CGI Profio360

Modernization Journey

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CGI

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CGI at a glance

Founded in 1976

43 years of excellence
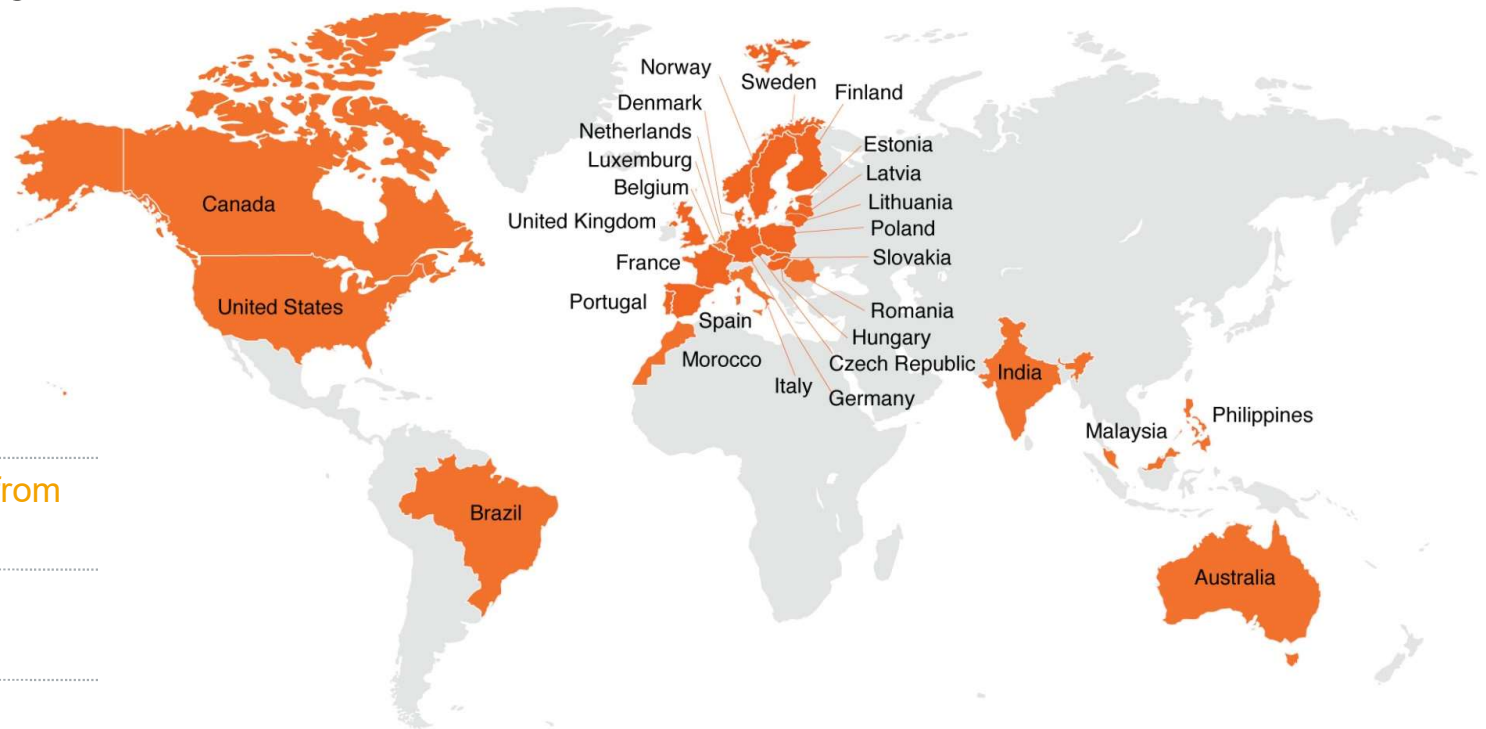
CA$11.5 billion revenue

76,000 consultants

400 locations in **40** countries

5,000 clients benefiting from end-to-end services

175 IP-based solutions serving 30,000 clients

Norway
Sweden
Finland
Denmark
Netherlands
Luxemburg
Belgium
United Kingdom
France
Portugal
Spain
Morocco
Italy
Germany
Estonia
Latvia
Lithuania
Poland
Slovakia
Romania
Hungary
Czech Republic
India
Philippines
Malaysia
Canada
United States
Brazil
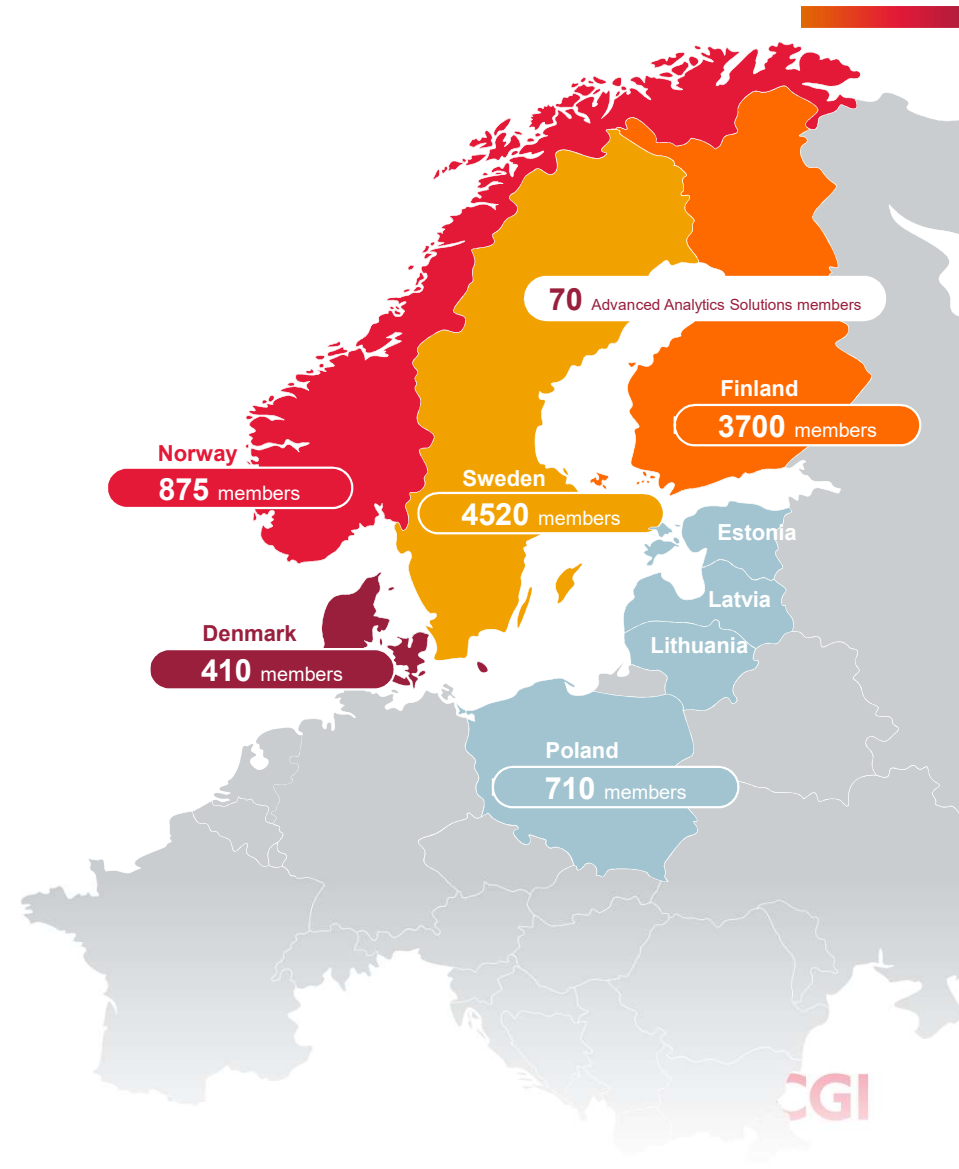Australia

