Marketing Strategy

Daniele Di Grandi - Filippo Maria Libardi - Jim Ekanem - Otto Mättas

1. INTRODUCTION

We at toot.ai are developing AI as a service (AIaaS). We want to offer a product to our customers that will provide users with enough features to bring value by solving repetitive and mundane tasks in the technological work environment. However, the development of our product must be feasible according to our capabilities and resources as a product team. Therefore, we decided to narrow down our scope on developing a Virtual Employee Assistant (VEA) that will focus on a specific domain, that is, helping Software and DevOps Engineers to solve disk-space issues that occur during server management. This problem is experienced by IT experts that work for Data Service Providers (DSP). 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 DSP's customers due to server downtime.

In this report, we investigate the market we want to serve, find competing companies and similar products. This knowledge will enable us to better understand what marketing strategy is suited for our product and how we best enter the market.

2. COMPETITORS

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

- Potential competitor: competitors that in the future 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 virtual personal assistants 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 the owning companies are conducting research on knowledge graphs and personal assistants, we cannot overlook the future possibility of Google, Apple, or Microsoft deciding to develop their products for industrial usage. Therefore, we categorize those companies as potential competitors.

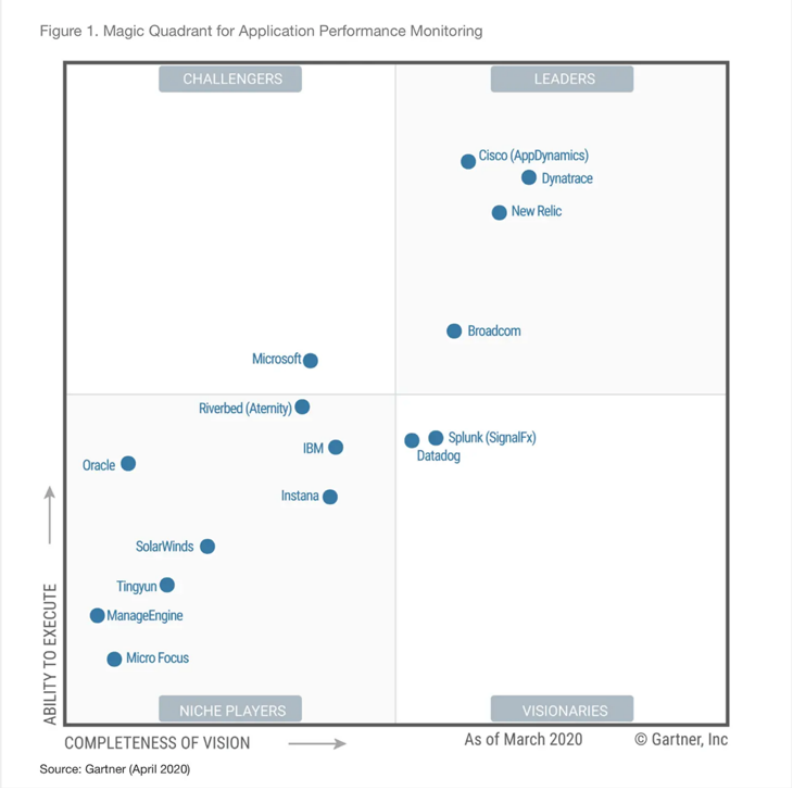

Image nr. 1

Research by Gartner and Forrester [1][2] on Software for Application Performance Monitoring provides us with an overview of the current market of more relevant competitors.

We decided to research two leaders and two visionaries in-depth to estimate their capacity of competing with our product. The following table details our findings of the companies' characteristics and their ability to compete with us.

