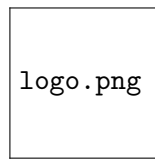


Business Plan Arckane

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Abstract

Write here what it's all about.

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1 Description

Arckane uses powerful computer science concepts to create an app where you can find teachers or offer teaching for every single skill in the world, Arckane proposes a distributed educational system where everyone can teach everyone, making it simple to charge for the tutoring services and to schedule teaching sessions. Teachers can also certify the specific skills they teach, with this Arckane can use the laws of offer and demand to create a fair global digital market of skills, users can charge for their skills securely and other people or organizations can find profiles with specific skill sets automatically. Think about it as the Uber or Airbnb of education and work.

Arckane is a technology corporation dedicated to enhance how education is achieved (distribution of knowledge and skills), make that acquired knowledge extremely useful and convert the whole process into something fun. Arckane is actually attacking two industries, the education industry and the recruiting industry.

The education industry has been widely satisfied in two main forms, the creation of educational systems and the creation of tools to enhance these systems. We can enlist 3 main educational systems, the traditional system where students assist to institutions and listen to teachers in a hierarchical social structure, autodidacticism where the students use media like books or web resources to teach themselves, and online courses which is a hybrid between the first two and uses the power of the internet to provide massive reach, these three systems provide a structure on which a person can acquire knowledge and skills and also some degree of certification, which functions as a system to communicate the skills of the student to other persons or organizations. The second widely form in which the education industry has been satisfied is the creation of educational tools, specially software tools like Wikipedia, online course platforms or domain specific apps. The way Arckane seeks to enhance world wide education is by proposing a fourth educational system, one that is orders of magnitudes better because: 1) it creates a digital platform which uses powerful computer science concepts to automate education, certification and the offering of those skills to the world after education is achieved, 2) it proposes a much better social structure for the flow of knowledge, making knowledge viral between society, 3) enables a much better economic system, making education much more economically feasible for everyone, creating economic opportunities for users and giving an extraordinary business model to Arckane.

The recruiting industry has recently been digitalized to a certain extent by social networks like Facebook or LinkedIn, but still all sizes of companies have to spend too much money, time and resources into finding the right talent. The problem is that to truly automate recruiting the system must know in detail the skill profile of each person and the specific requirements of skills of the organizations and projects, in a way in which the recruiter can be sure that the recruitee actually has the right level of proficiency in such skills, that is why even though social networks are great tools for finding people it

is still a manual picking process and not an automated reliable one. Arckane uses the power behind the digitalized distributed education system to create a digital market of skills, one in which the system granularly knows what everyone knows, and by using the laws of offer and demand it can give accurate information of the value of specific skill sets, also this allows for automatic matchmaking, organizations and projects can query the system for persons with specific skill sets who are looking to do something with them, and the persons with skills can automatically find interesting jobs and projects. The distributed education system also is complemented because organizations can certify the skills their employees are obtaining and gain reputation for it, making it more attractive for new employees. All of this made reliable and objective by powerful computer science concepts.

Mission: Make knowledge universally accessible, useful and fun.

Vision: A world where acquiring, sharing and using knowledge is simple, automatic and fun for every single person thanks to the technology and institutes created by Arckane, a world where every skill is developed on demand.

2 Justification

As mentioned in the description there exist 3 main educational systems nowadays, in this section we will enlist the pros and cons of each system and how Arkane solves these issues and retains the desired properties at the same time.

2.1 Traditional System Pros

1. Teachers and students have direct social interaction with each other.
2. Best certification system in comparison with the other two systems.
3. Widely researched by education sciences.

2.2 Traditional System Cons

1. Extremely bad economical system, students, families and the government have to invest from 20-25 years and millions of dollars in giving a generic amount of skills to a person, skills that when entering the market may lack or never be used.
2. Bad social structure, by creating a hierarchical structure education flow is damped. (see appendix A: graphs and education)
3. Even though it has the best certification system, the system is not digital, global, automated or even sometimes objective.
4. Lack of customizability, students have to learn what told and for professional education they have to wait for a university to offer the right program.

