An Explainable AI Assistant

toot your problems away

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Introduction

Our problem domain

The disk space issue is experienced by **IT experts** that work for **Managed Service Providers (MSP)**. Using Application Monitoring Systems, they are provided with detailed insights into the processes that are happening on the servers they are responsible for. When **disk overflow errors** are reported, the engineer investigates the process and fixes it with the knowledge at hand. In addition to that he is responsible for informing external parties of his issue's progress. Because such errors can happen at any time, the experts must always be available to avoid inconvenience for the MSP's customers due to server downtime.

The engineer has to decide - based on the contest of the error - **one** among these three possible solutions:

1) Extend disk space;
2) Optimize disk space (archive/remove files);
3) Report to responsible customer (ask for confirmation/indication on which action to take).

The best possible solution for a specific error depends on many factors such as the engineer's experience, the type of customer, etc.

Executive Summary

Our Solution

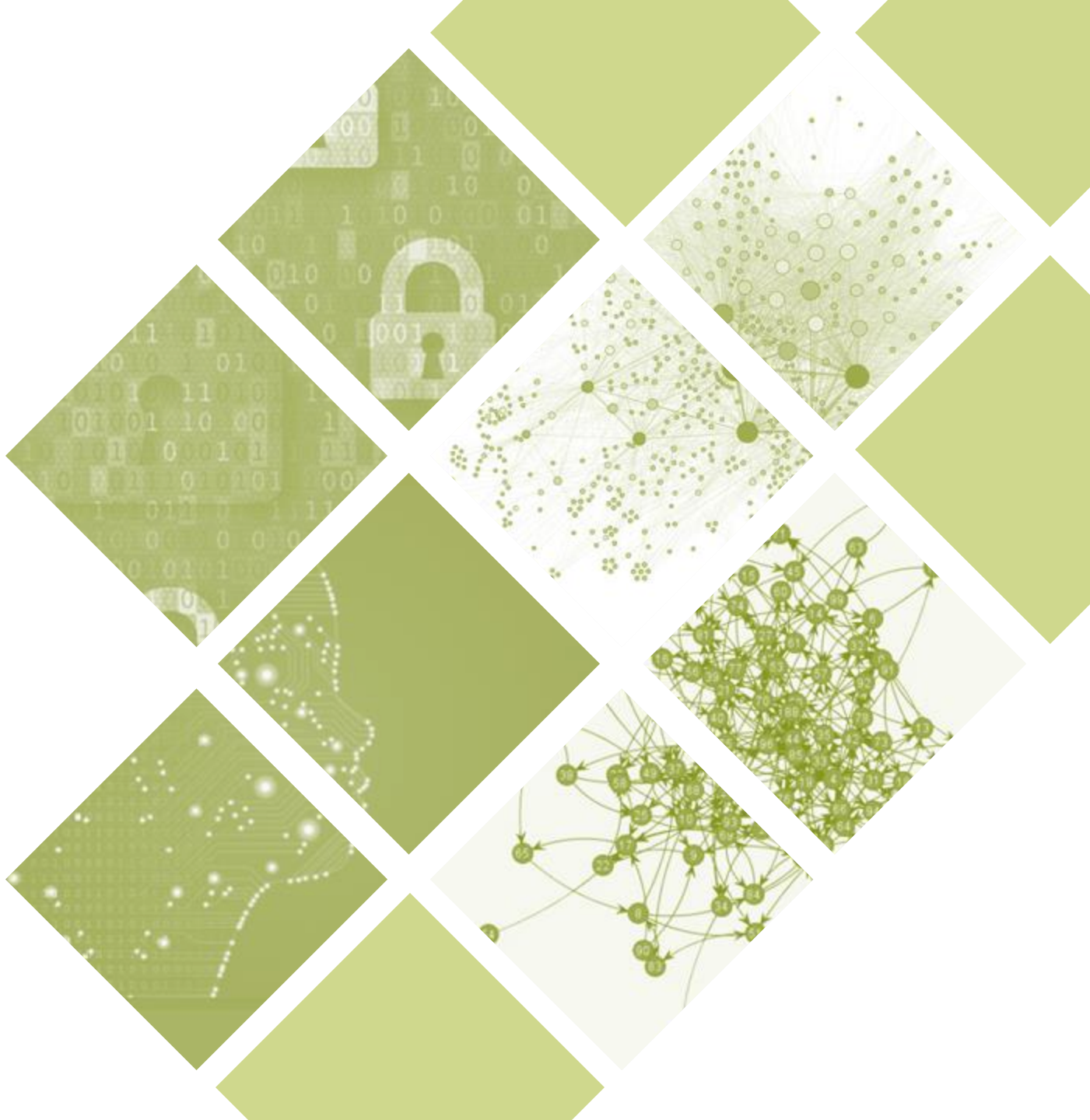
We at toot.ai are developing AI as a service (AIaaS).
Our Virtual Employee Assistant (VEA) will focus on helping Software and DevOps Engineers automatically solve disk space issues that occur during server management.

With our solution, engineers will be able to **focus** on **more important problems**, as they will save time by letting our VEA solve the disk-space issue for them.

This document contains a summary of our whole vision, product and strategy to go to the market, as well as an analysis of our contingency factors and forecasts of possible scenarios.

The Product

- Demo
- Knowledge
- Core Features
- Privacy




DEMO time!