Feature	Amazon	Splunk	Dynatrace	Datadog	New Relic
Demographic characteristics	# 1.298.000 employees # Headquarter in Seattle # $386 billion global revenue in 2020 # $21,33 billion net income in 2020	# 5.800 employees # Headquarter in California # $2,36 billion global revenue in 2020 # -$336 million net income in 2020 # As of late 2019, had more than 15.000 customers [3]	# 2.200 employees # Headquarter in Waltham # $545 million global revenue in 2020 # - $418 million net income in 2020	# 2.200 employees # Headquarter in New York City # $603.,5 million global revenue in 2020	# Headquarter in California # 599,5 million global revenue in 2020
Product name	# Amazon CloudWatch	# Splunk Machine Learning Toolkit	# Dynatrace	# Datadog	# New Relic products
Operative variables (technology, prices and price model, …)	# Auto Scaling and predictive scaling for availability # Vendor-lock-in: If you want to use their service then you must use Amazon's cloud servers to store your data # "Event Bridge" delivers data from the user applications (SaaS) and AWS services. The user can then setup route rules for the architecture to react a certain way to the live data stream. # AWS Lambda to build applications that respond to new information. It performs administration of compute resources: os maintenance, capacity provisioning, automatic scaling, logging. # PRICING: It really depends by the bought products, but mostly are subscription based.	# Use a forecast of the demand method through deep learning (statistics regressions) to allocate the correct amount of memory to each server [4]. # Problem: optimize by minimizing the number of errors, but it does not handle them automatically. # Built in Python. # About 12.600 active installations. Though, the core business is offering, collects and analyze high volumes of machine generated data. # PRICING: Splunk Machine Learning Toolkit is free to download, but overall, Splunk has adopted for its products very different pricing schemes based on the size and scale of the customers	# Use real-time (topology) dependency map which shows the relationships and dependencies for all entities. # Mostly, it monitors the situation, but for certain problems can automatically act by auto-detecting the root cause and auto-remediate. # The dependency map is updated in real time using Smartscape, by continuously and automatically auto discovering the environment. # PRICING: Monthly subscription with 6 different plans, starting from $10 to the minimum features plan to 69$ for the full-stack monitoring. All these prices are per host.	# Datadog uses a Go based agent. # Its backend is built using several open and closed source technologies including D3, Apache Cassandra, Kafka, PostgreSQL. # It provides only a monitoring system for servers (metrics, logs, network performance,), it does automatic error detection but not automatic error handling and solving. # PRICING: Monthly subscription model with 3 plans: 0 $/month per host: basic plan 15 $/month per host: medium plan with more features 23 $/month per host: complete package	# The product is mainly for monitoring servers: it can analyze data and automatic discover errors by also doing root cause analysis. # The "Applied Intelligence" product can discover and prevent potential problems. # PRICING: 3 different models: # "Telemetry Data Platform": $0.25 per GB ingested (to analyze) beyond free limit. # "Full-Stack Observability": monthly subscription with 3 plans, starting from the cheaper one at 149 $/month # "Applied Intelligence": $0.50 per incident event beyond with first 1,000 incident events per month free.
Product USPs	# Exploit the technology based on the AWS services	# Statistically minimization of number of errors	# Auto detection and discovery of the environment, auto-remediate in some cases	# Different plans and modularity solutions in order to fit a proper customer scale and dimensions	# Prevent different problems and errors by doing constant analysis

Markets they serve (with the considered product)	# B2B: companies that are cloud based and use amazon server space.	# B2B (companies that have servers to monitor), worldwide	# B2B and public administration: businesses and government agencies that demand for IT management services, throughout the world.	# B2B: all companies in need of a monitoring system for their servers (public sector, gaming, finance, DevOps, …)	# B2B: mainly DevOps companies, but also e-commerce and retail seller companies.
Type of competitor (direct vs potential vs replacement)	# Direct: Very similar to our scope, but as a drawback their solution only works for companies with data based on amazon servers, and they are mainly a monitoring system.	# Replacement: It is not doing what we are trying to do but offers some nice alternative. 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: Very similar to our scope, though it does not acquire information from the user itself, but only from the system environment which is running on. Moreover, it does not handle automatically all the errors.	# Replacement: Some customers are maybe not interested in an automatic system of error handling, but only in an error detection system.	# Replacement: Some customers are maybe not interested in an automatic system of error handling, but only in prevention and detection of errors.

