



Smartdevis

Construction document management software

www.toopllox.com





smartdevis

The Tooploox team has delivered product discovery workshops and further development which ended with releasing an app that automates and supports the construction process in the Swiss market.

The construction market in Switzerland is experiencing stable growth powered mostly by investments done in infrastructure, green energy, and institutional construction. One of the country's primary goals is to reduce the density of road traffic by investments in railroads and public transportation.

Having a stable economy with one of the strongest currencies in the world, Switzerland is one of the most interesting markets in which to operate. Also, being apart from mainstream markets like the US, UK, or EU, the country provides an interesting ground for startups to operate.

The Swiss construction market was exactly the place of operations for Smart Devis, a Zurich-based startup that aimed to support the construction cost estimation and planning processes.



The client

Smart Devis was forged as a response for a common pain in the Swiss construction market - a tedious and troublesome process of managing cost estimations and contractor offerings. The construction process itself is composed of several stages with multiple independent contractors working together as well as one after another to finish the process.

When it comes to the Swiss construction segment, the challenge is in staying compliant with the legal requirements and overall process.

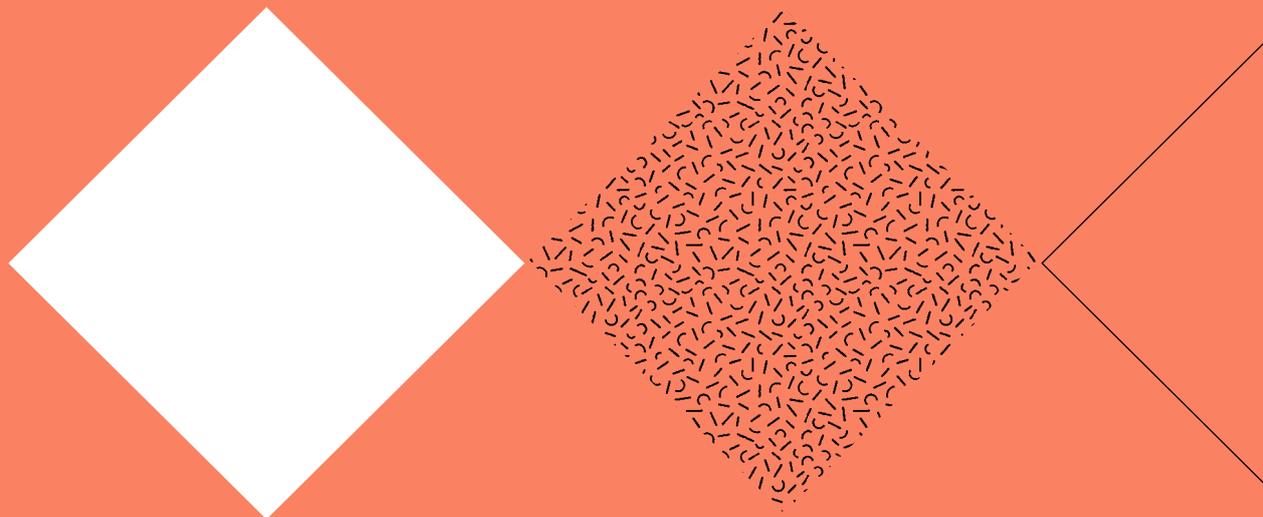


How cost estimation is done now

The process of cost estimation and construction management in Switzerland is done manually or was briefly supported by unsophisticated tools like simple software or spreadsheets. This comes with several drawbacks:

- Although the spreadsheet can support calculations and store a lot of data with a certain logic and structure forced, its convenience in use is limited.
- At the same time, it is common for the contractor to send a hand-written offer with no clear structure. Thus there was a lot of manual and tedious work in making comparisons between multiple offers. In fact, delivering a reliable and fair comparison between offers requires a lot of man hours or even a dedicated employee whose job is only to read and standardize offers from contractors.
- The challenges mentioned above result in the fragmentation of data when it comes to construction process management. When spread between spreadsheets, hand-written notes, emails, and multiple other tools, the information is nearly useless, with a great need for an individual to memorize a lot of facts.

In the end, answering the simple question “how much did the roof cost” could have taken a very long time!

