**Part 1 - Your Startup**

1. What is Startup's primary product/service?

2:36 I'm from Startup 14. We are two lines. We sell a signature to people who want to follow up on legal proceedings, official diaries, as well as messages from the court. The other line related to this is that we sell our data as an API to third parties.

With our public product, which anyone can use by entering excavator.com, we want to be the best legal assistant in Brazil. Whoever has a legal process, or is at risk of having a judicial process, needs to have the Digger. With Startup 14, we can monitor hundreds of sources to inform the person or company as soon as someone files a lawsuit against them. The user can organize the processes he has, and as soon as a movement happens, he is notified many times in minutes of the activity.

Our other arm is the integration of our technology with partners. Imagine that you noticed a problem with your legal office management and created software to solve this pain. You may need a technology that we already have, whether it is accessing procedural information in one of the more than 100 electronic courts in Brazil, monitoring a client to know how a case has been distributed, or you need to convert a document, classify the type of a document, or extract the parts of a process.

2. When did your Startup establish itself?

03:16 We came together in this current configuration in 2018. Since then, we have reinvented ourselves a few times. We are all computer scientists.

3. Where is your Startup located?

03:51

We are located in Salvador, Bahia. At Tancredo Neves, specifically.

4. What is your role?

04:10 My role is Director of Technician. But I have several hats. There is no well-defined segmentation of the board.

5. What kind of ecosystem are you currently working on?

4:39 We are characterized as Legaltech.

6. How many employees do you currently have?

4:59 We are 15 people.

7. What is the composition of your team?

05:01 What is the composition of the team? The composition... what each one does... It has 1 lawyer, 1 administrator, 1 person for customer service, 3 who work in front-end, 2 people in infrastructure, and the rest is in the backend team.

8. Do you proactively participate in product life cycles, such as production, testing, and launch? If so, to what extent?

6:27 Yes. The team is small, and all partners are still working at all stages. I develop, I test, I deploy, I launch. In reality, it is that each developer is responsible for launching his product. So, a person who is an intern is responsible from beginning to end for the launch of his products. They only in the testing phase ask another developer to test it so that it is not the same person who developed it.

**Part 2 - Software Engineering Practices**

1. What software development practices, tools are you using? Briefly describe how?

08:12 I even have a software engineering background. I studied, but we ended up moving away from the process, something very closed, you know. We end up developing without plastering. We don't follow a process. A development practice? We have our way of working: every three months, we define OKRs (Objectives, Keys, and Results). Each team is responsible for determining their OKRs, so these are more significant tasks that need results. We define the OKRs, and we do a weekly Sprint process. A very light Sprint process... without following those formal guidelines.

We have a chat room called slack, and inside the Slack, we have a bot. When the person starts the day, in Slack, he does what would correspond to the stand-up. He activates the bot that asks what he is going to do and what he did at the end of the day. It is done in Gitlab, which is our repository. So, we can also do it with that person's commit. There is no stand-up meeting either in person or in a chat room. It's all through the bot.

At the beginning of the week, we have a meeting that we are obliged to have for five minutes, where she will talk about what she will do during the week. And on Fridays, we have another five-minute meeting to talk about what she did that week. We have a horror of bureaucracy and time-consuming meetings. Here at the company we also have the characteristic of having flexible hours. But really, really flexible. One is not that flexible, but there is a stand-up meeting at 8 am. No. Each person starts the day at the time they want and ends at the time they want. The tools we use are Gitlab, Slack, Jetbrains tools: PyCharm, PHPStorm, JetBrains IDEs... We work hard with our team on Artificial Intelligence. And that's it.

2. What are the most important quality attributes (UX, performance, security, reusability) for your current products?

12:16 The ideal would be all. But... each team kind of ends up working more specifically on one. For example, front-end people end up focusing on UX. But we focus on three that are a bit of a cross-section: performance, because we were not invested, so we have no investor. Everything we spend is the result of our gain. So from the beginning, we had to keep everything as dry and economical as possible. And for that to happen, we needed performance, because we can't compensate with more expensive infrastructure. And the second is security. Because we have a small team and our product is controversial. Some people don't like having their name on the Digger. So we suffer eternal attacks. So there are a lot of people who want to attack us, who want to invade us. So this is where we get solid. So performance and safety are mandatory here due to the company's characteristics.

