeted Marketing & Customer Engagement



Autonomous Agents in Software Development



https://cris.tuni.fi/ws/portalfiles/portal/137040809/Autonomous_Agents_in_Software_Development_A_Vision_Paper.pdf



Handbook for AI-Powered Developers

AVAILABLE NOW



<https://siili.com/ai-handbook>



Alternative options for processing AI inference

Location can be selected based on the security level needed

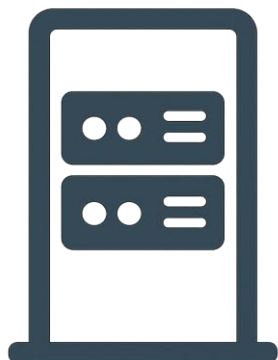
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On device



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On-Premise



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Controlled Cloud

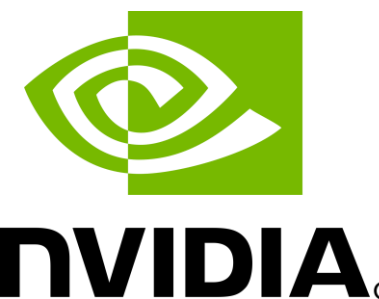


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AI Providers



Built on NVIDIA AI Enterprise platform



Tekoäly yritysten automaatoratkaisuissa

Prosessin/tuotannon vaihe	AI-sovelluskohde	Käytettävä AI-tekniikka	Mitattava hyöty
Kemiallinen käsittely (vesi-, massa- ja kemianteollisuus)	Reaaliaikainen kemikaali-annostuksen optimointi	Säädettävä regressiomalli + prosessin sisäinen optimointialgoritmi	-5–15 % kemikaalikustannus, tasaisempi lopputulos
Mekaaninen tuotantolinja (elektroniikka, konepaja)	Vision perustainen laatutarkastus jokaiselle kappaleelle	Syväoppiva konenäkö (CNN) + poikkeama-analyysi	Virhetuotteet ↓ 40 %, 100 % tarkastus ilman lisähenkilöstöä
Kunnossapito (pumput, moottorit, robotit)	Ennakoiva kunnossapito värähtely- ja lämpödatasta	Aikasarja-ML (LSTM / Random Forest) + anomaliadetektiomalli	Seisokit ↓ 30 %, huoltokustannus ↓ 20 %
Uudet linjat / laajennus	3D-layoutin generointi ja virtaus-optimointi	Generatiivinen suunnittelumalli (diffuusiomalli) + virtauksen CFD-simulaattori	Esisuunnittelu-aika ↓ ≈30 %, parempi tilankäyttö & turvallisuus
Robottisolu / kokoonpano	Liikeratojen automaattinen optimointi	Vahvistusoppiminen (RL) + digitaalinen kaksonen	Syklin aikataulu ↓ 10–20 %, energiankulutus ↓ 5 %
Operointituki & päätöksenteko	Luonnollisen kielen agentti, joka vastaa kysymyksiin prosessi- ja tuotantodatasta	Suuri kielimalli (LLM) + tietokantahakijan plug-in	Vika-analyysin kesto minuuteista sekunteihin, nopeampi päätöksenteko



Case sähkökattila-lämpövoimala

Haaste:

Halutaan ennustaa sähkön tuleva kulutus 3-4 vrk eteenpäin

Dataa olemassa yli 5 vuoden ajalta

Tuotantokoneiden ja valmistuksen kulutus ei ole olennaista, vaan tilojen lämmitys ja sähkönkulutus