The most important thing that emerged from this analysis is that the core task of all these systems is monitoring, and not automatic error handling. Essentially, there are plenty of 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, they are just not designed with the focus in mind. This leaves us with a great opportunity to step in between the monitoring tools and the engineer and help them fix issues directly. At the current step, we will help the engineer solve a disk space issue automatically.

3. TARGET MARKET

As already mentioned in the product plan, we aim to operate in the B2B market.

Specifically, 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. Research supports our plan as VEAs are forecasted to being used by 25 percent of digital workers in 2021 [5].

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.

4. UNIQUE SELLING POINT

There is no product on the market that focuses on solving technical issues by using semantic “knowledge”, gathered, and updated with the user preferences. There are plenty of tools that have semantic knowledge for interaction (PAs), but they are dedicated to chatting mostly. Thus, they do not have very deep knowledge or even very technical knowledge available. When their AI is chit-chatting, our AI is growing in expertise. Even though we have a big challenge in growing our knowledge (through ontology learning) ahead of us, we are taking it slow and one step (domain) at a time. Eventually, we will have enough knowledge to start operating in the real world, in different domains. This is what is missing from current PAs like Siri (etc.) - they focus on understanding different accents and being able to call the right phone number, resulting in a not very useful tool. We think that most assistants on the market are just new sort of GUIs or marketing strategies for their backend services and products. Siri – iPhone/Mac; Alexa – Amazon, etc. The feeling is that every big company must have one because the other ones have it. However, none of these are used for solving actual industrial problems.

5. BRAND IDENTITY

We take bleeding-edge technology and go directly to the unsuspecting individual. We do not aim at world domination but the improvement of it through each one of us.

Right now, just too much of our personal effort is lost in doing mundane and recurring tasks. We are looking at ways to minimize and eventually remove them completely. At this very moment, millions of people are grinding their days away instead of exploring the next great thing. Wealth comes through work, they say. Grinding can be rewarding, indeed but we were not built for it. We evolved to invent, to find new ways, to go one step further than the generation before. Think of making art, prototyping, or even socializing, yes: we are start creating value for all of us to benefit from.

Wouldn't it be nice if you were able to work on the most challenging and personally inspiring projects on your job? 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 through technology. For decades, humanity has made great efforts in developing something artificially and generally intelligent. We are finally starting to see the fruits of that. We still do not know when and how general Artificial Intelligence will come to be. But we do know that many necessary building blocks for such a system are out there already.

We are going to combine many of the greatest achievements in the field of AI research and build them into a tool. A tool that focuses on considering your privacy. A tool that gives back value to your time. A tool that is first able to help you fix a disk space issue.... and finally drive your car for you. So that you can focus on the things that you are made for.

6. MARKETING STRATEGY (4Ps)

Product

As for the MVP requirements, we would include the following:

- We have an ontology that we can use to store our knowledge in and infer solutions from
- We have an inference engine we can use to query our ontology for solutions
- We have the ability to recognize the (disk space error) utterance (string) streamed in from a monitoring solution directly

As for the next step after the MVP, the following requirements will be added to the product:

- We have a voice-activated UI
- We have a scalable knowledge graph

Moreover, through a simple and familiar user interface, the design aims to have a high usability: The users will have few difficulties learning to interact with the AI agent because he is familiar with our interaction patterns from similar applications that he already uses [6]. Our brand philosophy (lean and clean usage, proactive employees with creative solution-oriented minds, eliminate waste: time in this case, etc.) will then be incorporated into the product through a simple method of interaction with the assistant. Moreover, the knowledge base will be updated with the multiple user interactions: the more the user will use the product, the more tailored will become the knowledge base, meaning that the wasted time will be less and less.

The strategy we will apply for our different company phases:

Introduction → few features, domain-specific and focus on the quality of the knowledge graph

Growth → differentiation (more features, domains, etc...)