CGI in Northern Europe

Client Proximity

10 000 members
8 countries in 6 BU´s
64 offices

Center of Excellences:

- Security
- Agile Development
- Advanced Analytics & AI
- Service Design

70 Advanced Analytics Solutions members

Finland
3700 members

Norway
875 members

Sweden
4520 members

Estonia

Latvia

Lithuania

Denmark
410 members

Poland
710 members

CGI in Finland

CGI

3 700 employees

18 locations

3500 clients

Tornio
Oulu
Vaasa
Kuopio
Joensuu
Pori
Rauma
Turku
Lappeenranta
Espoo   Helsinki

Hämeenlinna
Jyväskylä
Kouvola
Lahti
Mikkeli
Riihimäki
Tampere

CGI and Progress in the Nordics
1000+ companies 100 000+ daily end-users

CGI

Profio360 (ERP, Construction & Manufacturing) 🇫🇮

PC360 (Insurance) 🇫🇮

Powered (ERP, Manufacturing) 🇫🇮

Gemini (ERP for Healthcare) 🇫🇮

Populus (HR, Payroll) 🇫🇮

Winsure (Insurance) 🇫🇮

IT4Cargo (Logistics & Transportation, Custom) 🇫🇮

CGI Graphical, G10, eGD (printing and publishing) 🇫🇮

Ratti (Vehicle insurance, OP-Pohjola) 🇫🇮

Winlife (Life insurance, HenkiFennia) 🇫🇮

TWIN360 (Treasury and Asset Management) 🇫🇮 🇸🇪

Biochemistry LIMS (Healthcare) 🇩🇰

Blood bank (Healthcare) 🇩🇰

Pathology LIMS (Healthcare) 🇩🇰

Genetics LIMS (Healthcare) 🇩🇰

CGI Profio360

40	**Years of development** and experience
10+	**International solution** In use in more than 10 countries
70	**Customer service** Provided by 70 experts

200	**Customer companies and organizations** streamline their operations with Profio.
2 000	**Profio Solution being used** in 2000 sites (factories or construction sites)
10 000	**Profio Solution** used by more than ten thousand individual users.

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CGI Profio360 ERP

ERP Processes

CGI Profio360

Projects	Services	Purchase	Inventory	
Offer Calculation	Sales	Engineering	Manufacturing	Dispatch

Supporting Functions

Basic Data	Document Managemt	Operative Accounting	Financials	Wages

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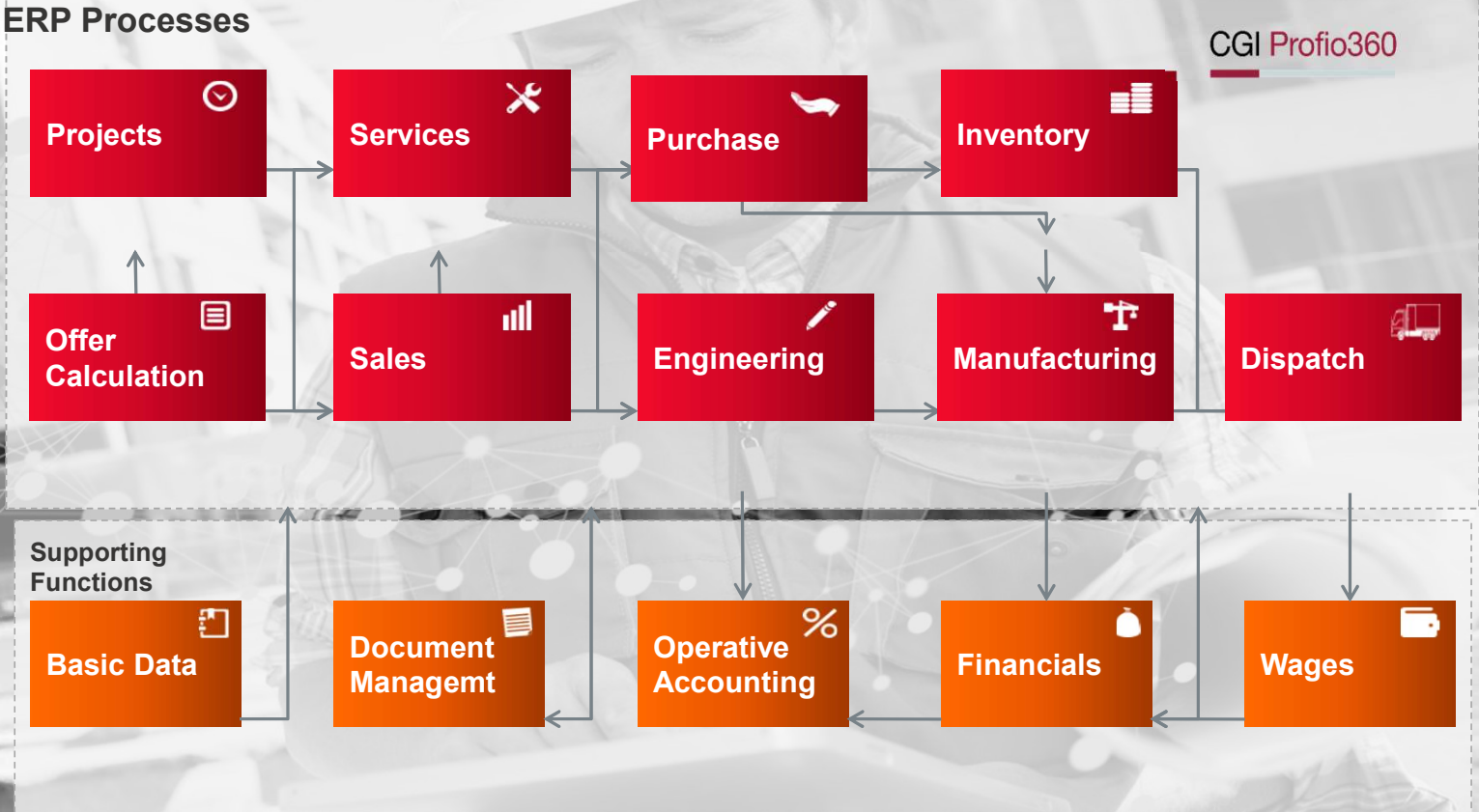
Long term commitment to all stakeholders