2.3 Autodidactism Pros

1. Most customizable education system, the students adapts to whatever fits him the best.
2. Education becomes “on demand” which means that the student learns what he wants or thinks he needs in the moment.
3. Is extremely cheap.

2.4 Autodidactism Cons

1. Hard to find a social environment, which is crucial for education.
2. Inexistent certification system.
3. Hard to approach because the lack of guidance.

2.5 Online Courses Hybrid Pros and Cons

1. Has massive reach thanks to the online platforms.
2. Education is more customizable than traditional but less than autodidacticism.
3. Social interaction is more than autodidacticism but less than traditional.
4. Certification system is better than autodidacticism but worse than traditional.
5. Has better guidance than autodidacticism but worse than traditional.

2.6 Arckane Holistic Solution

(A complete description of the distributed system is given at section) Arckane addresses the issues enlisted in the last subsections by giving a holistic solution, which means that its technologies does not just focus on education, but also in making knowledge useful after education is achieved by creating a healthy world wide digital market for the usage of skills and knowledge. Lets see first how Arckane solves each enlisted issue:

Traditional system issue: Extremely bad economical system.

Arckane solution: The distributed education system and the online platform allows to offer education on demand, students develop granular skills as needed or as desired, so for example if a student wants to learn to manage Oracle databases instead of having to go through a Computer Science bachelors he can find the best rated tutors nearby and develop those exact skills, the student will only pay for objective tutoring hours and can immediately use the skills after the education is accomplished. Also organizations can publish the skill profiles they are looking for so that students develop the exact set of skills needed, against developing skills that they may not use and therefore waste their money developing them. As the distributed tutor does not need to be part of a huge bureaucratic institution his hourly rate can be much lower, offering quality education at lower cost.

Traditional system issue: Bad social structure.

Arckane solution: (See appendix: graphs and education for more detailed information) The distributed education system maintains the scale free properties of the social graph keeping the viral capacity of the former, plus it does not limit someone to teach another and brings economical opportunity to whoever wants to give quality education under a reputation and rating system, incentivising the tutors to always try to be better tutors. Anyone can teach and be taught in the same day multiple times.

Traditional system issue: Lack of customizability.

Arckane solution: Since the tutors in the distributed education system are personal and get a detailed profile of each student the education can be highly customizable, using machine learning techniques the system can learn how a student learns, with this Arckane can recommend the best resources for the student and make a perfect matchmaking between tutors and apprentices.

Autodidactism issue: Lack of social interaction.

Arckane solution: The distributed education system is even more social than the traditional system, in the traditional system students go to institutions where most of the time they are prohibited to interact (when in lectures), in the distributed system there is constant interaction between the tutor and the apprentice and the other apprentices the tutor may have. Also since Arckane “knows what everyone knows” (given by the ratings of the skills of the apprentice or the skills a tutor teaches) we can create features which promote social interaction like events over things that matter, like sports, sciences or arts.

Autodidactism issue: Lack of guidance.

Arckane solution: The bedrock of the distributed education system is to exploit the power of social interaction, of finding the best tutors or guiders, its highly customizability, social interaction and digital automation allows to find great people who can guide the apprentice through whatever path he is choosing to take.

General issue: Lack of a digital, automated, global and objective certification system.

Arckane solution: Arckane uses the power of technology to bring not just the automated matchmaking of tutors and apprentices, but also an objective reputation-based certification system where an apprentice gets certificated not by one organization, but by the set of all tutors he have been using, and the certifications tutors give are more powerful thanks to 3 main features: 1) it is reputation based, which means that the certification of skill that gives a badly rated tutor has almost no value against the best rated tutors. 2) it is based on 5 ratings: introductory, basic, medium, advanced and expert, giving not a “bad” vs “good” label, but communicating the exact level of proficiency of the apprentice. And 3) it is digital, which means that Arckane can go beyond certifying and create a system where apprentices can exploit everything they have learned, it creates a digital market of skills, where apprentices can easily, fairly and automatically offer and charge for their skills, and people or organizations that are looking for an exact set of skills can automatically find people with the desired rating. Then apprentices can go beyond and get rating for their skills from the projects and organizations they have been working on, reflecting their new proficiency levels and the new skills obtained while working.