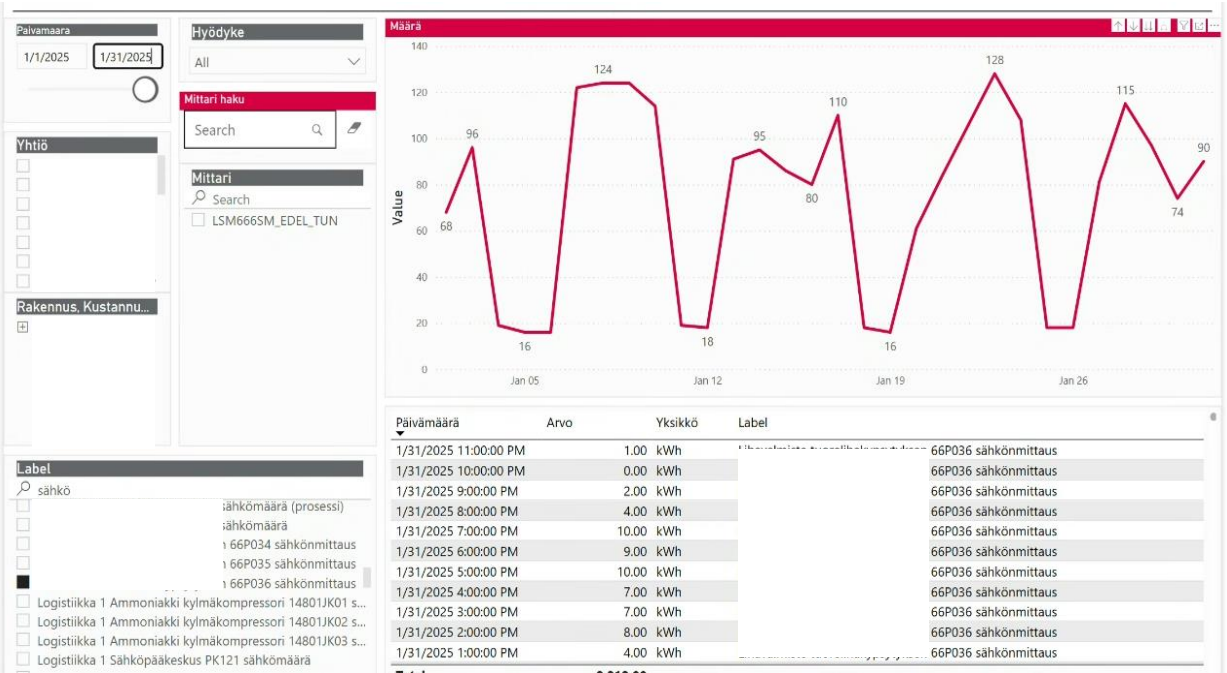
Tekoälyratkaisu:

Otetaan sisään kulutusdata ja säätiedot ja sähkön hintatieto ulkoisista järjestelmistä, tehdään toteutus olemassa olevaan data-alustaan ja tarjotaan ennustedata ulkoiseen järjestelmään.

Lisätään näkymiä tarvittaessa data-alustan kautta.

Lopputulos:

Hiljaisen tiedon sijaan saadaan historiaan perustuva ennustus sähkön kulutuksesta ja sen perusteella voidaan säätää lämpövoimalaa optimaalisen kulutuksen varmistamiseksi



The Finnish Centre for Pensions - Disability Pension Prediction

THE OPPORTUNITY

The Finnish Centre for Pensions wanted to explore whether machine learning techniques could be beneficial in expert work, particularly in creating various forecasts and calculations. The usage of machine learning techniques in predicting the likelihood of becoming eligible for a disability pension was selected as the test case.