*(363)
Resource(64)
n4sch__Class(64)
Company(165)
Type(3)
Server(44)
Environment(3)
_GraphConfig(1)
_NsPrefDef(1)
Solution(3)
Engineer(12)
EngineerLevel(3)
*(578)
n4sch__SCO(70)
LISTED_IN(209)
HAS_TYPE(166)
PART_OF(9)
USED_BY(44)
IN_ENVIRONMENT(44)
IS_A(24)
HAS_LEVEL(12)
Knowledge
Medicore
Person
Agent
Subject
Individual
Object
Goods
Service
Worker
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Informati...
Abstract...
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IS_A
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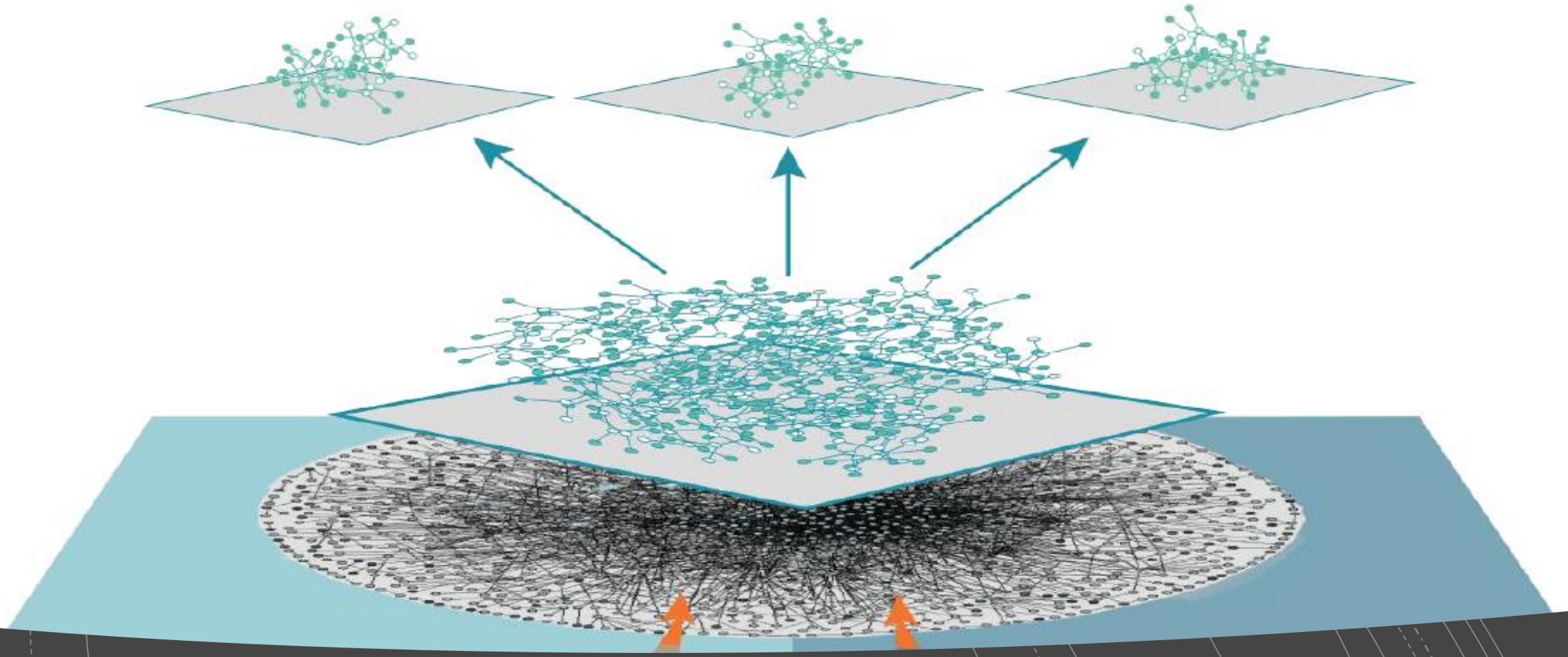


Knowledge in Layers

- ▲ Custom Concepts – optionally, give freedom to combine knowledge and create new concepts that expand the capacity of the knowledge base even further.
- ⊟ Custom Knowledge – introduce a specific and personalized data set that together with the core domain knowledge make up the environment in which toot reasons.
- ▼ Core Domain Knowledge – encompass all notion of the domain of knowledge, crafted by toot.

Core Features

Friendly UI	• toot has hidden most of its complexity into the platform, interacting with it is easy.
Reasoner	• toot is able to assist you in inferring new knowledge from existing knowledge and explain why.
Customizable Knowledge	• toot is able to handle all personalized information with ease.

What about **privacy**?

- Layered knowledge will leave you in control of your own data.
- You can deploy and run the local solution offline.
- You can also implement our cloud-based solution, where all personalized knowledge is closed from the outside world and only accessible by you.

The Team

- Who We Are
- Our Background
- Our Roles within toot.ai

Daniele Di Grandi

General Developer &
Marketing & Finance

BSc in Management Engineering
MSc in Computing Science
Experienced in Marketing, Development, Budgeting and Control
2 years of work experience

Jim Ekanem

Frontend Developer &
Marketing & User Experience

BSc in Media Informatics
MSc in Human-Computer Interaction
Experienced in Design and Frontend Development

Otto Mättas

Backend Developer &
Vision & Investor Relations

BSc in Systems Administration
MSc in Artificial Intelligence
Experienced in DevOps, Knowledge Representation and Reasoning (KRR)
10 years of work experience