3 Busienss Model

In this section we will explain the business model canvas, since Arckane is working on top of two industries we will use labels, in figure 1 **(p)** purple is referencing the education industry, **(a)** aqua is referencing the recruiting industry and **(y)** yellow is referencing general Arckane activities. Self explanatory topics will just be listed.

3.1 Value Proposition

(p) Easily find and pay for tailor made education: Finding tutors and paying them is as easy as doing a couple of taps in the app. As described in section 2 the distributed education system enables tutors to have deep knowledge of the status of their apprentices. 1) They can directly see in the ontology what is the proficiency of all the specific skills of the apprentice, making placement exams unnecessary. 2) The results of the research on education enables us to create apprentice profiles (what they are more stimulated with, what are the techniques that have worked the best with them, etc.) and this profile is improved over time with help of the tutors. Also machine learning can be used to make Arckane learn how apprentices learn, making an automatic recommendation system of the best resources and tutors that suit the apprentice learning styles.

(p) Easily offer and charge for teaching any skill: It is easy to offer tutoring through Arckane thanks to the automatic scheduling system, all you have to do as a tutor is tell Arckane your free times and wait for new apprentices to come. Also receiving payments is easy because Arckane charges the apprentices beforehand, tutors have nothing to worry about charging. Also Arckane can recommend the tutor how much to charge for different skills since in the system we know the offer and demand of tutoring for all the skills.

(p) Education becomes cheaper: The factors that will lower the education price are: 1) There are no institutions with bureaucracy involved. 2) The system automates logistics. 3) The tutoring market is digitalized, so working and studying the economy characteristics is faster, easier, better and some time automatic. 4) Combined with the digital skill market we can transform education into education on demand, people can develop ONLY the skills they need, and do not have to waste valuable resources (money and time) on skills they may never use.

(p) Arckane is dedicated to making you an amazing tutor: Since we are creating an automated digital system with a very good business model Arckane can use its efforts and resources in researching education, studying the distributed education system fenomenas and bringing new knowledge, tools and techniques to the tutors, this value is given to every tutor in the world, giving massive reach to education research.

(a) Instantly find talent: Since Arckane has a complete, objective, certified and granular database of the skills the apprentices process (with levels of proficiency) we can offer a search engine for talent which perfectly matches the needs of the query, one may search sets of skills with different proficiencies and other criteria like geolocation. This creates an open digitalized skill market, where anyone can find talent, from a plumber, a cook, or a software engineer.

(a) Organizations save a lot of money, time and resources in recruiting: Last proposition value also applies to companies, we can offer reliable automatic talent match-making that satisfy the necessities of the company. Also companies can post job skill sets, a publication of what are the skill profiles they are looking for in different positions, then apprentices can work in creating those skills and achieving the level of proficiency needed, this way we can also convert education into education on demand.

(a) Automatically find job for any of your skills: Any apprentice can offer their skills in the skill market, which can be constantly be looking for projects or jobs for them, from freelance projects, research groups or long term jobs.

(a) Get rating of your skills by organizations: When an apprentice has been employed the organization can rate new levels of proficiency and newly obtained skills, this way apprentices can reflect their improvements to the system by working or participating in projects.

(a) Organizations can attract employees using the reputation system: Organizations gain reputation when they rate their employees skills, reputation that reflects how much employees can improve when working in the organization (and on which skills). Also organizations can build in this way a profile of the skills currently being used inside the organization.

3.2 Customer Segments

(p) Any person who wants to learn something

(p) Any person who wants to teach something: And/or wants to create economic opportunities for himself by teaching and transferring his skills.

(a) Any person who wants to sell their skill services: And/or is looking for an interesting project or job in which he can use their skills.

(a) Any person looking for someone with a skill: Or even specific skill sets.

(a) Organizations looking for talent automatically: And specially organizations who want to massively cut costs in recruiting.

3.3 Revenue Streams

(p) Apprentice fee: Each time a session is paid Arckane charges a fee to the apprentice which may vary from 5% to 15%.

(a) Freelance employer fee: Each time someone is paid for their skills through the digital skill market Arckane charges a fee to the employer which may vary from 5% to 15%.