Maturity → conquer our competitors' customers through customization and more differentiation

Decline → elimination of useless features and customization

| Price

In an initial phase, our objective will be the maximization of the number of customers, thus, a medium-low starting price (below the market) will be set. In this starting phase, profits are not the main objective, since constructing a good customer base is way more important. Since from economics, the demand would increase when the price decrease, this strategy will open us to some opportunities of working with more companies, let them use our product, thus, the chance of retaining them. Once a loyal customer base will be constructed, the prices will then be increased, according to the usage that each company will do of the product (dynamic pricing strategy).

Using the following price-quality matrix which defines some strategies:

		Price		
		Low	**Medium**	**High**
Quality	**High**	*Liquidation*	*Penetration*	*Premium*
	Medium	*Convenient*	*Average Value*	*Margin Development*
	Low	*Cheap*	*Apparent Convenience*	*Speculation*

Image nr. 2

We will then use a penetration pricing strategy, hence, a medium-low price and a high quality of the product.

In order to define some actual numbers to make this pricing strategy concrete, a lower bound has to be defined: the cost of making the product, that is, the full cost:

Fully oper. cost? (1=yes, 0=no)	Description	€/month	Additional info
1	Daniele's salary (net)	1320	Rent, food, savings, health insurance etc...
1	Filippo's salary (net)	1320	Rent, food, savings, health insurance etc...
1	Jim's salary (net)	1320	Rent, food, savings, health insurance etc...
1	Otto's salary (net)	1320	Rent, food, savings, health insurance etc...
0	Office space rent	490	16m2 of office
0	Office furniture and supplies	30	Price for only supplies (paper, pencils, ..)
0	Office utilities	64	160 (average on houses) * 40% (no evening consumption, gas, etc.)
0	Office internet connection	47,5	Average KPN monthly cost for 100 Mbps (real -> DWL: 94 Mbps, UP: 28 Mbps)
1	Marketing campaign and analysis	2500	B2B promotion, oil, datasets, public transportation, business lunches, ...
1	Website hosting service + PEC email + toot.ai mail	5	Using Aruba with WordPress
0	Accountant (tax advisor)	300	Prime entry, prepayments and accrued income, VAT, balance sheet, ...
0	Cloud platform	67	Amazon Web Services (AWS) (free the first year)
0	Insurance (wrong choices of the system)	65	Cyber insurance
1	ERP software (invoicing, CRM, time & project manag. etc)	115	PROAD ONE: package for 4 users + assistance
1	Graph database	600	Amazon Neptune
1	Bank account	12,7	RaboBank: business account + pass + C/D cards + internet banking
Total		**8512,7**	**€/month**

Image nr. 3

Now that we have defined our cost structure, we can prepare an actual penetration strategy: initially, we will give our product for free to the BETA users, 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 some valuable feedback to improve the product. After this initial period, we will eventually set an actual price for the product. According to our strategy, we have decided to calculate this initial price through the break-even method, by computing the following curve, based on our starting costs, thus not considering the above costs classified with a 0:

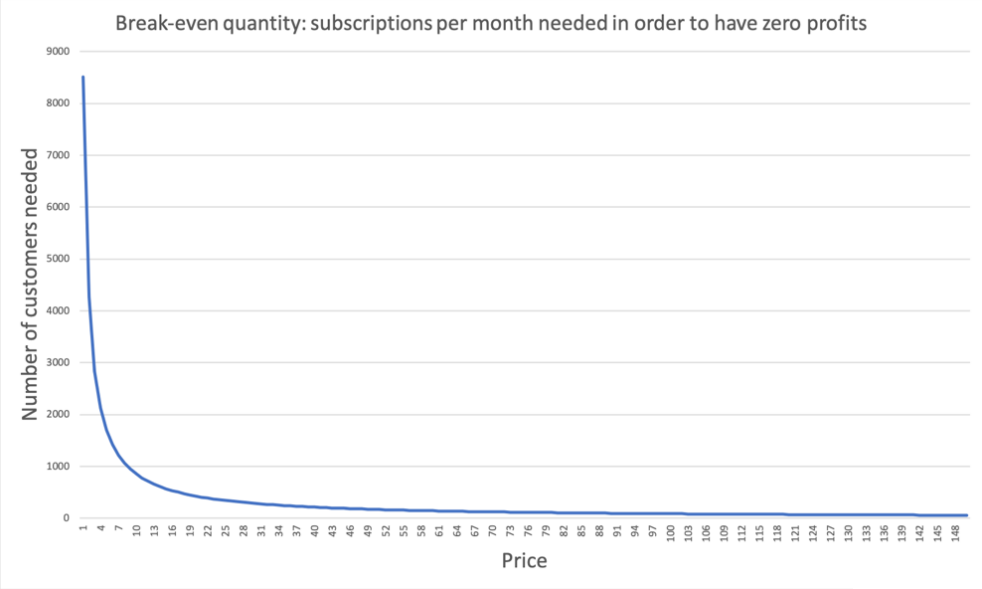

Image nr. 4

According to the theory, the best price to choose is the price where the tangent line to the curve is almost flat since growth in a price does not imply a substantial difference in the number of needed customers to reach the zero profits goal. Hence, around 65 €/month would be the best price to have for our subscription model.

Moreover, we want also to exploit a version of a well-known psychological effect in marketing, known as “The Decoy Effect”: we will make a monthly subscription-based model with 3 possible plans to choose from, each one with an incremented number of features inside: entry plan, middle plan, and seasoned plan. The scope of this strategy is to work on the perception of our price to the customers: by setting a very high price in the highest value plan (seasoned plan), the middle and entry plans will be automatically perceived as very cheap and in fact, the middle plan will be set at the break-even price just calculated. The result of this strategy will be a cheaper perception of an already cheap cost, in perfect line with our penetration price market strategy. Finally, the entry plan will have very few features, and it will be set at 65% of the middle plan price, hence, 42 €/month, while the seasoned plan will be set at 210% of the middle plan (although it does not differ that much in features compared to the middle plan!), hence, 136 €/month. Our final scope and focus are the sale of middle plans.

Since we are making the seasoned plan only to exploit the Decoy Effect, we want to sell a complete version of the product, with almost all the features as our middle plan. Hence, the seasoned plan will mostly contain only those aspects that are around the product itself, like a better and personalized customer service experience, a priority ticket on solving an issue, and similar features.

This whole strategy makes sense to be applied only when we will introduce a price for the product, that is, after the BETA test period. To receive valuable feedbacks, the BETA testers will be provided the product contained in the seasoned plan.

As an additional strategy, after the BETA tester users, the product will be sold for a certain period with an additional 30% discount on all the plans, to acquire more customers.

The following table explains our prices according to the period and the type of customer:

Type of customer	Entry plan	Middle plan	Seasoned plan
BETA testers	*Not available*	*Not available*	*FREE*
First real customers	*29 €/month*	*45 €/month*	*95 €/month*
Normal customer prices	*42 €/month*	*65 €/month*	*136 €/month*

Image nr. 5

As an additional and interesting thing, by using the break-even model, our normal price is mathematically proven to be very similar to the one proposed by Dynatrace (our most similar competitor) for their full-stack monitoring plan: the difference is that they request that money per host, while with our solution, the customers don't have to buy any host license, hence, they could use our product as it is on a number of different computers without surplus costs.

This means that by looking at the market, we are already able to see some prices in line with ours, although we are not yet exploiting all the scale and learning economies that a big company such as Dynatrace has. Moreover, we will provide a better solution in the task of automatic handling of errors, our core business.

Strategy we will apply for our different company phases:

Introduction → Market penetration price (initially medium-low), try to cover at least the fixed costs without thinking too much about making profits.

Growth → Increase the price, try to sell at different prices to different markets (dynamic pricing model) using the gathered data, and in the latest phase do a bit of promotions.

Maturity → Discounts and promotions politics.

Decline → Reduce the price (e.g., always by discounts)

| Place

Place, for a digital product, basically means which kind of solution we will adopt to distribute our software. Our solution is then to make a website using WordPress where we describe our philosophy and product. Moreover, the product will be available through a web-based service, that is also on the website.