The Market

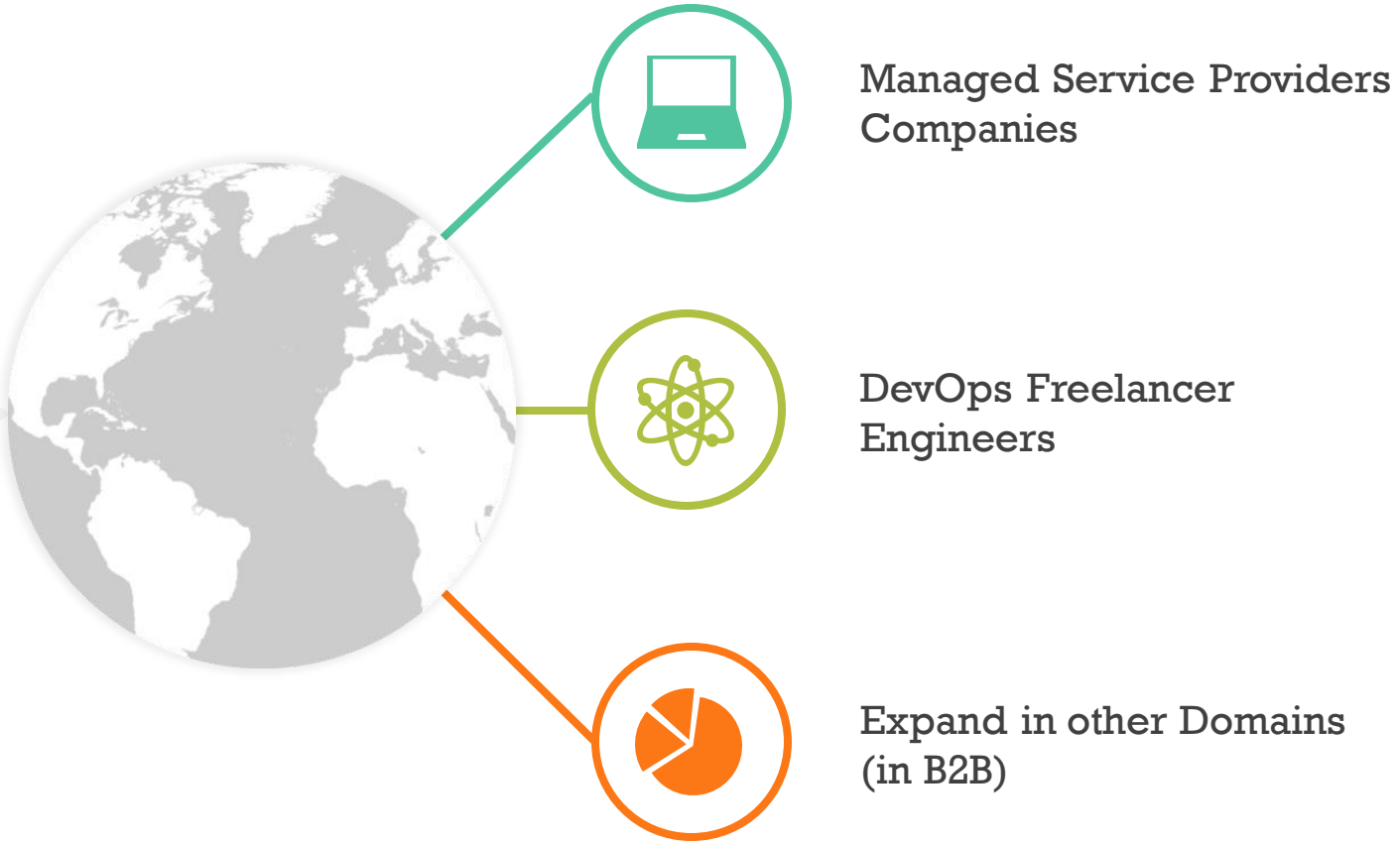
- Target Market
- Brief Competitors Analysis
- Validation by Experts and Companies
- How We Deal with Privacy

Target Market

Who we are targeting

We are targeting tech companies such as **Managed Service Providers** (MSP) to help them with managing the servers that they keep their data on. The users of our Virtual Employee Assistant are DevOps engineers that work in those companies, but also **DevOps freelancer engineers** in charge of maintaining and managing servers of third parties.

Future revenues from the MVP will be used to **expand** the product into **other domains** to target other markets. However, we aim to stay in the B2B market.



Competition

Market Research Results

During our market research, we have compiled a list of companies that developed products like ours. However, there is **no company** that sells the exact same product, that is, developed to provide a solution to the same problem we are aiming to solve.

In this document, we will provide information on the most relevant competitors that can be classified into 3 categories:

- **Potential competitor:** competitors that could develop a similar product, since they have a similar technology used for another product.
- **Replacement competitor:** competitors that sell a product or service that is both different in category and type than ours, but one which possible customers could choose to spend their money instead.
- **Direct competitor:** actual competitors that have a similar product to the one we are developing.

Firstly, products like Google's assistant, Apple's Siri, or Microsoft's Cortana may seem similar but are not considered in our research. This is because they are in the B2C market, and their scope is to solve minor tasks for the average user.

Although their VEAs are based on a type of knowledge graph, **their knowledge graphs do not have an ontology**: rather than focusing on making the graph using inference rules to infer some type of solution, they limit themselves to connect objects to each other, thus describing the environment, rather than a possible action that can be taken to solve a problem. This means that these products are not meant for aggressive industrial usage, hence, **they are completely different** from our product, both in the scope and in the target market. However, since they have the technology in place, in the future they could develop their products for industrial usage. Therefore, we categorize those companies as potential competitors.

Competitors

Direct

Amazon CloudWatch

The product works only if you use AWS servers. Moreover, the solution they propose is mainly a monitoring system, but can also automatically solve some issues.

Replacement

Splunk

They have a software to predict the future need of space on a disk. One can decide if it is better to minimize the number of errors or have the same number as before but handle them automatically.