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(Työkalupakki) V8

CGI Profio360

| 1982 | 1995 | 2000 | 2005 | 2010 | **2017** |

Työkalupakki
V1.0

Työkalupakki
V7.0

Projector V7.a
Työkalupakki V7.4
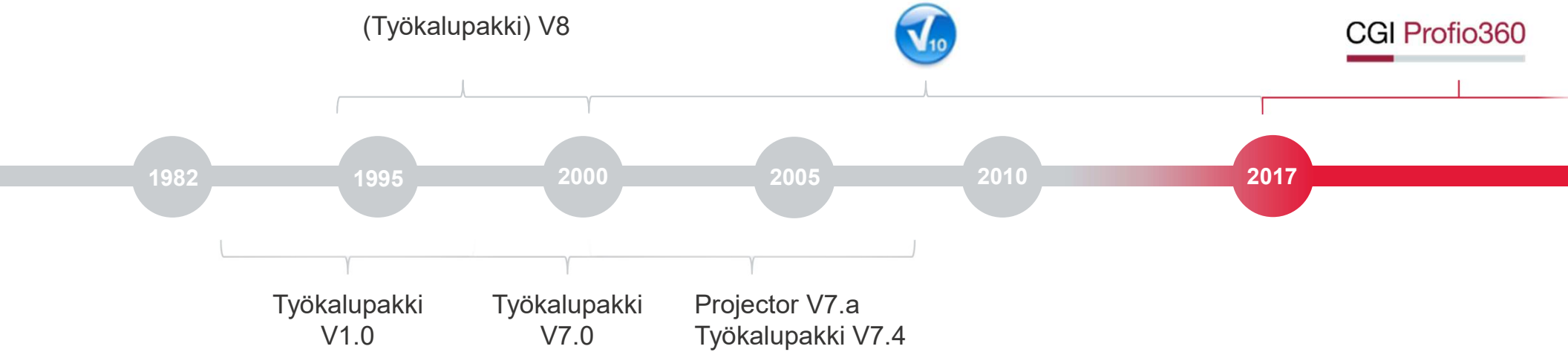
Four years ago…

- Mainly Windows client only
- Only a few dedicated web and mobile solutions
- All development, sales, deliveries and client support was made by the core team with less than 100 members
- Restricted application
- Dated UI
- Not the best possible UX

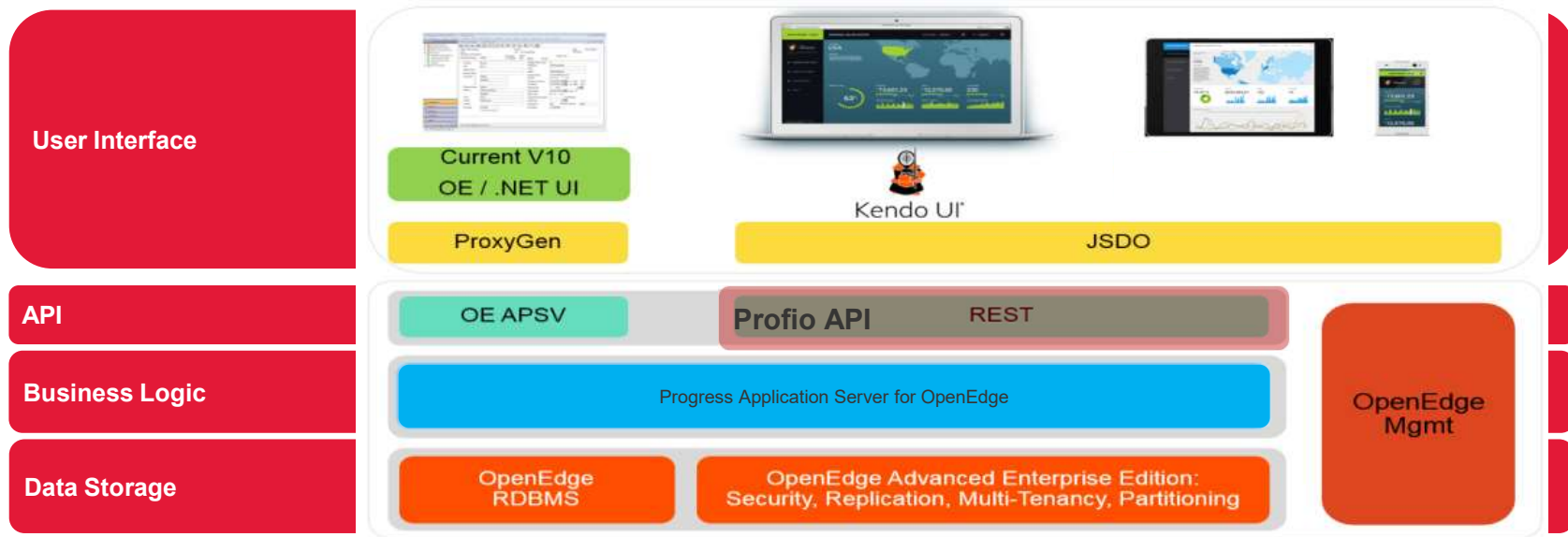→ Something had to be done to be able to stay in business

What did we do?

- **We had a vision**

- **CGI provided funding**

- **Progress provided the tools**
  - Project Garage
  - PASOE
  - Kendo UI

→We are back in business stronger than ever
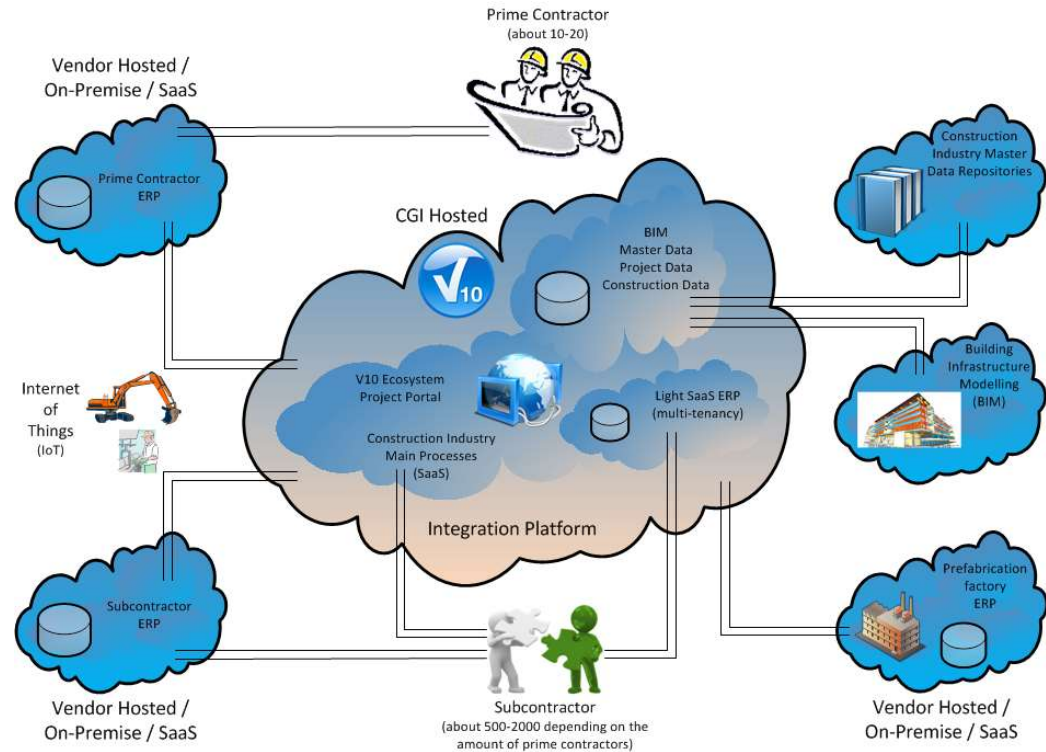
Modern Architecture

To be able to strive for our vision we had to

- Select solid technology stack
- Refine the architecture and adopt separated layers
- Implement Profio API

Key elements for application framework

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Dynamic ①

Dynamic UI
Easy to customize

② **Modular**

Small, reusable modules
Menus and screens built
of interconnected
modules

Productive ③

Easy to develop and
maintain
Easy to deliver

④ **Effective**

Best possible
performance

Framework features

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Meta data repository

Definition of application structure and behavior. Enables a **dynamic application** that can be modified in many ways without any programming. Screens can be built of several individual, **interconnected modules**.