(a) Recruiting fee: Arckane charges organizations a fee for the matchmaking of talent, this specific business model is still under consideration, considered options for now are monthly fee or per contract fee.

3.4 Cost Structure

(y) Software development

(y) Deployment cloud services

(p) Education research

(y) Logistic employees

(y) Customer care

3.5 Key Activities

(p) Software development of the distributed education system: The app interfaces, scheduling system, payments, communications, etc.

(p) Research in education: As mentioned in the value proposition 3.1 subsection to achieve high quality custom education Arckane must research the state of the art of education and do improvements in the field, this will highly increase the whole value of the distributed education system and of Arckane overall.

(p) Offer tutors tools and knowledge: See last key activity.

(a) Software development of the digital skill market

(y) Customer care

3.6 Key Resources

(y) Cloud services providers

(y) Founding

(p) Alliances with schools and online courses: One important aspect of the distributed education system is that it does NOT fight or goes against the current systems, to follow the mission of the corporation we can open an API so that people certify and rate their skills in Arckane also through the traditional system and the online courses services, giving more value to the skills developed through these systems and creating a stronger digital market of skills for Arckane.

3.7 Key Partners

Large companies constantly looking for talent: Large companies invest large amounts of resources into recruiting, with strong partnerships Arckane can extremely lower their investment into recruitment with more efficient and effective results.

Schools, universities and online courses companies: As mentioned in the Key Resources 3.6 subsection, Arckane can create strong partnerships with the service providers of the other education systems to give more value to their certifications and create a stronger digital skills market.

Education research groups: As mentioned in the Key Activities 3.5 subsection, it is of extreme importance for Arckane to be an important agent in the education research field, for this partnerships with research groups around the globe will be of much benefit.

3.8 Customer Relationships

All topics of this subsection are mentioned in the 5 Growth Plan section.

3.9 Channels

(y) App stores: Which have rating systems where we can interact with customers which have rated the app.

(y) Web: Through the app and the help tools.

(y) Call center

(p) Events: Like the Arckane Fairs (see section 5)