Direct

Dynatrace

They do not acquire information from the user itself, but only from the system environment which is running on. Moreover, their product does not handle automatically all the errors, but only some of them.

Replacement

Datadog

They only have an automatic monitoring system. Some customers are maybe not interested in an automatic system of error handling, but only in an error detection system.

What emerged from this analysis is that the **core task** of all these systems **is monitoring**, and not automatic error handling. Essentially, they are great solutions to detect and even predict when a disk on a server runs out of space.

But they will not be able to do much more than this!
This leaves us with a great opportunity to step in between the monitoring tools and the engineers and help them fix issues directly and automatically.

Market Validation

Customer expression of interest and experts' assessment for our product

In our research, we have gathered a customer expression of interest, as well as 2 expert assessments and 1 opinion about a future user of our VEA, that is, an actual DevOps architecture engineer.

SENTIA

Customer expression of interest: Sentia

They manage 15.000 servers and experience errors every 10 minutes. They reported that the costs for a manual fix reach up to 50 € per issue.

POLITECNICO MILANO 1863

Expert assessment: Full associate professor

A university professor of Informative Systems at "Politecnico di Milano" with work experience in an APM company expresses an interest in our product.

POLITECNICO MILANO 1863

Expert assessment: Associate professor

A university professor of Computer Science at "Politecnico di Milano", experienced in server maintenance, expresses an interest in our product.

IMPECT

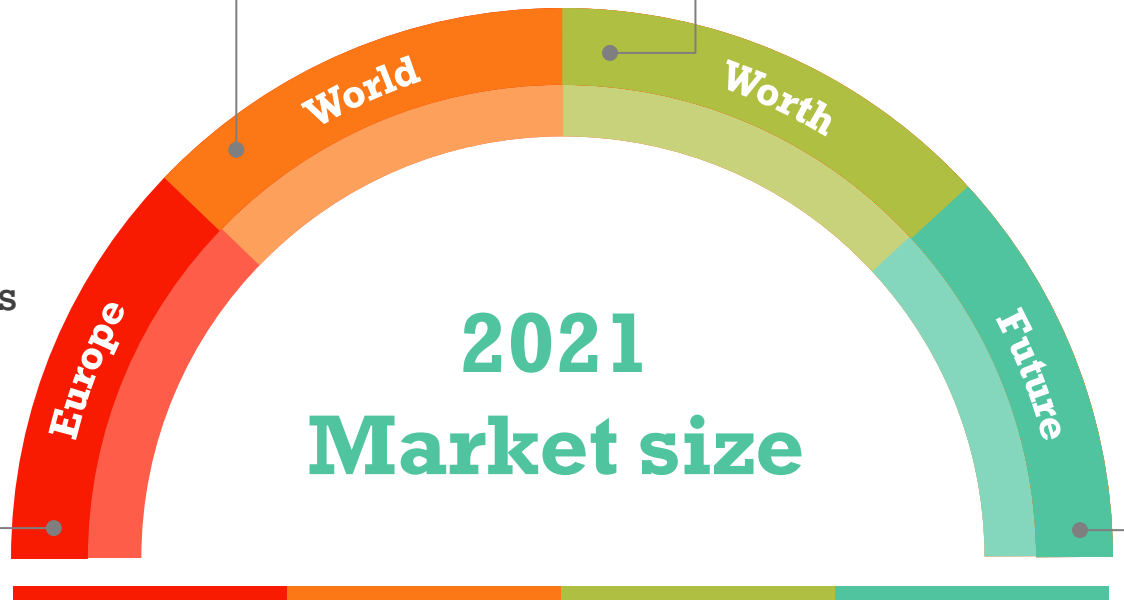
Future user: DevOps architecture engineer at Impect

"This is a time-consuming reaction to something that shouldn't happen. Being reactive means the circumstances are choosing when you have to spend time in such a task. That's a huge problem."

Market size

World market
80.000 MSP and Cloud companies
(source: compubase)

Actual worth
$ 223 billion globally
(source: Statista)



European market
38.000 MSP and Cloud companies
(source: compubase)

Future worth
$ 350 billion globally by 2025
(source: Statista)

We managed to find the size of our target market. Since we want to initially focus only on the **European market**, we will take that number as a reference, but for the sake of completeness, we also have reported the global market size.

Growth predictions by Experts

SALES PREDICTION	Full associate professor	Associate professor	DevOps engineer
Month 1 after launch	8	5	10
Month 2 after launch	20	30	50

