

SaaS-basierte Projektmanagementsoftware für Selbstständige und Kleinunternehmen

Students



Noah Stalder



Joel Sauvain

Problem: Project management and organizational software is a complex domain and already a well-saturated competitive market. Due to users' various levels of technical affinity, user-friendliness is a key aspect for software trying to gain a foothold in this market. Especially for smaller ventures and freelancers, project management and administrative tasks are often not their main activities, but something keeping them from spending more time doing what they really want. On top of that, project management, creating offers, and invoicing are often only seen as a means to an end and not something to be enjoyed. Therefore, project management software should make the lives of their users easier by reducing the overhead to a minimum. Tools in this domain should offer broad functionality while not being overly complicated.

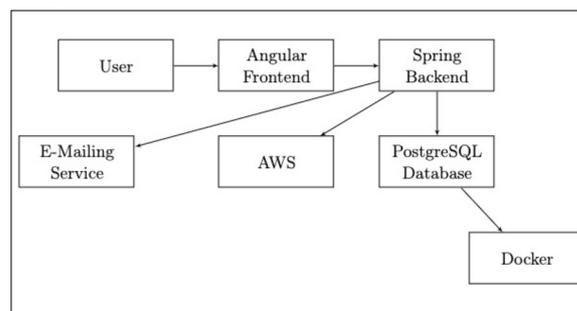
Approach / Technology: A market analysis identified smaller ventures and freelancers as a suited market segment to target with software tailor-made for their needs. To get an even better understanding of the target audience, multiple representatives of this customer segment were consulted to identify their detailed needs and to define and prioritize requirements. While multiple freelancers and small ventures have previously been creating their offers with Microsoft Word, tracking their efforts with Excel and taking notes in a text editor, Consilium unites these tasks into one application. To get an edge over competitors, Consilium identifies and uses synergies between those administrative tasks to make them simpler.

Consilium is built with a Java Spring backend and an Angular frontend that communicate via RESTful HTTP. It is tightly integrated into Spring, using various Spring features for an improved and smooth integration. The relational database Postgres persists the data. In the backend, the O/R mapper jOOQ is used to interact with the database, which allows for type-safe writing of queries in Java and access code generation.

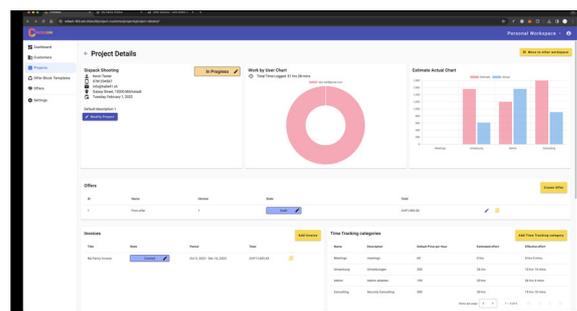
Result: By introducing innovative concepts, Consilium managed to become a well-rounded administrative tool, offering functionality from managing offers to creating invoices, while maintaining sufficient depth to model even complex workflows. Consilium is designed to be cloud-ready and offers uncomplicated login functionality allowing potential users to sign up in seconds using social logins. The thesis results demonstrate the cloud-readiness by deploying the application on AWS although Consilium is not tied to any single cloud provider. While primarily targeting independent freelancers, Workspaces are implemented, allowing user groups to collaborate. On top of all functionality offered, Consilium maintains a high level of customizability, allowing for custom branding on exported documents and content to be

added using a rich text editor, whose content is translated and exported into a PDF document. Consilium manages to reduce the administrative overhead significantly by building smart workflows through smart reuse of data. Additionally, monitoring functionality is provided by visualizing collected data. Early user tests show that Consilium is already in a state of maturity that helps freelancers improve their productivity by streamlining processes, showing significant improvements compared to their previous processes.

System overview - This diagram shows the most important components and infrastructure involved in Consilium.
Own presentation



Project Details - This screenshot shows an overview of a project in Consilium.
Own presentation



This screenshot shows an offer, created with Consilium.
Own presentation

Pos	Description	Quantity	Price	Total
011	Photograph	16 hour	CHF 125.00	CHF 2'000.00
012	Drone rent	2 day	CHF 400.00	CHF 800.00
013	Drone Operator	12 hour	CHF 90.00	CHF 1'080.00
014	Editor	6 hour	CHF 100.00	CHF 600.00
Total				CHF 4'480.00

Advisor
Prof. Dr. Olaf Zimmermann

Subject Area
Software, Application Design, Networks, Security & Cloud Infrastructure

