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Wikicai Strategic Plan and Digital Note-sharing Market Research

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ABSTRACT

This project reports the history and development of the digital note-sharing business of Wikicai at Comillas University. It includes the analysis of the recent history of the company, an analysis of the main national and international competitors and the development of the new business model and business case for Wikicai. As a results, this project serves as the first stone in the way to launch a new version of Wikicai with greater potential to grow and expand nationally. Additionally, this project also focused on the technological implementation of Wikicai during its history, and most specifically, the report explains the implementation of the IP Tracking System, the main technological of Wikicai.

INDEX TERMS Wikicai, Note-sharing, Digital, Subscriptions, Advertisement, Education, EdTech, Start-up, IP Tracking System, Java

I. INTRODUCTION

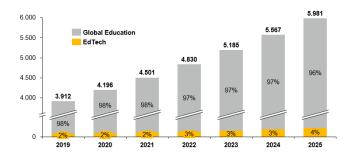
During the summer of 2017, Francisco Dueñas, a Spanish student of Comillas University – ICAI, developed and launched the start-up called Wikicai. Wikicai is an online platform that shares all the hand-written notes that Francisco has elaborated throughout his career at the university. The website allows any student to register and access the content online from anywhere at any time and permits students to organize their work accordingly to the pace at the university, as all the materials in Wikicai are properly organized in the same way the teacher does in class.

The education industry has been growing the recent years massively as society has increased its implication on improving education of young people. Nowadays, different trends shape the industry and make companies adapt to the changing habits of their customers. This project

analyzes these trends, which include digital transformation, increasing social inequalities, public funding pressures and the rising-importance of life-long learning.

Moreover, according to Euromonitor International [1], the whole education market size will grow by over 50% from 2019 until 2025, reaching a total market size of nearly 6 billion USD. However, Wikicai resides in a specific dimension of the education, which is part of the socalled digital transformation trend that is called within the education industry EdTech. EdTech is the group of initiatives and companies focused on the education market but with a core business proposal that sits on top of technology. Technology is right now the hot topic in every market, and the education is one of the industries that runs late on adapting to the new era.

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As a result, Wikicai's new launch will not only include refinement and corrections from the study of its history or from the analysis of its competitors, Wikicai will try to adapt and innovate from a technology point of view to utilize every existing tool in the market and to improve the user experience of the students while studying, which

Figure 1: Global Education and EdTech Market Size comparison. [USD Billion]

is the main goal of this project.

PROJECT DEFINITION

This project was triggered by the personal motivation and dream of Wikicai's founder to develop and expand the business outside the current market, which only resides on ICAI at Comillas University. This willingness to grow and improve is the core value of the project and aggregates all the main objectives. Regarding these specific objectives, this project aims at attacking three important aspects of the business.

First, the project will define the new business model and strategy of Wikicai for the future years, trying to achieve the best business development possible and improving the quality of the service the company provides to students. Wikicai's main value proposition when it was launched was to have the greatest notes in the market, and so, with the new business model, it aims at having the best user experience and learning for every student as well.

Second. Wikicai was born as a social initiative to help students learn and study more efficiently. With the new implementation, Wikicai will help students more than ever and most importantly, for free. Therefore, increasing the penetration of students and helping as many students as possible is a key objective for this project. Last, this project will also aim to achieve the first two objectives with the integration of technology, and therefore, there is a clear focus on technology innovation of the products Wikicai offers.

In the other hand, the methodology to perform this project is divided in three main parts. First, there is an analysis and explanation of the history of Wikicai. This part includes all the information regarding the launch of Wikicai back in 2017, the different capabilities that were built at the time and the developments that have been included until now.

Second, the project will focus on analyzing and researching the digital note-sharing market, both nationally and internationally. This research will serve as the foundation to be able to develop the new business model of Wikicai and innovate as much as possible with the existing ideas and technologies present in the market while utilizing the great experience gained by Wikicai's founders since it was founded.

Third, the project develops the new strategic plan for Wikicai in the future years. This strategic plan includes the business model of the company, the analysis of the business case and financials and the project management requirements implement the plan in the future months. This preliminary strategic plan will evolve during the future months but will serve as the foundation for the update of Wikicai's business and will ensure the future growth of the company.

III. RESEARCH, ANALYSIS AND **RESULTS**

As stated above, the research, analysis and results section of the project is divided in three main parts, which include: Evaluation of Wikicai's history and performance, Digital note-sharing market research and Wikicai's Strategic Plan definition.

A. WIKICAI'S HISTORY and PERFORMANCE EVALUATION

Regarding the history of development and launch of Wikicai, the business has had four major milestones throughout its history, starting from its launch in October 2017 and ending in an updated visual design for the website, which was launched in April 2020.