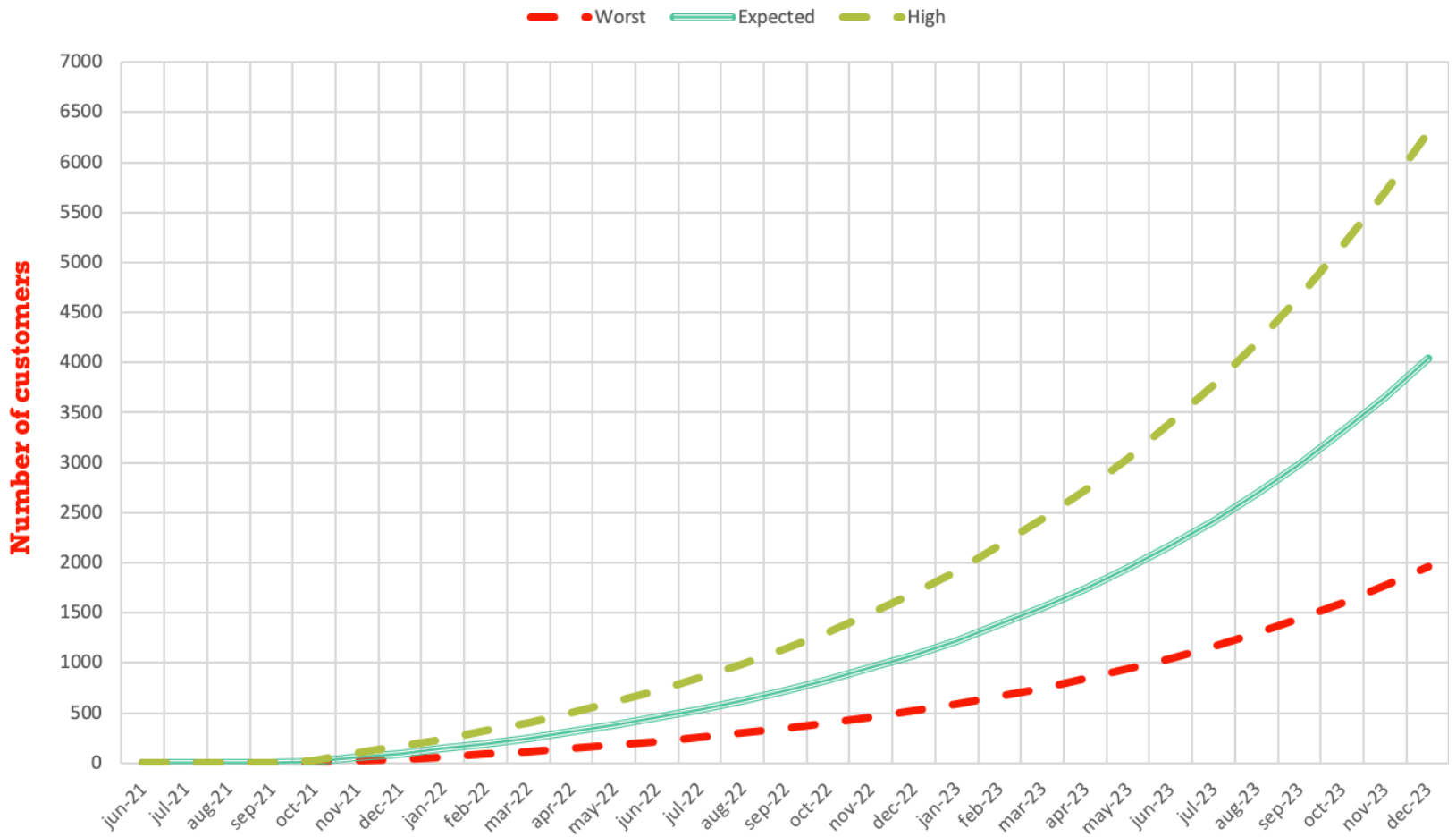
With the data gathered until now - including the sales predictions by experts - we can use the **"Bass-sir model for diffusion of new products"** to compute our future growth in terms of number of customers by considering three different sales scenarios:

- **Worst** (consider the minimum predictions)
- **Expected** (consider the average predictions)
- **High** (consider the maximum predictions)

The prediction for the first 4 months are 0 customers, since as we will see later, those months will be fully dedicated to the Beta testers.

To use the Bass-sir model we had to define some parameters, which those values are given here:

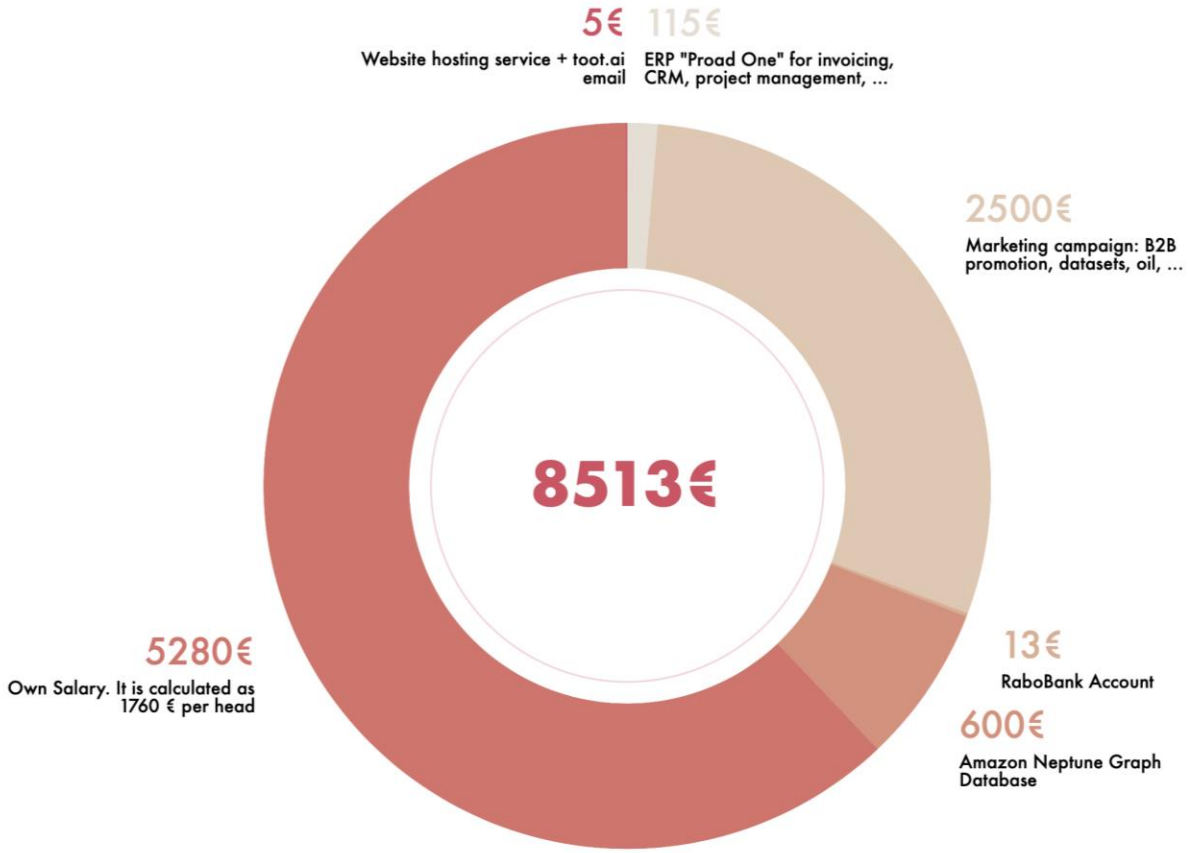
Imitation coefficient: 10%
Spontaneous purchase coefficient: 0.05%
Market size: 38.000 companies (European market)