Arckane Model Canvas

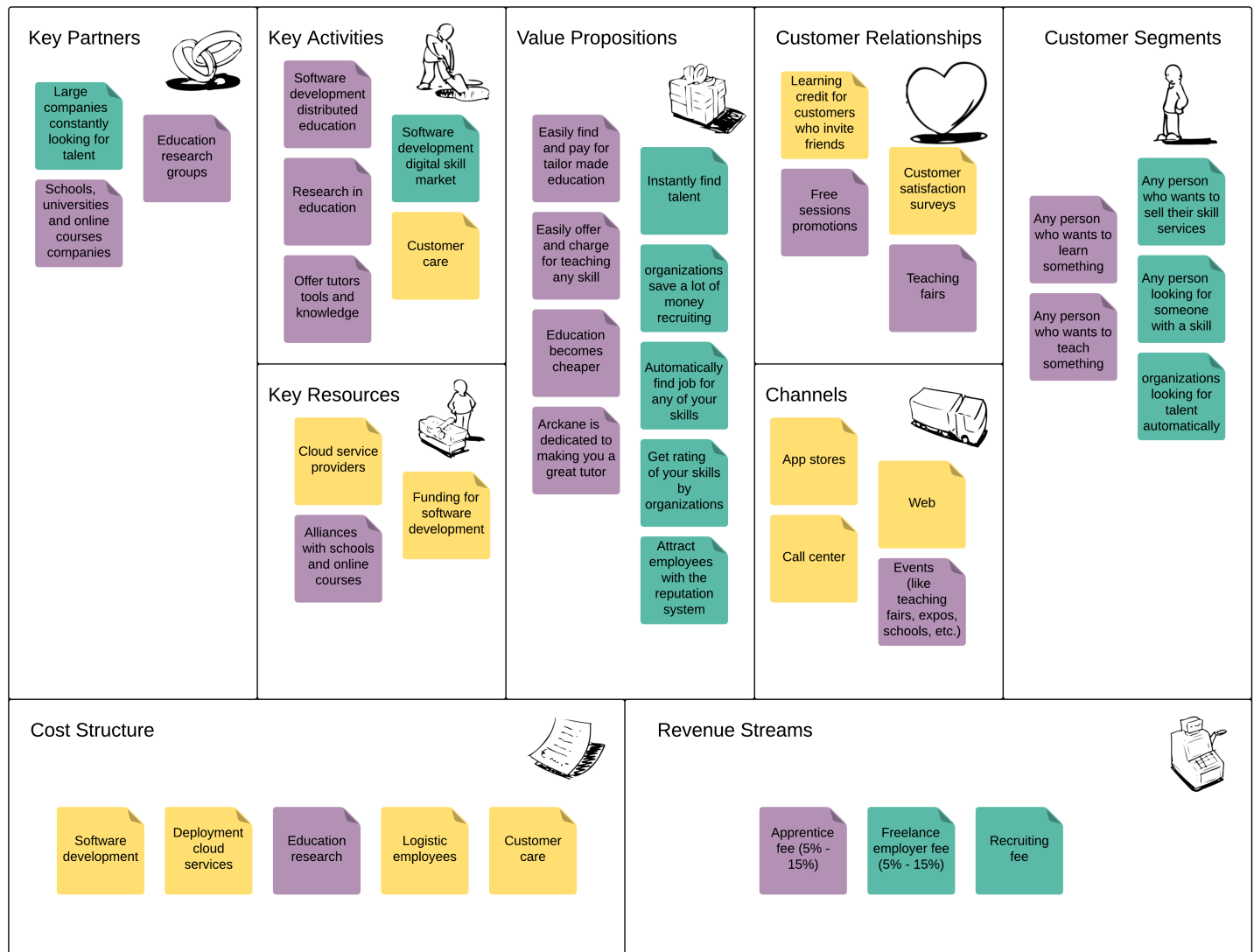


Figure 1: Arckane Business Model Canvas

4 Minimum Viable Product

You can see a complete diagram of the user workflow in figure 2, in this section we will display the features of the first mvp.

4.1 Granular skills and the Wikipedia API

Arckane takes advantage of the implicit ontology or "network of concepts" which has Wikipedia, an ontology creates a common formalization of concepts, basically every article in Wikipedia becomes a potential skill or unit of knowledge to be used for the matchmaking between tutors and apprentices, so for example if someone wants to learn/teach how to swim he can declare it by searching in Arckane the keyword "Swimming (Sport)" (which is an article retrieved from Wikipedia) and make no ambiguation between someone who might want to learn/teach swimming as an aquatic locomotion physical phenomena. Also this lets us be as general or specific as desired, for example one may already know how to swim but wants to learn new swimming strokes, there is an article in Wikipedia called "Swimming Stroke" which adds the semantic to what he is specifically looking for, or even if he wants a tutor just to learn the butterfly stroke he can search it because there is a concrete article named "Butterfly Stroke". Arckane retrieves this information using the open Wikimedia API which allows our servers to query Wikipedia. Also Arckane will eventually work in its own powerful Ontology adding a lot of semantics to what is being learned and taught, this way we can add Artificial Intelligence features later on.

4.2 The apprentice profile

The mvp must have a profile for each user, in the profile anyone can publicly see what he has learned as an apprentice and what he is teaching as a tutor. In this version in the case of the apprentice section we will see a list of the skills a tutor has rated him on (and the rating) and which skills he have declared he wishes to learn.

4.3 The tutor profile

In the tutor section we will see:

- A self written description of who he is and how he likes to teach.
- A label telling if the tutor is teaching remotely, locally (physical presence) or both.
- A map showing in which area he is teaching (if he is teaching locally).
- The hourly rate.
- A label telling up to how many apprentices he wishes to take at a given moment.

4.4 Setting up as a tutor

Every user will be able to set up his account to become a tutor, all he should need to do is three steps, add his information as a tutor (description, skills he is willing to teach, etc.), add his information for payments and his hourly rate, and finally tell Arckane his available schedule to appoint sessions.

4.5 Searching and choosing a tutor

A search box should be available to start writing a keyword, Arckane will return a list of concepts or Wikipedia article titles which may match the keyword, the user can tap this results to skim through a list of tutors that can teach those skills. A button should filter between local tutors, remote tutors or both. Now here there are two possibilities, there can be no tutors nearby or remotely which teach that skill or there can be:

There were no available tutors case then the user is shown a message saying there were no matching tutors, then the user is asked if he wishes to be notified via email if new tutors are matched in the future.