Standard template

Base for each **individual module**. Offers a lot of **common functionality** for UI screens out of the box. Enables **great productivity** and helps to maintain **high quality.**
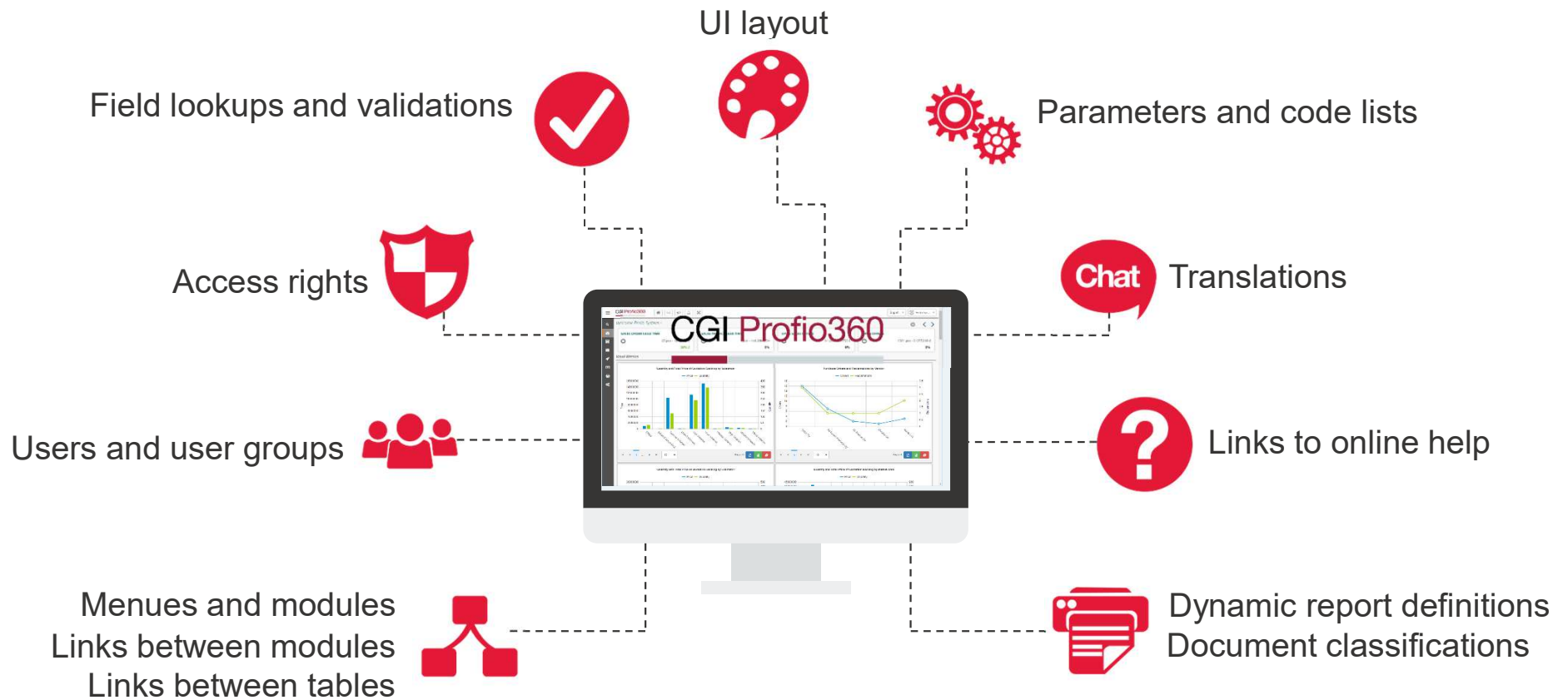
Service modules

Offer a lot of **common services** for other modules and **access to meta data**. Enable smaller, **more efficient** r-code. Memory-resident for **fast access**.

Change bulletins

Method for combining meta data, program changes and change descriptions as a package for an **easy delivery** to our customers. Early form of DevOps and CI/CD.

Meta data repository

UI layout

Field lookups and validations

Parameters and code lists

Access rights

Chat Translations

Users and user groups

Links to online help

Menues and modules
Links between modules
Links between tables

Dynamic report definitions
Document classifications

Previous modernizations (2000-2017)

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AppServer	Created technology for making a thick client AppServer enabled so that temp-tables are used instead of direct database connection
WebSpeed	Created technology for generating html/javascript dynamically from template based programs (same .w for client and web)
.NET UI	Added support for embedding .NET panels/forms inside the application and created the main menu, toolbars etc. with .NET components

Framework modernization - new vision

- Our vision for the framework was enhanced by new requirements:
  - Separate the business logic from the (very thin) UI
  - Offer an API to our business logic for integrating other systems etc.
  - UI independency: support many different platforms, client types and form factors
    - Use the common meta data whenever appropriate
  - Modern, top notch UI/UX

Framework modernization – results

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- UI and business logic have been separated by creating an **API layer**
  - REST
    - ABL Service with REST transport
    - JSON as the data format
    - Static services + a dynamic service for general usage
  - PASOE
    - A natural choice for offering a REST based API
    - Excellent performance and scalability
    - Spring (form based) authentication with support for multi-tenant databases
  - Serves as an API to third parties
- New **UI templates** for web front-end
- New (back-end) **service modules** for session management, filtering, translations etc.
- Even **more meta data** is now stored in the repository, including:
  - Additional properties of screen layouts (better support for adaptive web UI)
  - Support for additional UI element types (carousels, charts etc.)
  - API services related to a module

Framework modernization – future plans

- The highest priority is to continue adopting DevOps principles and methods
- Traditionally, we have had
    - In-house built version management tools
    - Change bulletin mechanism for deliveries (including quite a lot of manual work)
- Currently we are
    - Unifying development methods and tooling for both client and web development
    - Adopting Git and CI/CD pipeline for
        - Automating builds
        - Automating tests and code validations
        - Reducing manual work
        - Increasing quality

Where are we now?
Multi channel Profio

- **Client** functionalities are still enhancing

- Modernized **web** UI for specific modules (purchasing, project management, sales, offer calculation, cost monitoring)

- **Profio Mukana native mobile application for** Android and iOS

- **3D visualization** linked to the context and features of Profio (data modelling)