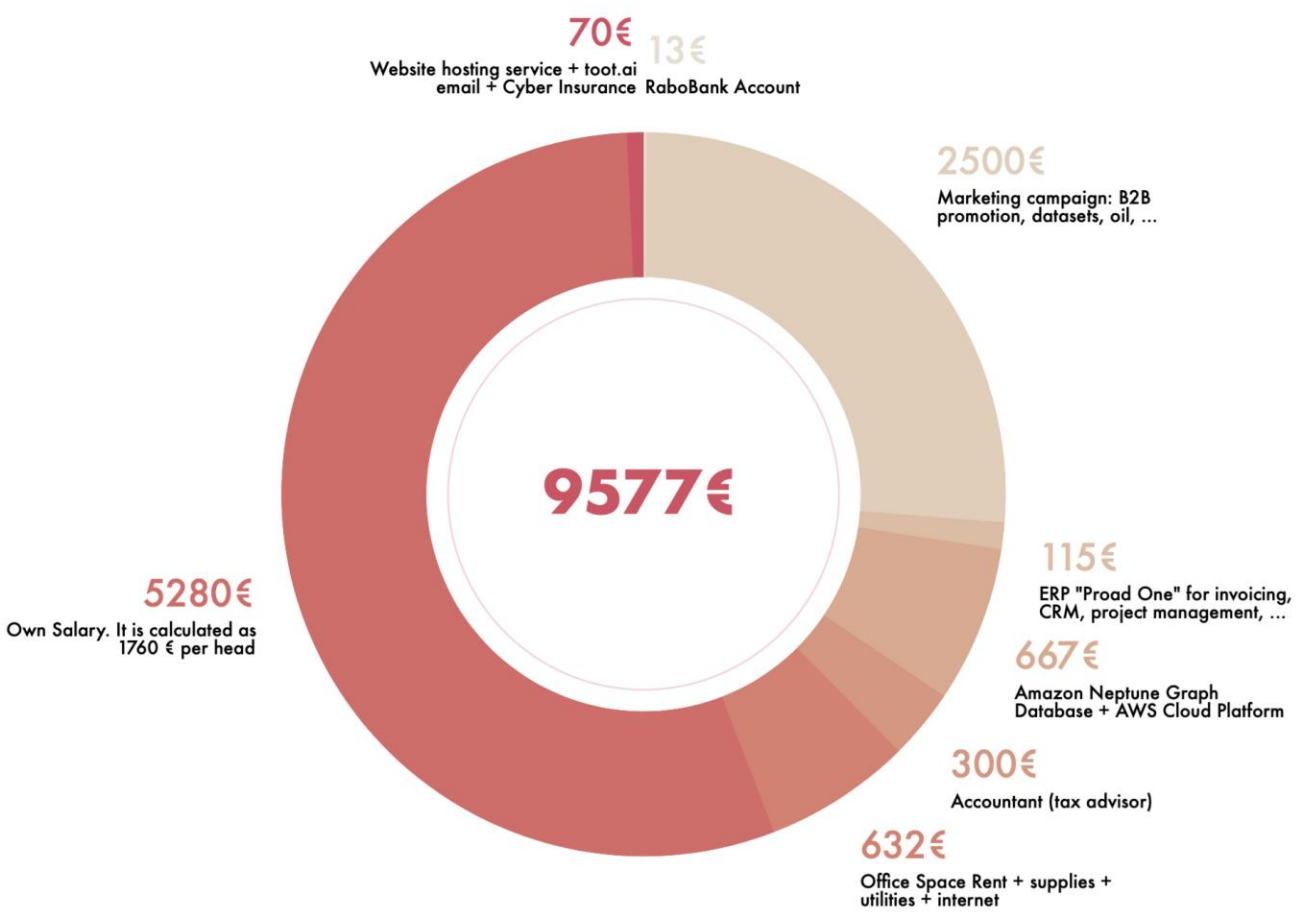


Pricing and Revenues

- Cost Structure
- Pricing Scheme
- Revenues Streams
- Profits
- SWOT Analysis

Monthly Cost Structure





Not fully operational costs

This chart shows our monthly costs for the first year, where we assume that we don't need to have several costs, as we are a Start-Up and we can exploit several benefits.

Fully operational costs

Eventually, after the first year, we would need an office to work in, an insurance, and we should start paying the AWS Cloud Platform services, which were free for the first year. Moreover, we would need a tax advisor for managing prime entry, VAT, prepayments and accrued income etc.