3. What testing practices do you adopt to validate and verify your product/service quality?

14:21 Yes, we use a process called Gitflow. Our banquet systems are using Gitflow. We have releases, hotfixes, and such... no one has authority; no one can commit directly to the branch master, to the branch main. Nobody can make this commit in the main branch. All commits are via merge request with requests for you to do that merge. And mandatorily, every merge needs to be reviewed by someone. Our practices for the features to come in are to create Gitflow; you have there in Gitlab, you have to do an MR. And then, you have a CI and Continuous Integration and Deploy system. CI AND CD, everyone has that. And as soon as the MRA is approved, the system automatically deploys it. So it happens that in one day, we have 80 deploys. It's normal. And one of the things that we take very strongly is that the deployment only happens; the MRE is only approved if the whole test suit is green. So every project has a complete test suite.

4. How much did you invest in testing activities?

16:50 Our principal, the Web itself, has more than 1000 tests. So a requirement for this deployment to existing continuously is that you need to pass the tests. No one is free of that. We work with unit tests, integration tests. We work with microservices, so the test goes up in a virtual environment that simulates whether the requests are working. A single test that even exists, but is not substantial, is the interface test. It is something that is on our roadmap. But we do not do, for example, if the interface is rendering correctly. But the unitary part, the route part, the controller part, the integration part, the microservice communication part, I am proud because it is complete.

5. How do you document your product at different stages of development and testing?

17:38 Documentation is a good thing... it's a paradox. We have an API branch, which wants to integrate with the things we do, so our Documentation is very good for the services exposed to third parties in the API. It is automatic Documentation; the code generates the routes. But for internal services that are not disclosed, we delegate to unit tests and integration tests.

**Part 3 - Technical and Dynamic Debt**

1. How aware are you of TD in your Startup?

18:23Are you aware of your Startup's technical debt? Indeed, the idea of ​​a Startup is that we are constantly dealing with uncertainty, and we need to launch things as soon as possible. And obviously, it is better to work, standing, than the perfect one. So, we are aware that we are introducing the technical debt that we will have to pay one hour. So, we rewrite it, but this is something we have a lot.

2. What is your perception of TD?

20:31 My perception of technical debt is that I have a concept that I bring here for everyone: I like many boring technologies, boring technologies, mature technologies, established technologies. So, I think that this choice at least has already brought us a lot of fruit. While several of our fellow startups took risks in different databases, I don't know, Dynamo, CouchDB, we choose the most conservative and mature thing possible. At least in this criterion, we manage to reduce it a little. But obviously, we have technical debt in other aspects, in the software development itself.

3. How do you deal with DT? Do you ignore TD? Do you accept and manage TD? Do you avoid TD?

21:25 We have a ticket repository. So we document that there is something that has a debt, which is not great; add comments: we chose algorithm X, we could have selected Y. We put it on Assana and put it on our roadmap. We went up one thing and went up in a hurry, and it will need to be rewritten. So, the main technical debts, which we noticed at the time that we are doing, are all documented. But obviously, some people ignore it; they are there. There are other priorities. It also happens that a system dies, is rewritten. It's a scale, right? And in our experience, we have to balance between launching soon or doing it in a better way. And we already had systems that had to be redone because the debt is very high. So, there were poorly specified systems, and the response times were not satisfactory due to wrong choices. And then, when it went into production, the system popped up. He had to go back to be rewritten, at least the main parts.

4. How did you deal with TD in the early stages compared to now that you are in the growth phase?

23:38 What has changed from the beginning to today is our experience, our maturity to understand that if we do something wrong, it will be a problem and specific measures that we will have to take in this balance to launch soon and do it well, a particular thing that gent thought he could ignore in the past, nowadays we can't ignore anymore, for example, security.

24:17

The change happens many times, every month. A lot of things that we do are not ready. We have gigantic competitors, so our strategy is to innovate. And specific innovations don't work. Discontinue one product and focus on another.

