

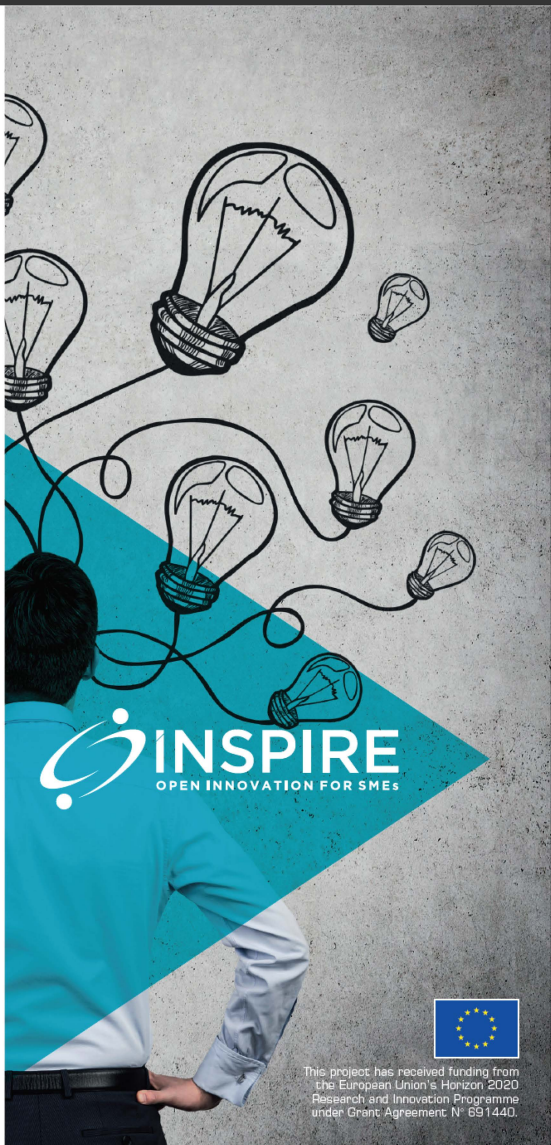
TIMBETER

Estonia, www.timbeter.com

An Estonian entrepreneur attended a local hackathon with the intent of solving a problem which is common in the timber industry and ended up launching an ICT business with international potential

Executive Summary

The Timbeter case is an example of a demand pull innovation initiative from a low-tech industry which led to the creation of a high-tech company. Timbeter is an innovative solution for measuring timber quickly and accurately using image recognition. It reduces time-consuming and boring manual measurements, bringing transparency and efficiency to the timber industry. It started as a project at the Marmande saw-mill which was seeking to solve their problem. The Timbeter team met for the first time in October 2013 at the Garage48 hackathon event in Parnu. After the owner of Marmande presented his problem, it took the hackathon team just 48 hours to come up with the first prototype of the solution.



INSPIRE
OPEN INNOVATION FOR SMES



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CASE N° : EE23

SECTOR: INFORMATION TECHNOLOGY

TECH INTENSITY: HIGH-TECH

LIFE CYCLE STAGE: START-UP

INNOVATION VECTORS: PRODUCT

01 PARTNERS: LEAD CUSTOMERS/USERS, CROWDSOURCING

KEYWORDS: Computer vision, log volume measurement, forestry

- BACKGROUND FRAMEWORK
- INNOVATION CHALLENGE & MARKET OPPORTUNITIES
- OI TRAJECTORY
- BUSINESS IMPACT
- LESSONS LEARNED



TIMBETER

BACKGROUND

In 2013, the organizers of the Garage48 hackathon in Parnu, Estonia were looking for local companies to contribute their business ideas. They contacted Vallo Visnapuu, the owner of the Marmande saw-mill (Vallo established the company in 2000). As the owner of a saw-mill at the time, he was facing conflicts and disagreements over inaccuracies involved in measuring timber on a daily basis. He pitched the idea of using a smart device and image recognition to measure timber.

The team was formed and in 48 hours the first prototype was created. Later they participated in start-up events in Tallinn (Ajujaht, 2014). The prize money was spent on further development. Later they received angel funding. The product was launched in March 2016. In 2017 they reached out to foreign markets, signing a contract with the Lithuanian state forestry company.

In addition to working with state forest managers, Timbeter is also making its application available to private forest owners and companies who include clients from 15 countries. The company aims to go after major clients from the USA, Canada, Brazil and China in the coming years.