- **Profio as a data source to Analytic tools** like MS Power BI

- Agile way of integrating **value added services and tools to Profio** (IoT, ChatBot,…)
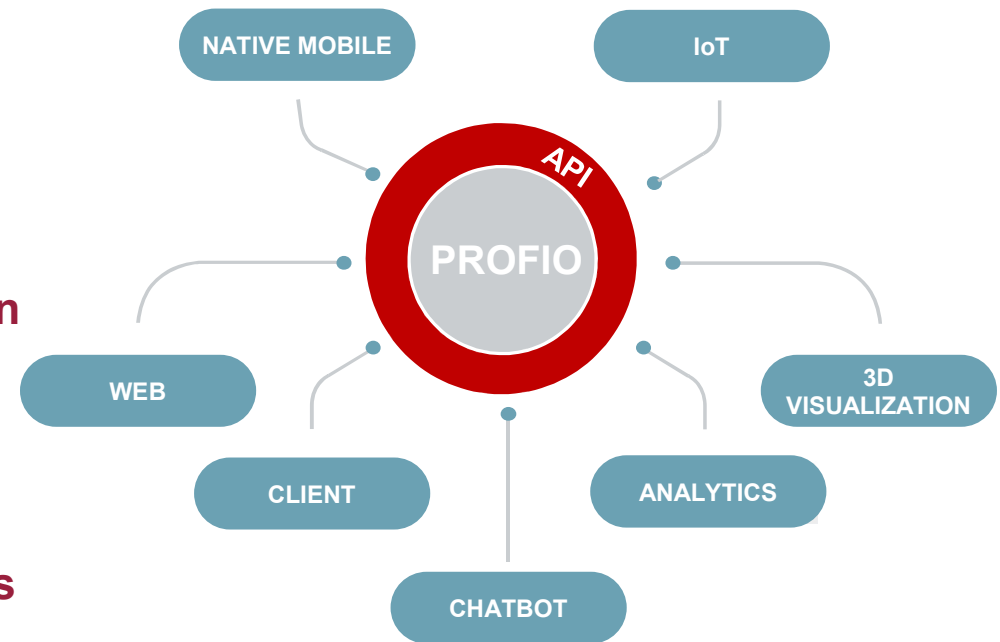
Benefits of API based development

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Business logic and APIs

- Separated development and testing

UX/UI design

- Mandatory UX/UI design
- Development can start only based on approved design

UI development

- Development is done for the device to best fulfill the requirements of end user's role (web, mobile, Windows client, …)
- Development resources outside Profio core team can be used

Dashboard – Key Figures
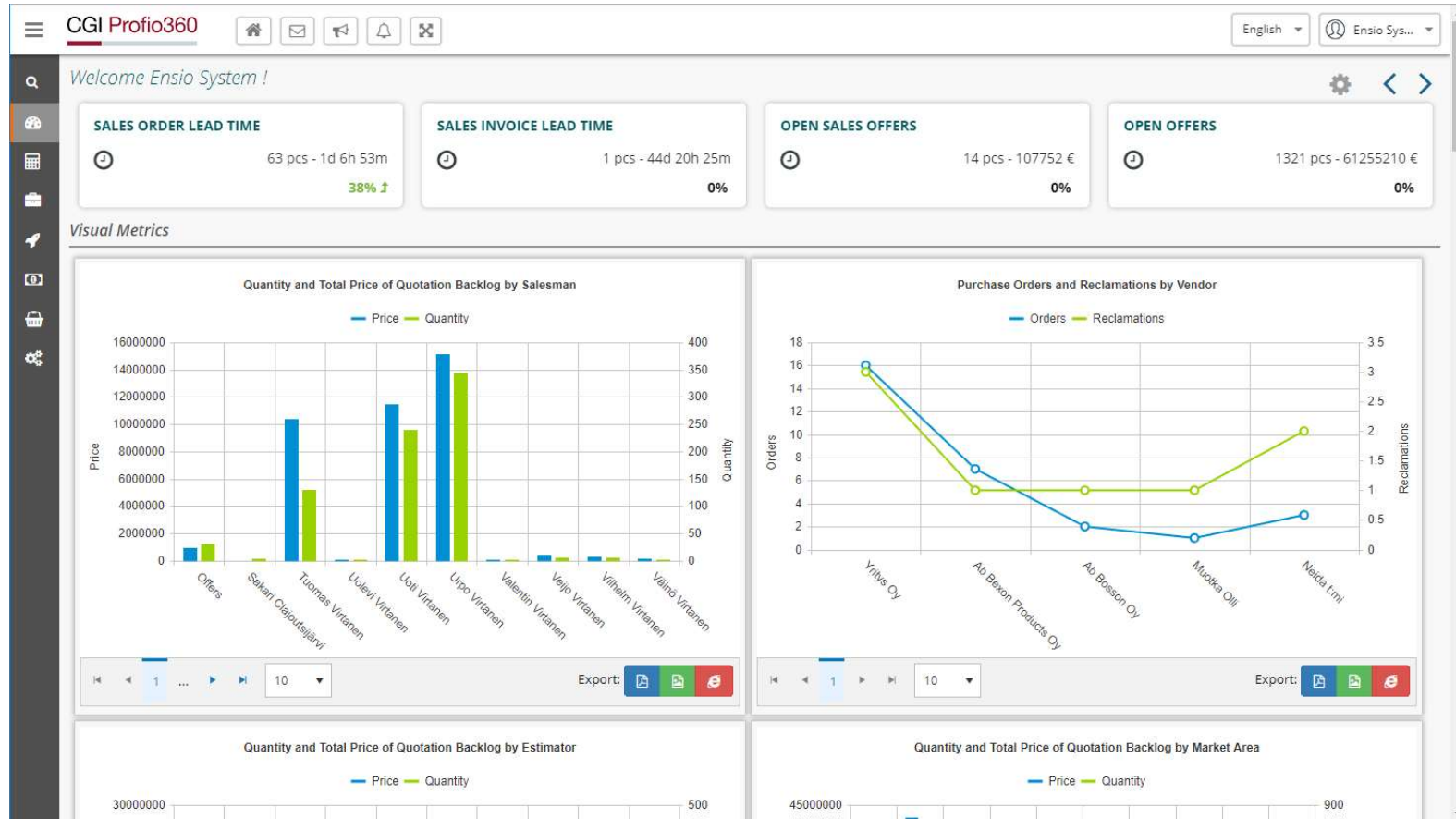
Purchase Invoice Approval