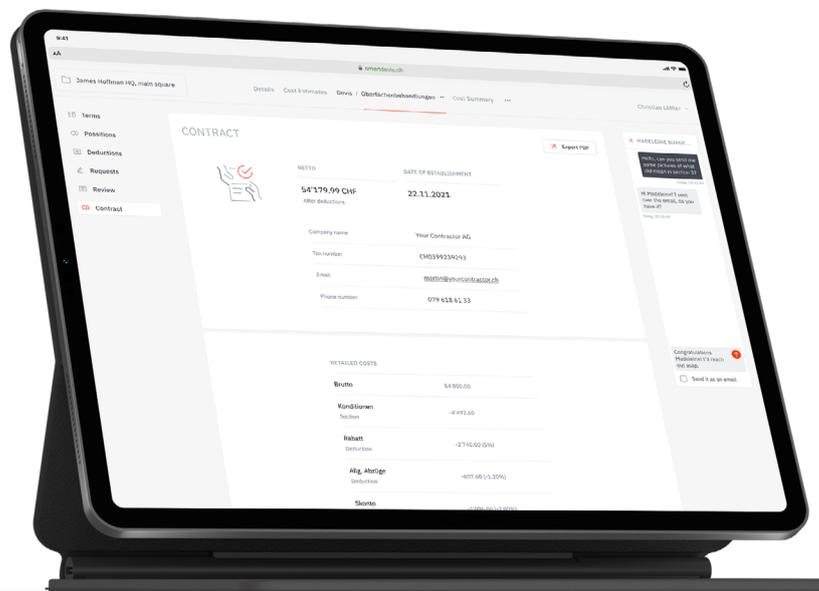


The challenge

Disrupting the way the problems are solved with new approaches and technologies is the core of how startups do their business. And that's exactly the place where Smart Devis wished to enter with their idea and passion.



To get the best from their vision and deliver their dream product they decided to call in the Tooploox team for support!



Our work



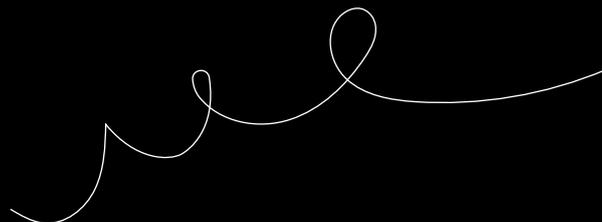
The Tooploox team launched a four-day workshop which aimed to:

- ➔ **EXPLORE** the domain
- ➔ **CRACK** the whole process and split it into parts that could be extracted to serve as a product basis
- ➔ **REFRAME** what was found into a business and product framework

The effects were impressive, with a prototyping workshop done as well as the sculpting of the initial vision of the product. The workshop was conducted with:

- ➔ **ARCHITECTS**, who are the end-users of the product and their needs are to be fulfilled
- ➔ **CONTRACTORS**, who are the second type of user
- ➔ **INVESTORS**, with their willingness to support the product (or lack of thereof)

Our team worked closely with the target groups to collect all ideas, visions and expectations regarding the product. This workshop was necessary to sculpt the foggy concept into a business plan and a clear vision of the product to be delivered.



Product delivery

The initial process of **prototyping** the construction document control software was done during the workshop. The session was conducted as an independent **consultation** and the **product design process** to provide Tooploox's client with information. But the Smart Devis' team was so happy and satisfied with our work that they decided to entrust the Tooploox team with the **coding** and product delivery as well.

Development



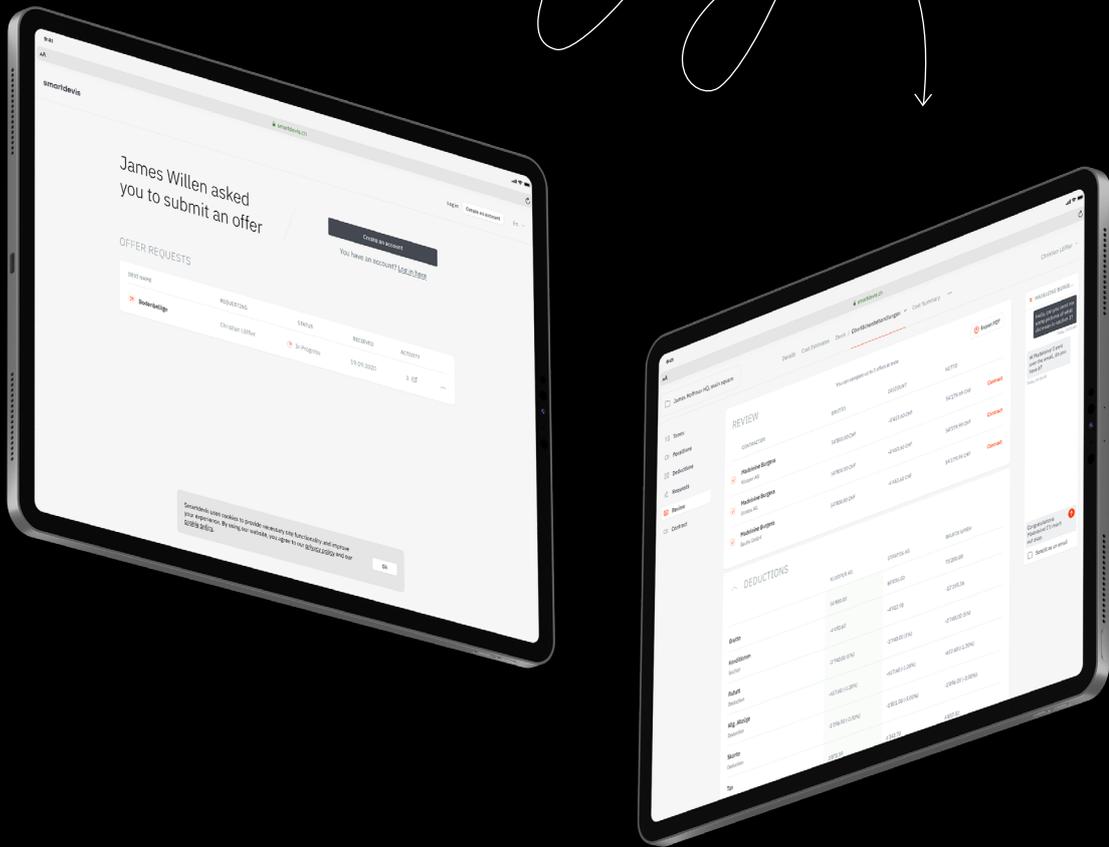
One of the business goals was to quickly deliver a minimal value product in order to validate market needs and test the functionalities with real users. To achieve that, the development team decided to set up the application on **Google's Firebase infrastructure**.