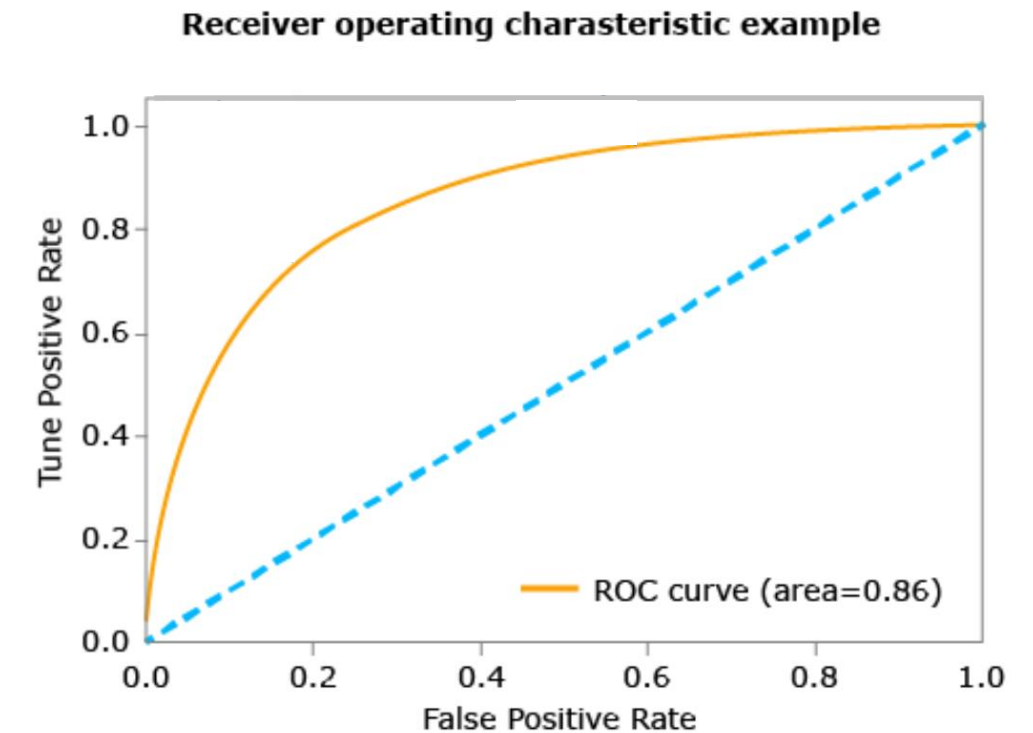
THE SOLUTION

The project aimed to predict the onset of disability within two years. The machine learning algorithm's training data consisted of anonymized socioeconomic, income, and social benefits data on an annual level from 240,000 individuals who had previously gone on disability pension, covering the period 2–10 years before the start of their disability pension. As a comparison group, data from 240,000 randomly selected individuals who had not gone on disability pension during the observation period was used.

THE OUTCOME

The result was a prediction with 80 % success rate to recognize a person's disability pension with 2 years beforehand.

The solution has potential to prevent premature retirements from working careers. It has a huge potential impact for society and economics.