Figure 2: Timeline of developments in Wikicai's history

During the first stage of Wikicai's history, from October 2017 until January 2019, the business model of the company was to offer free access to the platform for any member, either student of ICAI, teacher or any external member who was interested in the content. Additionally, the platform didn't have any advertisement as the value proposition was focused on delivering the best experience to the customers as possible. However, generating revenues for the company was not a priority at the time and the main goal was to only recover investments via donations from some generous members. Those donations took place, but they were not sufficient to recover all costs and the business model of Wikicai had to change sooner or later.

This change of business model occurred in January 2019, when Wikicai renewed all its systems, website, servers and databases to serve their customers with a much better experience. Utilizing this improvement in quality and considering the losses during the first years, Wikicai created a business model where members could only access the content via paid subscriptions. These subscriptions were classified depending on the duration in months and gave access to different materials depending on the degree the students were enrolled in. Therefore,

students could purchase the plan for each grade independently, where they could access all the materials of subjects that were taught in that year. Subscriptions are currently sold at 0.99€ per semester and can be purchased at any time during the year and as many times as needed per member.

However, not everything was solved after implementing the subscription model, there were two main problems that Wikicai had to fight with its clients. First, every student would like to download the notes, and if they could download them, some students would purchase all plans, download all the files and share them with their peers. Second, even if they cannot download files, one member could purchase the plan, share his credentials with his peers and all of them could access the content after purchasing just one plan.

To solve these problems, Wikicai implemented two technological solutions. First and most obvious, the platform was configured in a way that it doesn't allow members without master access to download documents offline. Furthermore, to solve the second problem, a tool called IP Tracking System was implemented to avoid members who would share their credentials with friends, and which makes every student buy a membership plan to access the contents.

Regarding this IP Tracking System, it is a tool based on JavaScript that creates an online database with the information of users and their IPs. In order to work, the tool compares the last IP and the current IP from which the user is connected and kicks out of the platform any user that is changing IPs recurrently. Changing from IP two times in one minute means that two different devices connected to different networks are accessing the website at the same time. This tool ended up being very efficient on reducing bad use of the website, as no one could access the website at the same time from different devices and with the same subscription credentials.

Figure 3 below shows the workflow of decisions and analysis that the tool performs every time a user uses the platform.

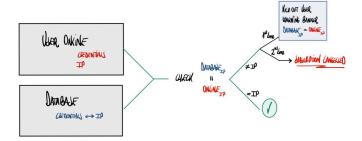


Figure 3: IP Tracking System Workflow

Additionally, the tools is programmed to kickoff users when they are considered to be cheating. Cheating means that they use the platform from different devices at the same time several times in less than five minutes. The system first kicks the user out of the platform and notifies Wikicai's management team to take action.

Results of this implementation show great reliability and performance of the IP Tracking Tool, which serves as the main stoppers for users that are willing to break the rules and use the platform without paying a subscription.

Regarding the actual development of tool, the code is segmented in several parts. Fitst, the tool uses a function getJSON to call an API and get and save the IP of the users that are online at that moment. This function is incorporated in an stanrd function called getIPAddress, which is called from the main code. Second, the main function queries in the database the user that is logging in and looks for his saved IP thanks to an integrated Wix query tool. Once the system has all the information from the user retrieved in the database "Users", it calls the function getIPAddress, and compares the IP field in the database with the IP received from the function. If they are the same, the system starts again, if not, the system saves the new IP and triggers a counter called *cambios ip*, to save the number of times that the user is changing from one IP to another. Having the information of the user in terms of the new IP address and the number of times that the user had changed from device, the tool updates the database and saves the new IP of the user. The tool, at the same time, redirects the member to an specific site created for this situation, where the user is informed that the platform is aware of his bad use of the website. Addifitonally, the user is kicked-out of the session, and needs to login again to access the content.

After the major change that occurred in January 2019, Wikicai conducted two more changes at the end of 2019 and during 2020. First, it changed the file servers due to a problem in December of 2019. Suddenly, the servers were down when traffic on the website was very high and Wikicai's founder decided to utilize that problem to update and renew the file management servers and content visualization Additionally, during 2020, the website design was renewed to deliver the best user-experience possible and reducing complexity to find contents in the platform.

Last, this section also analyzes the results of the platform from an economical and from a traffic performance point of view. First, it's important to note that Wikicai had losses since it was launched in 2017 until 2019, when the new subscription model was established. Since then, Wikicai has generated annual profits of around 300€ with over 60% of profit margin, showing great potential to improve in the future if the base of customers grows. Second, from a traffic perspective, the great response traffic shows seasonality, based on the final tests periods. Overall, the website has had more than seven thousand users since 2018, and it has seen a decrease in traffic since the subscription model was stablished.