What is Firebase

Firebase is a compelling product to get things up and running fast, especially for startups, when time-to-market is everything. It offers authentication services, a realtime database and self-hosted cloud functions, to name just a few, but it comes with a cost - the cloud services tend to lock its users into their ecosystem and that can clash with the flexible nature of startups.

If your startup eventually gets big, you may want to shift to a different solution, and then you'll have to face the overhead of moving things around. That is exactly what we wanted to avoid, that's why the architecture has been based on a popular pattern called event sourcing (instead of storing just the current state of the data in a domain, we used an append-only store to record the full series of actions taken on that data) which provided us with the ability to migrate all the data easily and, in the end, allowed us independence from the vendor. market needs and test the functionalities with real users. To achieve that, the development team decided to set up the application on Google's Firebase infrastructure.





On the browser side, we went with the modern approach of a single page application built on React with TypeScript, which proved to be the best many times when it comes to rapid growth and flexibility. We were constantly collaborating with domain experts in order to improve the application model and resolve any emerging domain-related issues (this is called Domain Driven Design). **All this allowed us to deliver a viable, high quality product in just 5 months.**

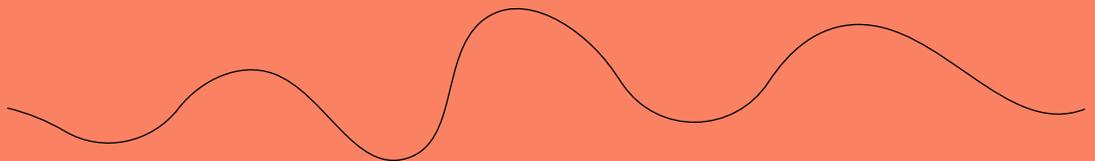


The effect



Currently, Smart Devis is a fully operational and functional app that supports engineers in the construction process in many ways:

- The architect and the team supervising the construction process get full information about the ongoing processes stored in one construction documentation software, available in the form of a convenient dashboard.
- The team can build its own logic for the documents and offers collected from contractors, standardizing and storing them in a sorted way. Thus, it is easier and much more efficient to deliver comparisons.
- Additionally, the contractor gets a convenient form to fill in with his or her offer, making the process more efficient - the form of the offer is imposed and only the content or prices are required to be filled in.
- The team supervising the construction process can make some fields mandatory to avoid any form of offer manipulation, like skipping details or delivering an incomplete offer to make it look more competitive or obfuscate the drawbacks.
- The app itself delivers ways to communicate for both parties - an internal live chat, messages and emails, to make the process more efficient. Also, keeping track of communication within the tool makes it more transparent and ensures that no detail gets lost in the process.
- The solution was designed to work in an international environment and in different languages - currently it is available in English and German.



Whether you need a full product, consultation, product discovery or a tech partner, our experts will help you find the best solutions.



Beata Patfield
Head of Business Development (AI)
beata.patfield@tooploox.com



Mateusz Blum
Head of Business Development (web / mobile)
mateusz.blum@tooploox.com

www.tooploox.com