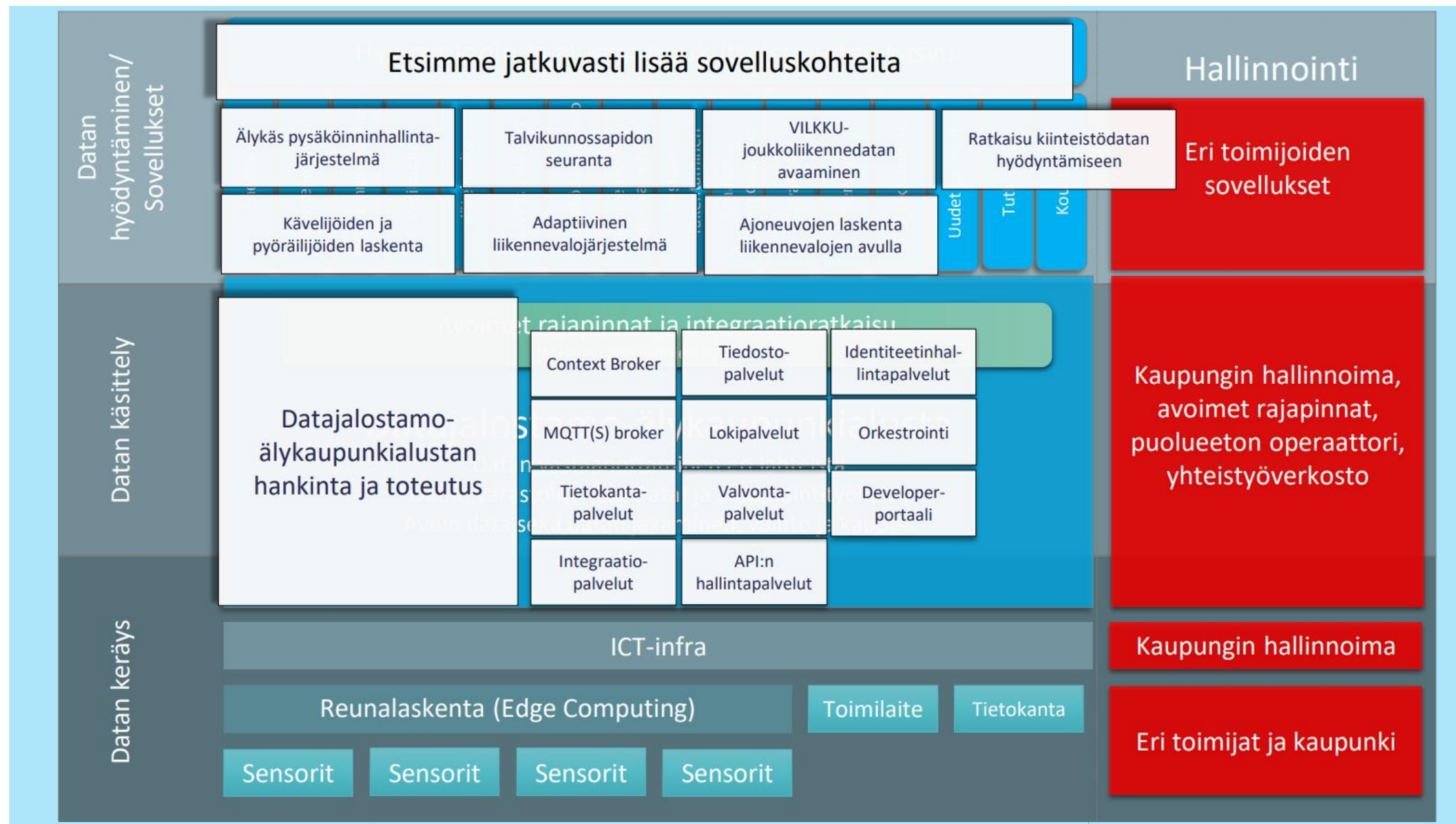


Lähde: Eläketurvakeskus



Case älykaupunki Kuopio

https://5g.savonia.fi/wp-content/uploads/sites/8/2022/10/221011_Datajalostamo_älykaupunkialusta_Kuopioon.pdf



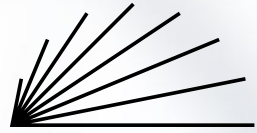


CASE STORY

HONKAJOKI

Honkajoki HELOS

Transforming animal by-product logistics
with AI-driven solutions



FINAVIA

Situational awareness with unified data

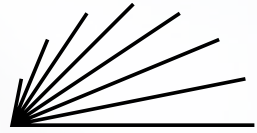


METHODS

Design Thinking
UX Research
Prototyping
Agile development
Container based infrastructure
in Google Cloud
Firebase app
development framework
Continuous delivery & test
automation

TECH

TypeScript + React + React Native
Spring Boot API to connect over
20 data sources
Keycloak IAM



FINAVIA

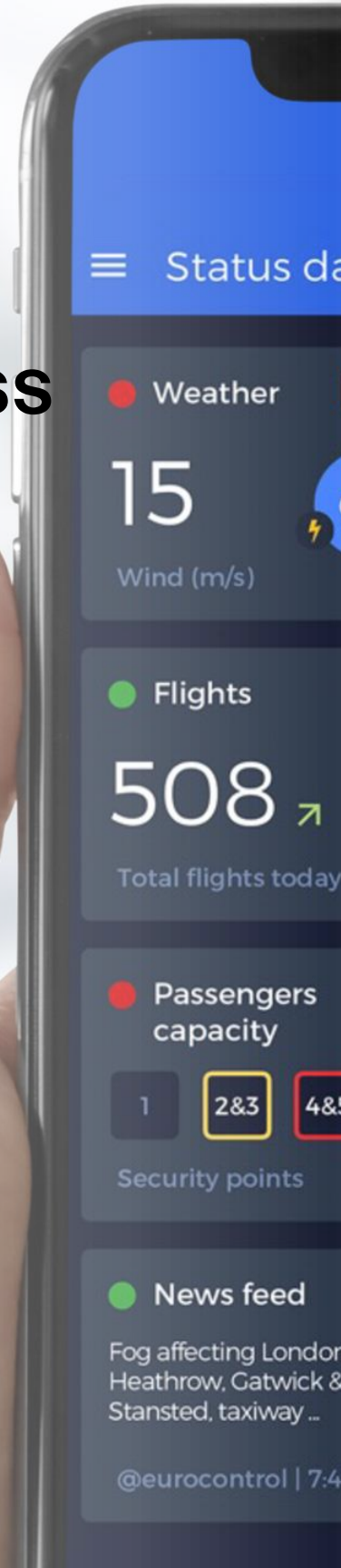
Situational awareness with unified data

20

Finnish airports

6,000+

Users



// CHALLENGES

Cross-airport situational awareness

Finavia needed an application to enable their workers to see a real-time snapshot of the airport's various functions, anytime and anywhere - either on a desktop or mobile device.

// SOLUTION

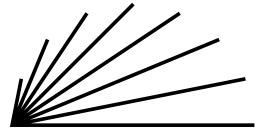
Co-created product vision in a highly complex space

We led the agile delivery and built a near real-time event driven data platform with a rule engine. Web based tools for super users and mobile apps for end users helped form a solution that transformed into a unified platform suitable for numerous industry specific applications.

// OUTCOME

A connected, productive and safe environment

Cross-airport awareness via a main channel for the operational communication for process optimization and resource saving with a centralized approach. Increased quality of incident handling and quicker recovery also represent key benefits.



Revolutionizing the maritime sector

METHODS

Agile development

Co-creation

Event-based architecture

TECH

React with Typescript

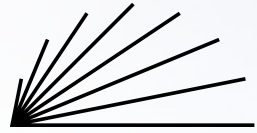
Spring Boot

Kotlin

PostgreSQL

RabbitMQ

Java



Revolutionizing the maritime sector

10

Year engagement

100

Vessels arriving in Finnish ports per day



// CHALLENGES

The EU needs to harmonize complex port notifications

The everyday life of stakeholders in this environment needed to be made more effective and productive. Digitalization, automation, and standardization had to be brought into account to create a more harmonious operation.