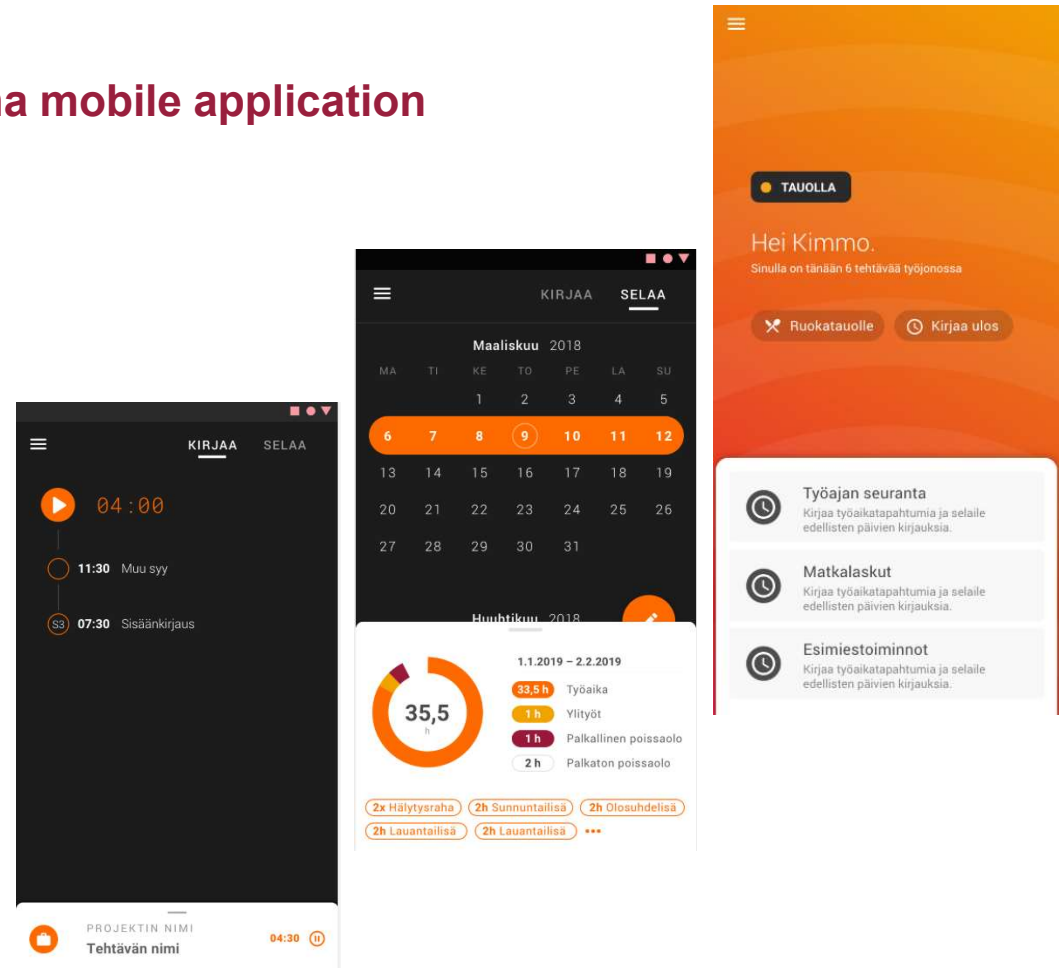# Project Management – Gantt Diagram

Project Management – Time-Space Diagram
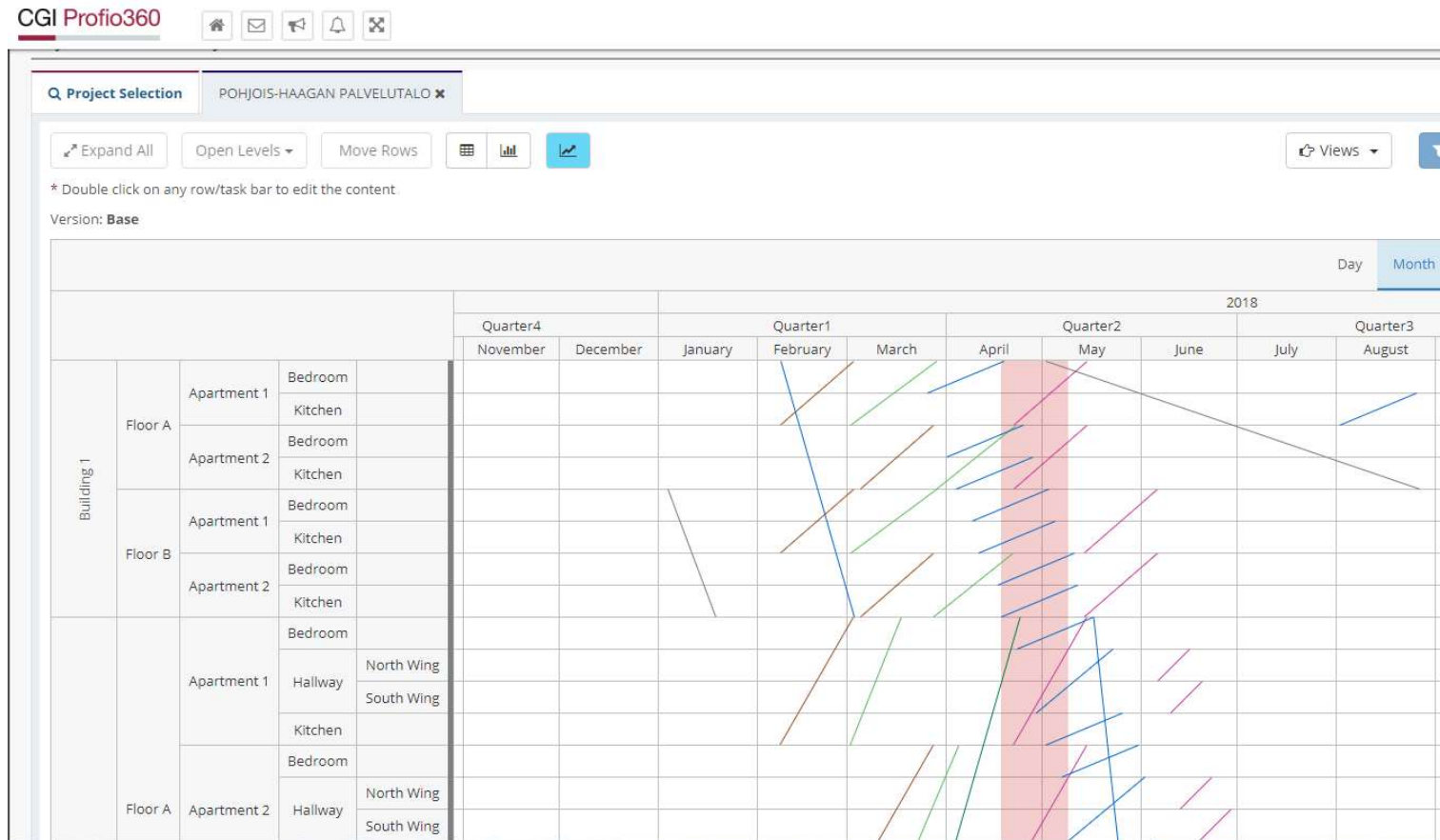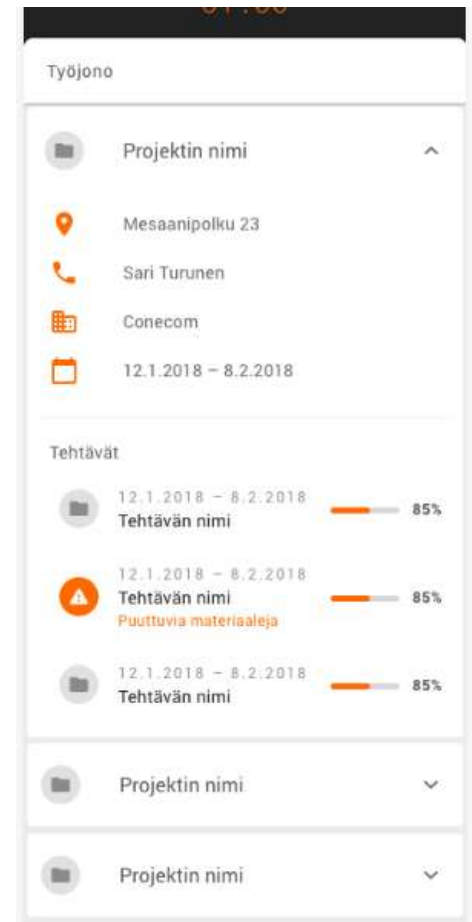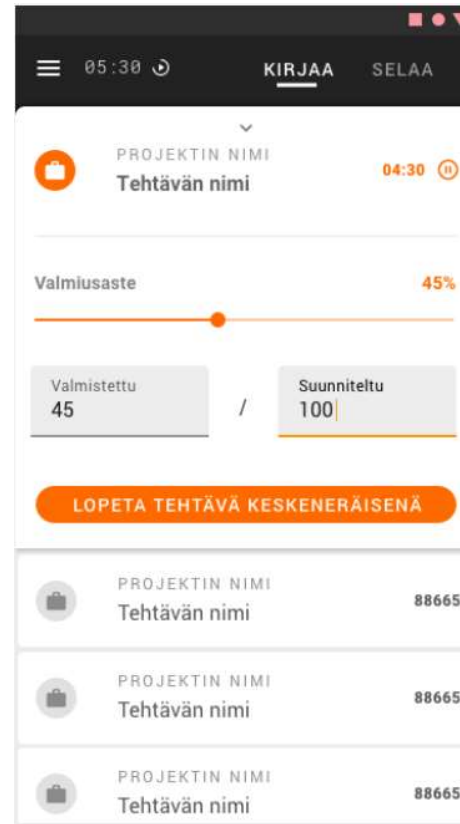