Pricing model

Subscription based

As is usual in the software development for MSP companies, we use a **monthly subscription pricing model**. We calculated our prices using the Break-even method (since it's best for our penetration pricing strategy) and it is important to notice that all our prices are **cheaper** than the competition, since we initially want to build a **solid customer base**. Moreover, most of the competition require those prices per host, while with our product, the customers don't have to buy any host license, hence, they could use our product on a number of different computers without paying surplus costs.

Three plans

Different needs meet different solutions: we have **3 different plans**, each with different features. The more the price, the more the features you get.

Entry Plan

42 €/month

- Inference engine
- Access to the knowledge graph and ontology
- Limited customization

Good Deal

Middle Plan

65 €/month

- All the features in the Entry Plan
- Complete customization of knowledge graph
- Voice-activated UI

Best Deal

Seasoned Plan

136 €/month

- All the features in the Middle Plan
- Personalized customer service
- Priority ticket on solving problems

Good Deal

Beta testers and first six months

Beta testers

To these users we will give the complete version of our product **for free**, such that both us and the tester customers will have a **benefit**: they will obtain a **free product** to use and maybe retain and we will obtain valuable **feedback** to improve the product. Beta testers have 4 months to test the product and report to us all their opinions.

First six months sales

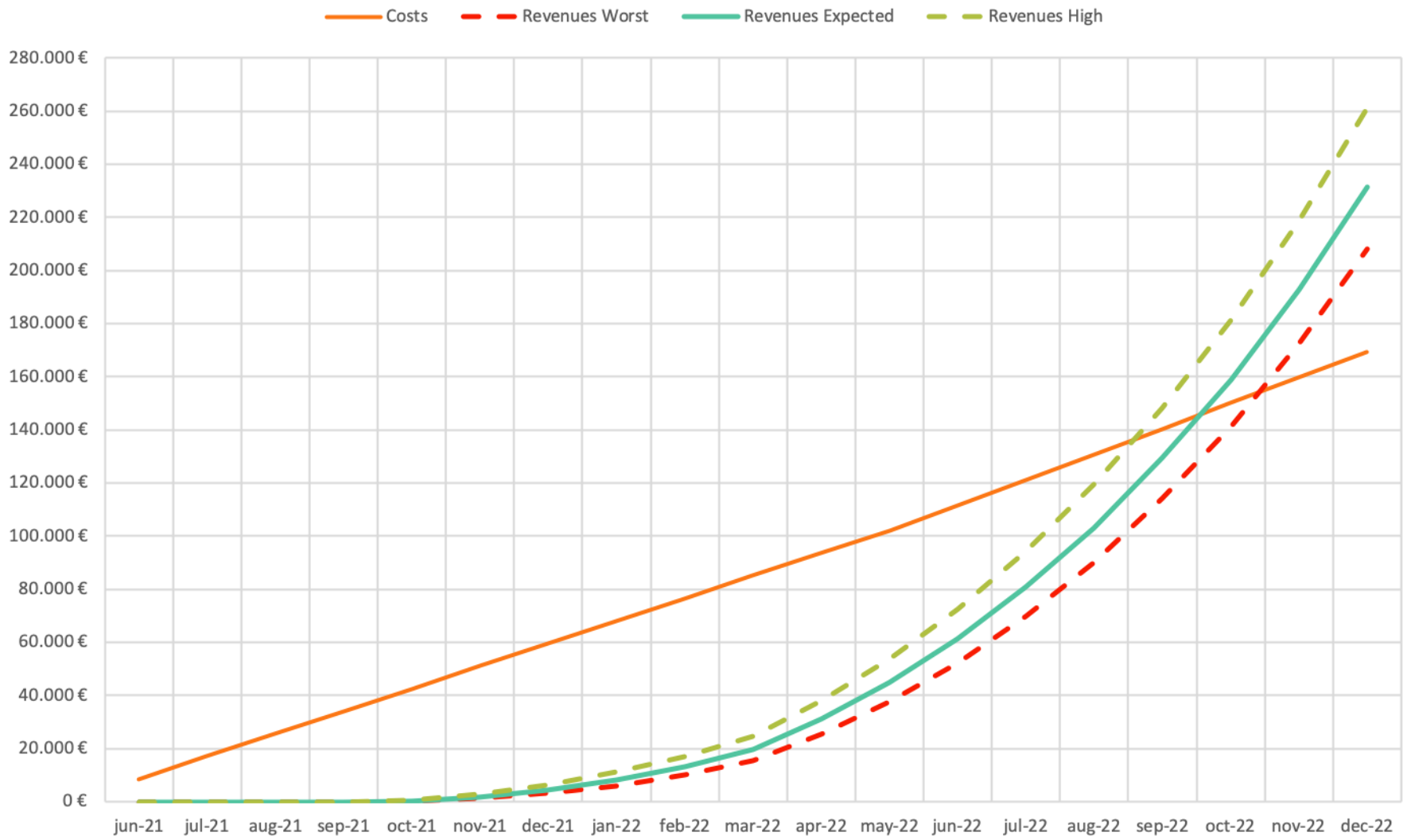
After the Beta tester users, the product will be sold for the first six months with an additional **30% discount on all the plans**. After this period, the normal prices will be applied again.

Costs and Revenues Streams

Different Scenarios

The chart on the side shows our **cumulative** costs and **cumulative** revenues streams in different scenarios. The costs are obviously the same for each scenario, while the revenues streams are considered to be different based on the number of customers that we are able to obtain, using as a base the **growth predictions** made by experts and seen in the Market section of this document. Moreover, we assumed that 15% of customers will buy the Entry plan, 75% will buy the Middle plan and 10% will buy the Seasoned plan.
This graph already consider all the strategies explained until now, which comprehend the initial Beta testing phase, the 30% discount and the increase of our internal costs after a year (hence, from June 2022).