B. DIGITAL NOTE-SHARING MARKET RESEARCH

Following on, the project analyzes and performs detailed research of the digital note-sharing market. After having a first glance at the current trends in education, start-ups, technology and the mix of all of them with the introduction of the EdTech market, it is important to study what are the business models, value propositions and results of Wikicai's competitors or alikes in other markets and countries.

Performing great research is fundamental, as the combination of the experience gained since Wikicai was launched in 2017 and the knowledge learned from this research is the base to elaborate and think through the new and best business model for Wikicai. This research is divided in two parts, as the first ones focuses on international and stablished companies while the second part is

focused on Spanish start-ups, which are direct competitors of Wikicai.

Regarding international players in the market, the biggest and most interesting companies are StuDocu, CourseHero, Chegg and Nexus Notes. Out of these, CourseHero and Chegg are American, StuDocu is Dutch and Nexus Notes is Australian but all of them show similar patterns. All of them try to have and advertise themselves as the platform with the best content in the market, both in quantity and quality. Additionally, all of them started with similar objectives, which was to improve the student life and satisfaction at university. With respect to website design and visualization, which is very important to be able to offer a great product, Chegg and StuDocu standout with respect to the others, with greater design, faster performance and an easier user-experience. Last, regarding financials and investments, StuDocu has a great presence and growth in Europe with over 1.3M€ in revenues in 2019. However, Chegg has expanded a lot in the recent years, offering a lot of different products such as online classes, books reselling and career orientation workshops. Chegg is publicly traded in USA and its market capitalization is currently over 11 billion USD with more than 320 million USD in revenues in 2019.

In the other side, DocSity and Wuolah are the main Spanish players, although DocSity was first launched in Italy, it later acquired Patatasbravas.es, which was the major player in the Spanish market. Wuolah in the other side is the biggest and most known current player in Spain and offers free content to all members thanks to its advertisement integration. However, although Wuolah business results are great, the user experience and the performance of the website is given the high density advertisements. Website design and content visualization is very poor and is not aligned with Wikicai's value proposition.

Last in this section, the project includes the analysis of Porter's Five Forces on the digital notesharing market. Results show that the most important pillars to work on are suppliers, to acquire the best possible notes for each degree and university. After approaching and fighting for suppliers, customers are the second top priority. These customers are not represented by students, even though they use the content, but by all the companies that may buy advertisement spaces in the platform, as they are the revenue generators of the website.

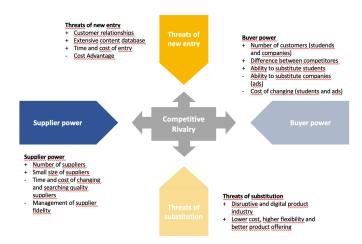


Figure 3: Porter's Five Forces analysis for market competitiveness

C. WIKICAI STRATEGIC PLAN

Last, this project utilizes all the knowledge, information and experience gained in the research and analysis of Wikicai and its international and national competitors to develop and elaborate Wikicai's new business case and strategic plan for the future years. This strategic plan includes the elaboration of the new business model and its



Figure 4: Wikicai new Business Model Workflow

corresponding business model canvas. It also includes the updated value proposition and the project management requirements and calendar to satisfy and implement the new strategic plan on time. Last, a preliminary business case is elaborated to analyze the viability and expected profitability of the business in two different and realistic scenarios.

First, the new business model of Wikicai will change from a subscription-based model to a free access for any member. Thus, this change will massively increase the number of visits and the overall traffic on the website. As a consequence, however, there will not be any revenues generated from subscriptions, and instead, the new business model will try to utilize the increase traffic on the website to monetize its visits and gain revenues via advertisements. personalized advertisements can be incorporated in certain spaces of the website or even in the actual documents and notes and can be either automated via Google AdSense or assigned individually to certain companies.

Regarding the actual business operations, as extracted from the Porter's Five Forces analysis, having great quality suppliers is key to achieve success in the market, and so, the business model considers an ambassador-based model where Wikicai has certain content managers for each university who will be in charge of procuring the best quality notes for students in their university. Thanks to this, Wikicai can achieve high personalization and quality to each university, as having general content for different universities or degrees has been proved to be insufficient in the market.

Implementing the strategic plan correctly is key to have success in the market, and so, this section elaborates a high-level calendar and work breakdown structure of the main tasks to be performed in the future months by Wikicai's management to prepare for a successful launch of the new version of Wikicai.

Main tasks are divided in five buckets and include tasks related to business strategy and operations definition, website development, content management, advertisement management and platform testing. First, business strategy definition entails part of this project, with the definition of the new business model, market entries and financial planning. Additionally, business operations definition refers to the development of techniques to optimize every-day operations at Wikicai.