In this way, we are using a direct distribution channel, that starts from our website and ends with the final customers, using no intermediaries.

Strategy we will apply for our different company phases:

Introduction → Selective distribution of the software: only the website.

Growth → Open new channels of distribution and communication (customer service, …)

Maturity → Use all the opened channels.

Decline → Return to selective distribution, close some of the channels

| Promotion

The promotion lever aims to define how we could maintain a relationship with the customers and the stakeholders, by also building customer loyalty (customer retention) to our brand and construct a solid image of the company, keeping as a central point the consistency. To do that, since we are operating in the B2B world, no aggressive social marketing campaign in the initial stage of the company will be done, because we would prefer direct communication: email, phone calls, and physically go to companies to promote our product in a face2face approach. In the first stage, the only social media used will be LinkedIn, where we can contact directly through messages the companies that are part of the market we are targeting. Also, a good strategy would be to find on LinkedIn some ex-students that went to our same universities that are now employed in one of the companies we are targeting and leverage on the "fellow spirit" to obtain some meetings.

We have many of these types of contacts, since we all went to different universities (Politecnico di Milano, Estonian Information Technology College, London Metropolitan University, TH Köln, Utrecht Universiteit) hence, we maximize the probability of success of this method. Moreover, in the introduction phase, for each contact we get, we want to personalize the experience by giving different pitches (in style, not in content) to different customers, always following a general guideline for the contents, but adapting the pitch style to the audience we want to give that pitch. A more aggressive social media campaign (or, more in general, internet-banner campaign on appropriate websites, which depends by the product domains we have solved up to that moment) will follows in the growth phase of the company, as well as sponsorship of events and crowdfunding campaigns events with investors and possible investors.

Of course, we will always keep in mind that in promotion, lots of money invested does not mean best result: in promotion, it really depends by the creativity and the messages we are passing.

Strategy we will apply for our different company phases:

Introduction → targeted communication (direct marketing) and share knowledge about the new product and the brand philosophy

Growth → general communication, focus on product features, public relations, social media

Maturity → push on discounts and remark the brand philosophy

Decline → targeted communication, find a new usage of the product (recycle), investment reduction, push on discounts

7. SWOT ANALYSIS

To better understand the market and our potential, it is interesting to carry out a SWOT analysis, a tool we use to support decisions.

Strenghts	Weaknesses
- Lean company, customer oriented - Product that is basically unique in the market - Good team, we have both strong technical and business competence - Team member with work experience in DevOps companies as engineer - Medium-low initial price with also initial discount	- Not enough funds yet to invest in the awareness of our product - As a startup, we can be seen by customers as inexperienced or unreliable, thus, they could prefer other type of solutions - Challenge in the technical realization of the product, since we use state of the art techniques (NLP, ontology and knowledge graphs)
Opportunities	**Threats**
- Demand in the market of our product - No one is currently selling an automated solution for the disk space issue - Potential first customer (Sentia) interested in our solution - DevOps market size is growing year after year	- Very big companies such as Google, Apple, etc. that uses a technology (knowledge graph) similar to ours - Dynatrace is currently solving automatically a tiny portion of disk space errors: they could improve their system before we enter in the market

The analysis consists of identifying the company's strengths, that we focus on to seize opportunities, to understand the company's weaknesses, and to protect ourselves from threats: there are therefore two degrees of analysis, one within the company and the other outside.

In this analysis, we were able to identify some weaknesses to which we would pay attention in the future to avoid potential threats. Moreover, we were also able to identify the opportunities of this market, and we think that our strength points would allow us to seize them.

8. VALIDATION

The strategy we defined in this report will be validated in the Validation Report, where we have gathered a customer expression of interest, as well as 2 expert assessments and an opinion about a future user of our AI platform, that is, an actual DevOps architecture engineer.

We analyzed the respondent's data to find some proof of the correctness of our strategy and present the result we obtained.

9. REFERENCES

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