There were available tutors case then the user is displayed with a list of cards showing the resume information and hourly rates of the matched tutors, these cards can be opened to show the full profile of the tutors, then the user can tap to schedule a teacher, Arckane does NOT show the teacher's schedule, but proposes the user good times to schedule the session. For scheduling the process is as follows: 1) the tutor tells Arckane his free times, 2) an apprentice chooses a tutor and set ups directly with Arckane (Arckane does not reveal the tutors schedule), 3) the tutor is notified about the new session, which he has to confirm.

4.6 Payments

The payment process goes as follows: 1) When choosing the tutor the apprentice pays the hourly rate to Arckane, 2) the session is executed, 3) if the apprentice is satisfied with the session Arckane pays the tutor and charges the tutor and apprentice fees, 4) if not Arckane returns the money to the apprentice and does not charge any fee.

4.7 Apprentice and tutor ratings

After the scheduling is successful the session should be executed, Arckane will ask if the session was successful after it has theoretically been finished, to the apprentice it asks if he was happy with the session and to rate the tutor. To the tutor it will prompt him to rate the skills of the apprentice, after the rating Arckane will sum the time of the session to the skills of the apprentice.

4.8 Chosen technologies

(More detailed information can be found in the section 6 System Architecture) In this version we are exploiting the power of Polymer, Google's framework to use HTML5's web components technology, this allows us to create a modern, responsive web application which adapts its interface to mobile or desktop easily and with almost no technical hassle. With this we can create a powerful web application that serves every platform. In section 6 can be found in detail the back-end and front-end technologies being used (including the database and deployment environment) and also the general architecture of the system.