INNOVATION CHALLENGE & MARKET OPPORTUNITIES

As a saw-mill owner, Vallo was very familiar with the problems related to timber measurement. Disagreements over timber measurement were an everyday occurrence.

At first Vallo did not think of establishing a new company – he just wanted to solve a problem. Later though he realized that his idea could be attractive to many people in the profession who faced similar problems.

OPEN INNOVATION TRAJECTORY

Concept development

The concept (customer needs, solution

functionality, target groups) crystalized gradually. It somewhat stabilized in 2014–2015. Now Timbeter aspires to digitalize the entire timber supply chain, from the forest to the end consumer, bringing transparency, efficiency and the ability to monitor to the whole sector.

Timbeter is a smartphone application which measures timber. Usually you have two options to measure a pile of logs: either you invest one million (euros) in big, expensive, electronic measuring lines or if you don't have that one million you will measure each log, one-by-one, with a measuring stick. Timbeter's invention means that the timber professional can take a picture of the log pile and the application's software will calculate the measurement for each and every log, add them up and give the operator both the volume and the total number of logs.

The development process, IPR and competition strategy

Although the first prototype was developed in 48 hours, the team spent over two years developing the log detection algorithm. The first prototypes could measure about 70% of logs, but it took considerable effort to develop the algorithm to be able to capture the remaining 30%. Timbeter was launched worldwide in March 2016. At first, they tried to engage universities in the development work, but they were slow and lacked interest. The development stage was difficult because they had to look for funding at the same time.

Additional functionalities are currently being developed, e.g. a new feature that helps users to load a certain number of cubic meters from the pile by determining exactly the number of logs that need to be loaded.

As the development was carried out in-house, no licenses were required.

There are alternative systems already on the market. There are expensive measurement lines (about 1 M euro) and there is a mobile solution mounted on a SUV. However, it has some important limits –the pile height, distance to the pile, etc. Timbeter, on the other hand, can be easily implemented using a mobile phone or pad functionality running on Android or Apple OS. In addition to measuring log diameters and calculating the volume, Timbeter measures the surface area of the stack even if it is not a regular shape.

The market entry barriers are low as the application is downloadable through Google Play. The solution is provided as "Software as a Service"

and paid for on a monthly basis. Forestry is a conservative, traditional sector that uses a lot of machinery and makes major investments in production lines, while at the same time IT systems are underdeveloped. This is a major barrier to acquiring customers.

Commercialization and follow-up

The product has been rolled out using lead customers – government owned forestry companies in Estonia (RMK) and Lithuania (GMU). In Lithuania, the new measurement method needed official approval, so the accuracy of the measurements was validated by the Agricultural University. The software is licensed to clients on a subscription basis.

The company is still very small and so far no organizational changes were undertaken or are foreseen in the near future

There are two main sales models – direct selling and selling through social media platforms. So far direct selling is far more effective, since the industry is rather conservative. The company reaches out to usually larger companies and the selling process, when they realize the value, is straightforward and fast. Social media tends to attract individuals and smaller players, often looking for "freebies".

At times, very old and outdated measuring equipment is used. A member of Timbeter's team who recently visited the United States learned that certain timber volumes are still calculated using an equation from 1842. Every country has its own measuring principles, tree species, and has its own regulation relating to timber measurement. The product has to be adapted to each country and market entry takes place through lead customers. It is vital to educate customers, by describing each method and its pros and cons.

Some new features are currently under development.

BUSINESS IMPACT

This open innovation collaboration involving crowdsourcing and lead customers led to the creation of a brand new business inspired by the initial idea of solving Marmande's timber measurement problem.

In 2015, revenues stood at €18 000 and are expected to rise to several hundred thousand euro in 2017.

LESSONS LEARNED

The case illustrates the value of new instruments for concept development, i.e. hackathons, where the initial concept is developed in a very short time. The formula enables people from different backgrounds to meet and form a core team for further development. It also shows that the initial concept may change and that product development may take a long time to evolve after the first prototype. The case also highlights how the openness and entrepreneurial capacity of the saw-mill owner led to the creation of a new high-tech company. This raises the question of the importance of leadership. He had no previous experience in computer vision, image recognition or the ICT business in general, but he knew how to run a business.

Main lessons learned:

1. The company should have tackled international markets faster; it occurred to them a little later that the market requirements are specific to each country.
2. Lead customers helped open their eyes to the above fact.
3. Fast development and flexibility are core skills for this company.
4. Social networks have not worked as the best marketing & sales vehicle so far.
5. The time required for development work and funding their needs was underestimated.