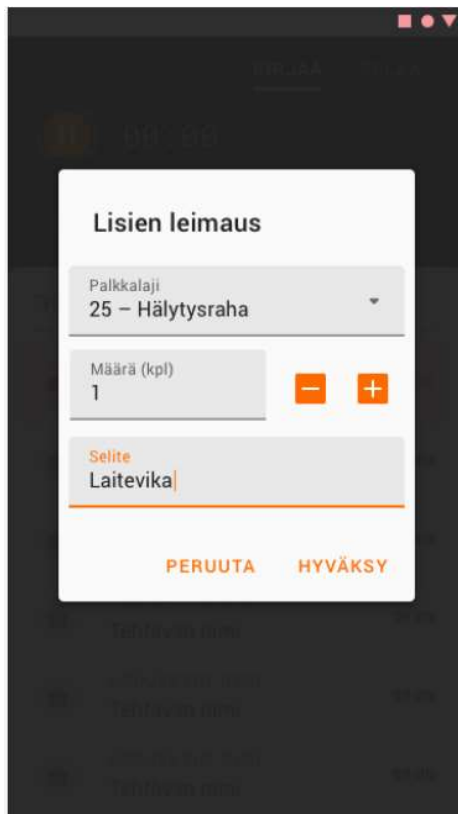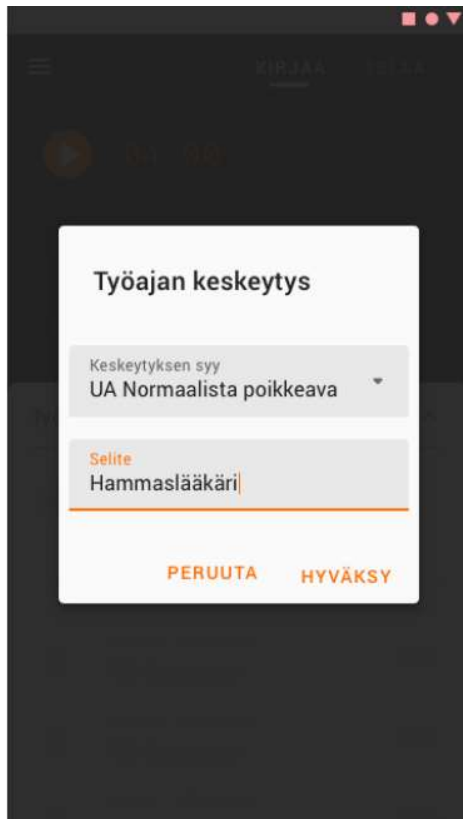# Project Management – Visualization in 3D
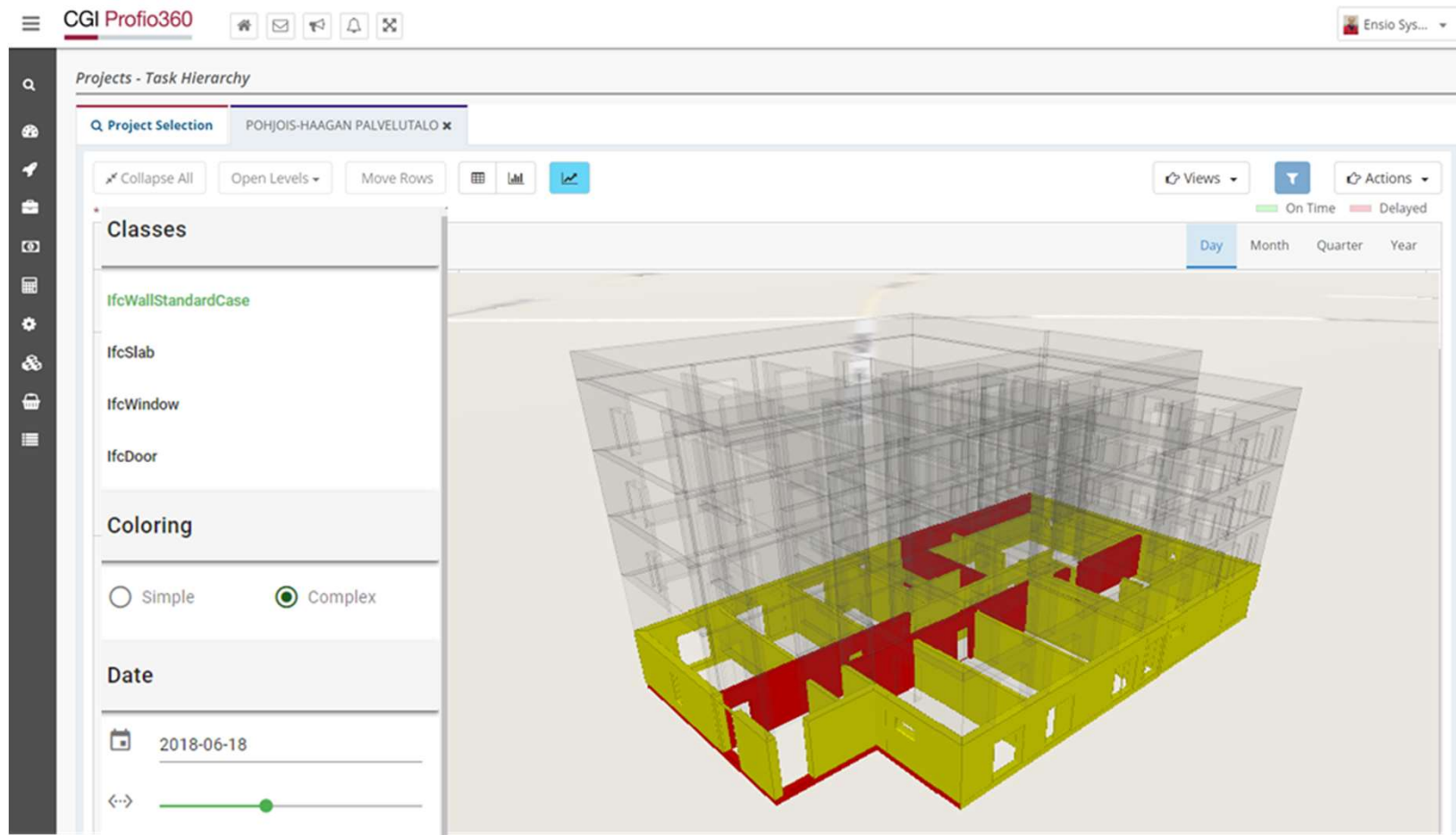
Profio Mukana