// SOLUTION

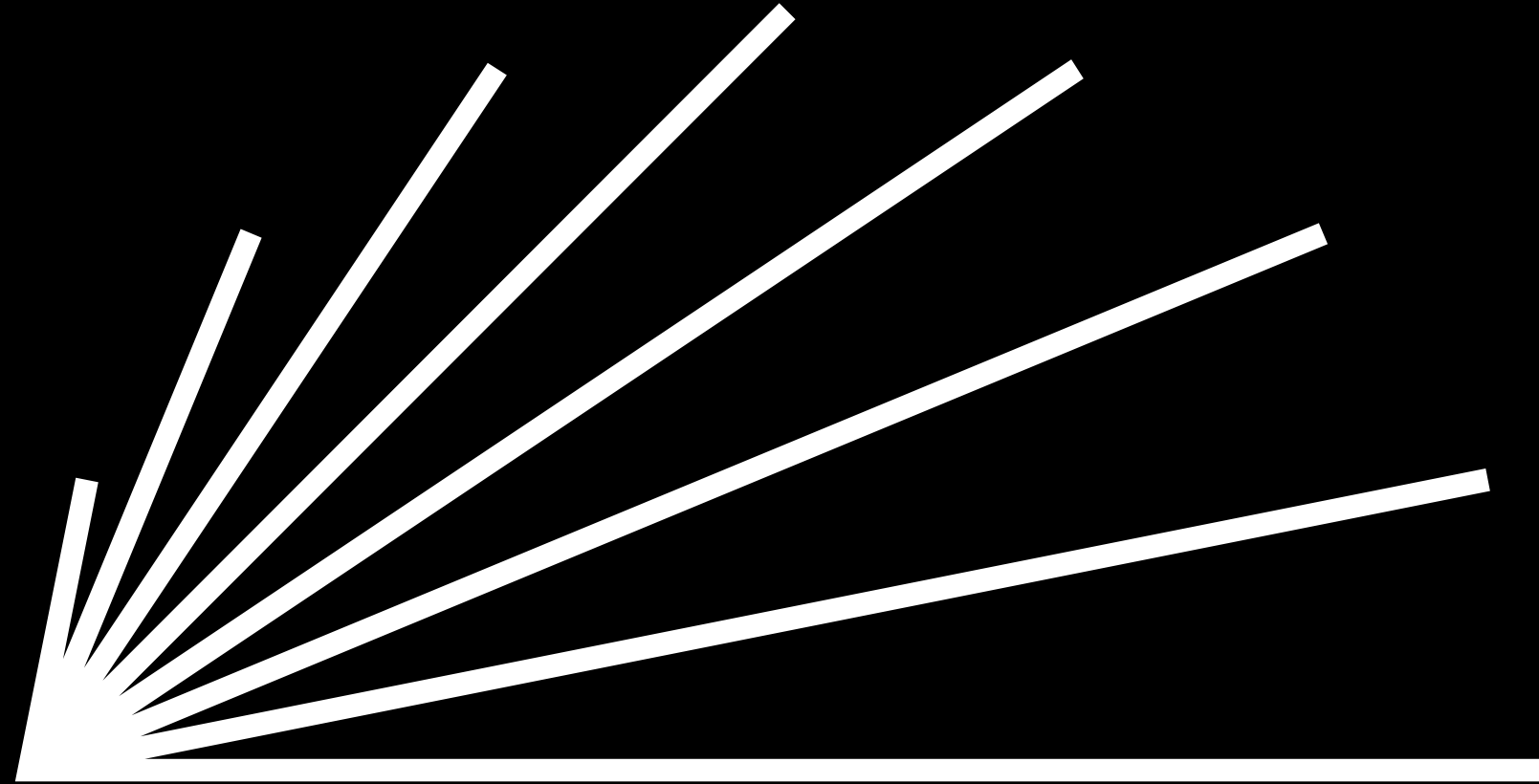
A single digital window for the EU

Siili is designing and building the Finnish component of this system with an emphasis on creating a neutral data platform that will optimize digitalization in the field of maritime traffic, rethink ways of working, and enable building services for added value.

// OUTCOME

A pioneer in maritime situational awareness

Finland will be the lead innovator in this field when the system is launched and ultimately this work will power the ecosystem of trade and logistics within the EU.



SIILI®