5. Did you change the focus of the Startup during the transition from the initial to the growth phases? Did any of the situations occur?

1. **Zoom-in.**Has asingle feature of a product become the whole product itself? [[1]](#_heading=h.gjdgxs) - If yes, explain the role of TD?[[2]](#_heading=h.30j0zll)
2. **Zoom-out.**Has the whole product become a single feature of a much larger product, mainly because the original product is insufficient to address customer needs? - If yes, explain the role of TD?
3. **Customer segment.**While trying to solve the right problem, your Startup has discovered a different segment of customers than originally anticipated? - If yes, explain the role of TD?
4. **Customer need.**Your Startup has realized the problem you try to solve is not very important for the customers, and has discovered other related problems that are more important? - If yes, explain the role of TD?
5. **Platform pivot** . Your application has turned into its supporting platform or vice versa? - If yes, explain the role of TD?
6. **Business Architecture.**Your Startup has switched the business architecture, e.g., aiming for low volume, high margin, instead of focusing on the mass market? - If yes, explain the role of TD?
7. **Value Capture.**Your Startup has changed the way/method to capture value (monetize)? - If yes, explain the role of TD?
8. **Engine of Growth.**Your Startup has made significant changes in its growth strategy to seek rapid and more profitable growth? - If yes, explain the role of TD?
9. **Channel Pivot.**Your Startup has identified a more effective way to reach its customers than its previous one? - If yes, explain the role of TD?
10. **Technology Pivot.**Your Startup has delivered the same solution by using completely different technology - If yes, explain the role of TD?

25:26 Before, we were three recently graduated from the University in the Computer Science Course. We wanted to start a startup since it was the fashion movement. Luckily, he had an open call for proposals to be part of a business incubator. We passed and went to this incubator without an idea and money. A while ago, in 2018, there was a trend of making social networks. You had the Linked-in that was growing, you had Quora, every system you had to make social networks, and at that moment, we saw that we should also be a social network. So we spent a lot of effort to make a Facebook clone; there were groups, you put articles, you followed people, you could send messages to each other on the Web, applications for Android and iPhone. We spent three months doing a social motivation network called Motivate. The idea was to bring together people who had a common goal to help each other. For example, a person wants to lose weight, so they would be part of a community and could exchange tips, hire a coach... We had the mind of engineers and, in our mind, if we made a good product, people would show up and pay. When we launched the product, we realized that everything we did was wrong. Who would pay? How would people get to know the outcome? Whose pain was it resolving? It was a good lesson. We broke badly. In one month, we had 100 active users and no prospect of making money from that product. We discovered something curious. a single feature has grown more than the entire product. On a well-known news site, it was possible to comment on the news anonymously. This opened doors for people to write exciting things, under the promise of anonymity, from confessions of infidelity to jokes, to confessions of crimes. But, analyzing the site's behavior, we found a way to know the actual name of the person who commented. It was just hidden. We made a website that compiled all of these comments together with the person's real name. In days we had thousands of users accessing the site every day. Compared to the other product, we were impressed. But of course, this site has a huge problem. Weeks later, there were already people calling with death threats, and the site was taken down. But with that, the seed was planted that people looked for the names of others and needed information. This time we hired a lawyer and researched what information would be legal. So we spent all the effort to make the social network, and then one of the features of our application was the monitoring of processes. It was not the focus there at the beginning.

We arrived at the Official Diaries, which are made public by the Constitution, and we put a feature on processes. The person can subscribe to that topic and receive alerts regarding their updates. Time passed, the concept of social networking broke. Quora today is a ghost. This is a market that has gained little. And then, we focused on the process monitoring functionality. And so the Digger was born. Today our mission is different: we want to be the best legal assistant in Brazil, but our origin was an aggregator of legal information.

6. How would you explain DT's role in your Startup pivot scenarios in one or two sentences?

35:29 That's it, it's a cliché: it's a necessary evil. We have to make between doing it well before the money runs out: either I do technical debt, or I do bank debt. So, sometimes it is better to do technical debt.