One can see that **our profitability** will start – considering the worst case scenario – from **November 2022**.

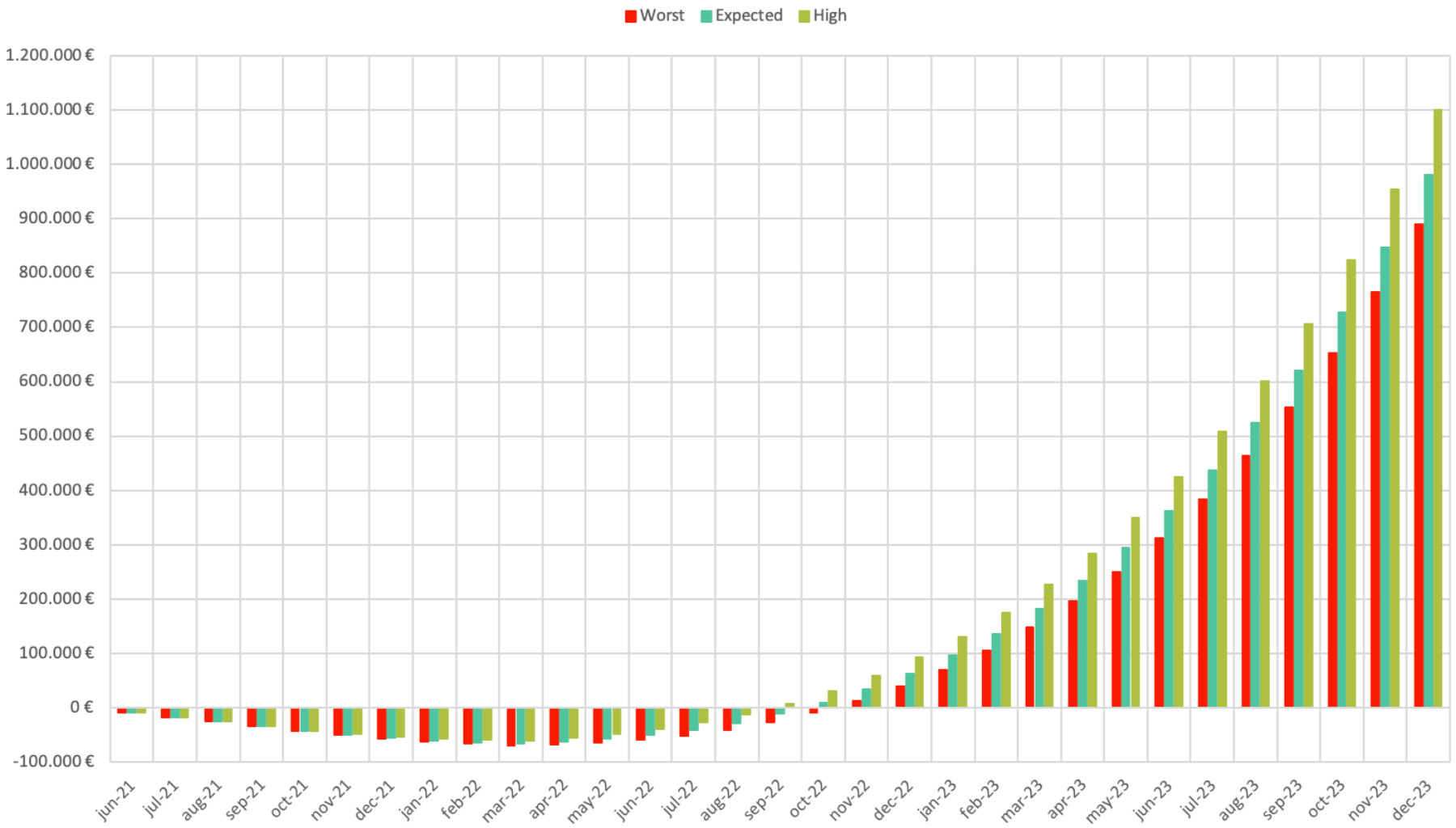


Focus on Profits

High Profits!

A closer look at the profits, shows that after an initial phase of 16-18 months where profits are negative – and it is **expected**, since our prices are below the average on the market - in November 2022 we will really start to become profitable in all scenarios, and the exponential growth in the profitability is very **reassuring**.

Moreover, since the scenarios considered don't differ that much between each others during the negative profits phase - although they consider a substantial difference in the number of acquired customers - we think that **our strategy is solid,** therefore, we will be able to apply it in our context without changes.



Our Vision and Mission

- Our Philosophy
- What Pushes Us to do Better

Wouldn't it be nice if you were able to work on the most challenging and personally inspiring projects on your job? To do personally meaningful work?

This would only be possible if there was someone else taking care of the daily tasks, the gear grinding. Fortunately, we know it is possible. That's where toot comes in.

We are starting from solving the disk space issue but aiming for the stars: we can take advantage of semantic knowledge graphs and ontology learning to expand and scale in and to other domains, with exponential ease.

Eventually, toot will be able to take on the role of a personal assistant, helping you with whatever is on your task list. Furthermore, we can give reasoned recommendations for any type of question.

"We will create value for all of us to benefit from."

toot.ai

Contact Us!
E-mail: otto@toot.ai

> We want to help Software and DevOps Engineers to automatically solve disk-space issues so that they can focus on the most interesting aspects of their jobs.