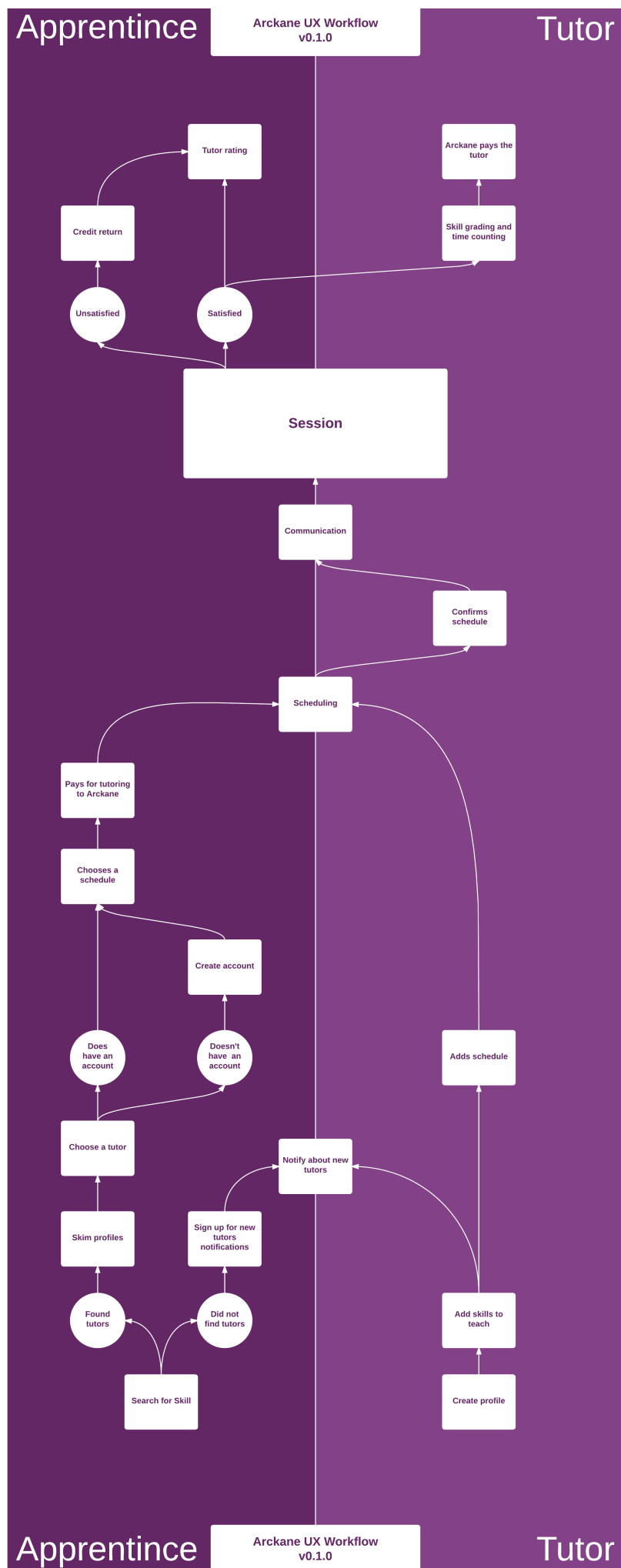


Figure 2: Arckane UX Workflow v0.1

5 Growth Plan

In this section different topics and strategies for overall Arckane's growth will be presented.

5.1 Metrics

In order to measure progress a metric is needed, such metric must measure:

- Amount of skills successfully taught/learned.
- Level of proficiency acquired.
- Amount of time invested in the sessions.
- Reputation growth.
- Organizations certification.

Amount of skills generated by the system proficiency sum

5.2 New tutors notification

5.3 Learning credit for inviting friends

5.4 Arckane fairs

5.5 Free sessions promotions

5.6 Customer satisfaction surveys

6 System Architecture

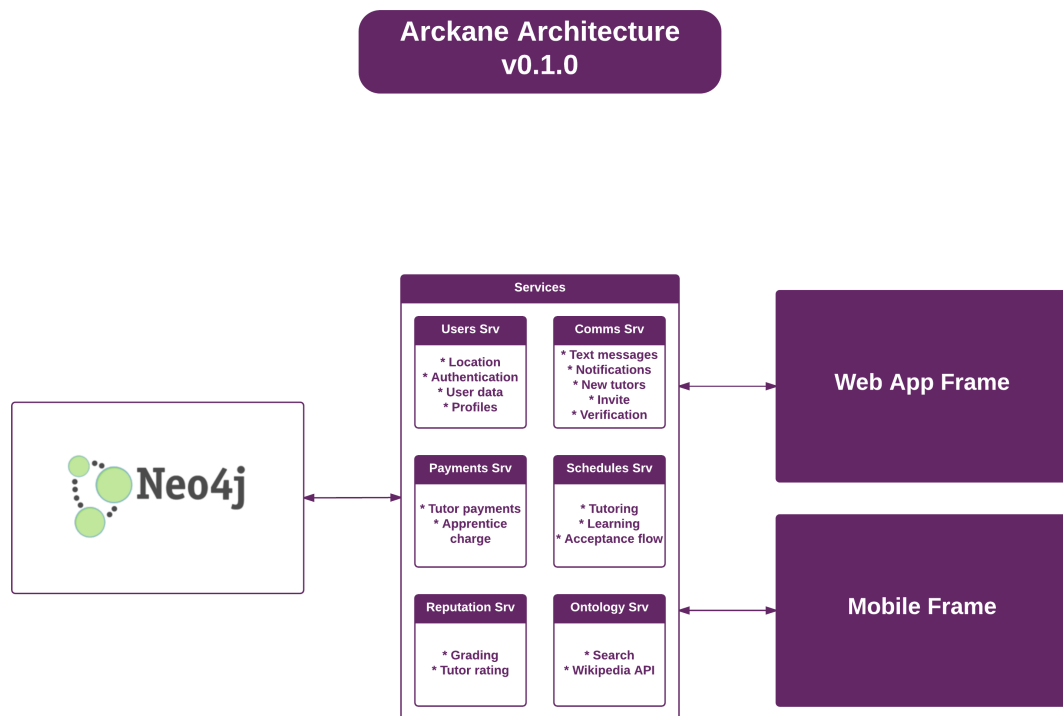


Figure 3: Arckane Software Architecture v0.1

7 Timeline and Milestones

<http://seedcamp.com/resources/setting-appropriate-milestones-in-an-early-stage-startup/>