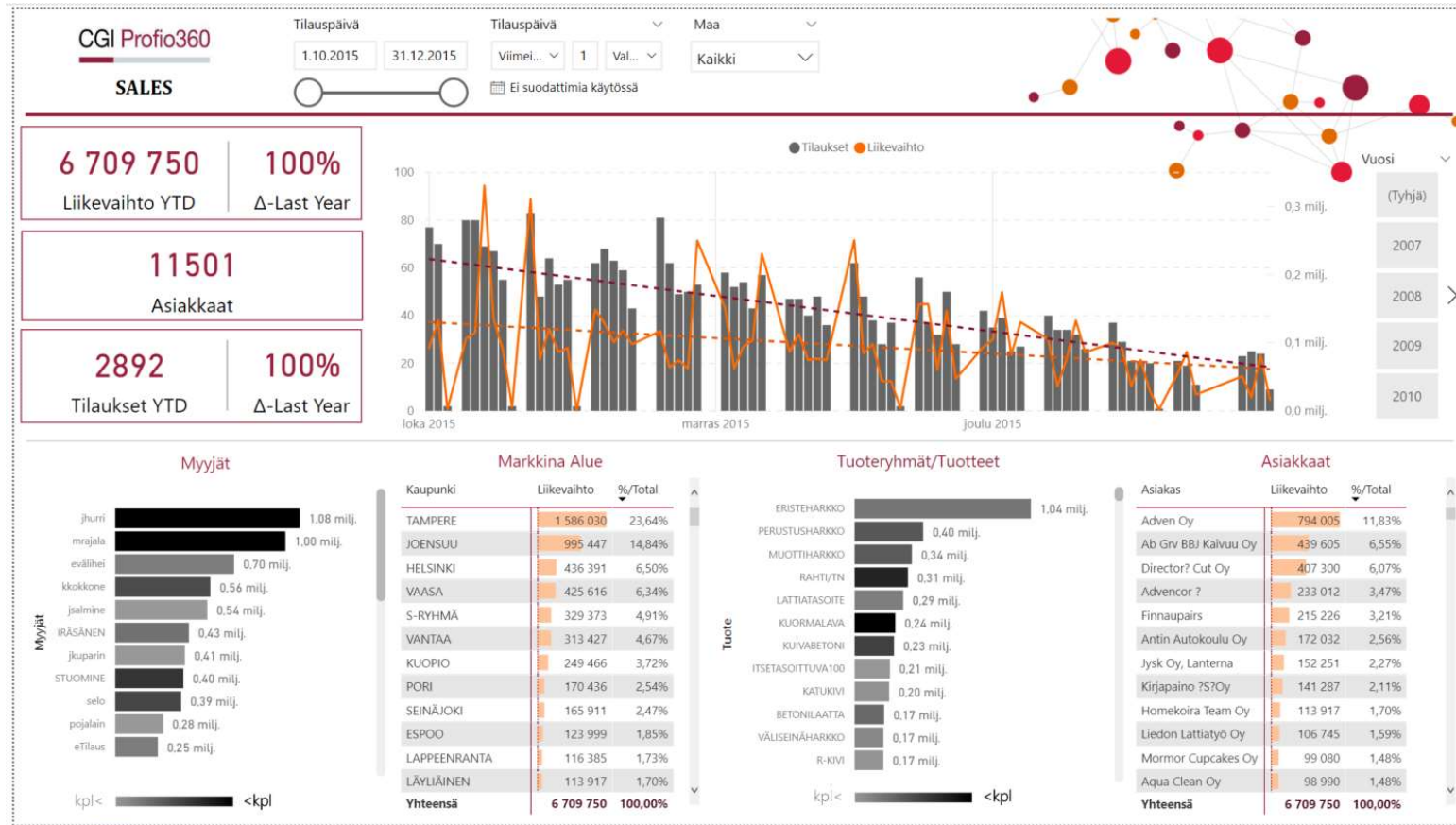Android and iOS compatible **Profio Mukana mobile application**

- SaaS

- Hour reporting
- Inventory transactions
  - Receiving
  - Picking confirmation
  - Inventory

Mobile layout

Profio Analytics

CGI Profio360 Product strategy
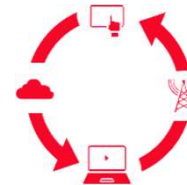## Multi channel Profio

We'll create **Profio platform** with versatile use of **API**. Easy to sell, easy to buy.

To integrate data in Profio (purchasing, sales, manufacturing and sites) seamlessly to analytic tools like MS Power BI
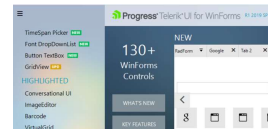

Profio Mukana implementation continues

To utilize **CGI competencies** by providing rich **API**.

3D visualization as part of Profio to support the needs of both construction and manufacturing industry

Improved UX for client as well

CGI Profio360 Product strategy
Improved UX to all our clients

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Deploy and utilize the features of new
OpenEdge release 12.
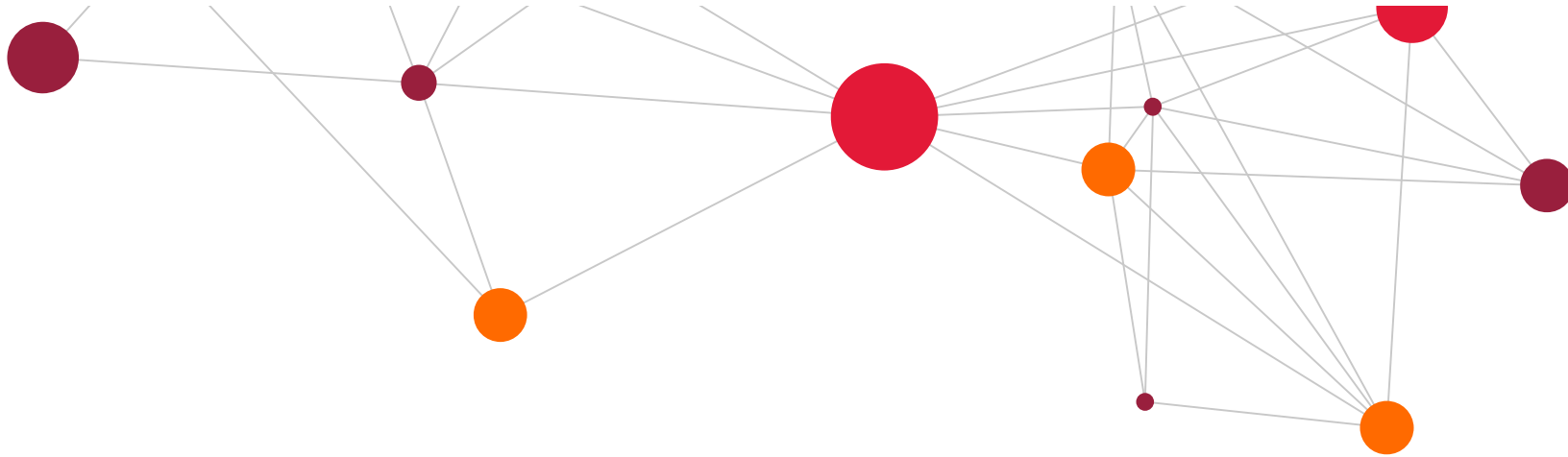
To utilize **service design** in all
Profio development.

Impoving **Profio Client** UX with modern
components.

Highlight the role of **module owners**.

Utilizing the synergy of **G10 and Profio** in product
development.

Contact us to continue the conversation.

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