Second, website development is, alongside the content management tasks, the top priorities and to-dos in the following months for Wikicai. It entails the development of the new platform and the implementation of all the capabilities required to satisfy Wikicai's standards of user experience.

Third, acquiring the best content is key to attract as many students as possible. Therefore, a lot of effort must be spent in hiring the best potential content managers for each university. In turn, the better hires, the better content Wikicai will have, the greater visits growth the website will obtain and the bigger interest that companies will have to advertise themselves in the platform. This circular analysis is one of the main advantages of the business model, as both suppliers and customers are gaining value through Wikicai.

Fourth, developing a smart advertisement strategy is very important given how dependent the business model is to revenue generation from advertised companies. Therefore, there is a lot of work to do regarding research and definition of product offerings for companies and technological development for personalized and automated advertisements. Additionally, Wikicai's management will also have to work on company pitching, selling the product to companies which may me interested in Wikicai's customer portfolio.

Last, to verify and ensure the performance of the website, a pre-launch platform testing is needed and must be verified by external users that will be invited to an early access of the website. During this time, implementations of personalized and automated advertisements will be tested.

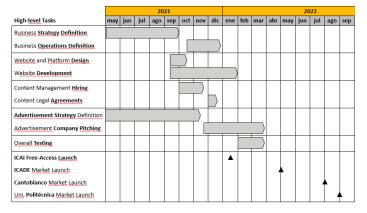


Figure 5: Wikicai's launch high-level calendar

Regarding financial planning and the business case elaboration, this project has analyzed the past performance of Wikicai and the current variables in the market to project a high-level estimation of the profitability of the business. Indeed, this analysis suggests that the business will be profitable even in the lower-case scenario, where variables are more restrictive.

		SCENARIO 1: Lower Case & Google Adsense	SCENARIO 2: Upper Case & Personal Ads
	Visits growth	180%	220%
	CPC (Cost-per-Click)	1.00 €	1.50 €
	CTR (Click-Through-Rate)	2%	3%
VARIABLE COSTS	Fee per individual (% of revenue generated)	35%	30%
FIXED COSTS	Website maintenance and development fees (monthly)	150.00 €	250.00 €
FIXED COSTS	Platform initial development	3,000.00 €	3,375.00 €
OTHER COSTS	Other financing activites (w/r to Revenues)	15%	20%

Figure 6: Wikicai new business model variables based on Scenarios

The financial plan has been built starting from the estimated monthly number of visits on the website based on the market size Wikicai is targeting at each time. During 2022, Wikicai will launch its business in ICADE, Cantoblanco and at Polytechnic University of Madrid. From the estimation of visits, the calculation goes top-down, estimating the generation of revenues based on variables such as CPC (Cost-per-Click) and CTR (Click-Through-Rate). Afterwards, the model

estimates costs associated to either fixed activities like maintenance and development of the website or variable tasks such as content management and note owners' fees. As a results, Figures 6 and 7 below show the estimated variables for each scenario and the results for the low-case scenario, as a conclusion on the high profitability of the business in the near future.

		SCENAR	IO 1				
		2022			2022	2023	2024
	Q1	Q2	Q3	Q4			
Visits (End of Period)	30,000	75,000	97,500	397,500			
Total Ad Clicks (End of Period)	450	1,125	1,463	5,963			
Revenue	450 €	1,125 €	1,463 €	5,963 €			
Revenue Growth %		150%	30%	308%		180%	1809
Cost of Sales*	158 €	394 €	512 €	2,087 €			
Gross Profit*	293 €	731 €	951 €	3,876 €	5,850 €	16,380 €	45,864
Gross Margin %					65%	65%	65%
Operating Expenses*	450 €	450 €	450 €	450 €			
EBITDA*	-158 €	281 €	501 €	3,426 €	4,050 €	14,580 €	44,064
EBITDA Margin %					45%	58%	629
Investment & Financing*	3,000 €	169 €	219 €	894 €			
Cash* (At End of Period)	-3,158 €	113 €	281 €	2,531 €			
* in 000s					-3%	43%	479

Figure 7: Financial model results for Scenario 1

		SCENAR	110 2				
		2022			2022	2023	2024
	Q1	Q2	Q3	Q4			
Visits (End of Period)	30,000	75,000	97,500	397,500	600,000	1,920,000	6,144,000
Total Ad Clicks (End of Period)	900	2,250	2,925	11,925			
Revenue	1,350 €	3,375 €	4,388 €	17,888 €			
Revenue Growth %		150%	30%	308%		220%	2209
Cost of Sales*	405 €	1,013 €	1,316 €	5,366 €			
Gross Profit*	945 €	2,363 €	3,071 €	12,521 €	18,900 €	60,480 €	193,536
Gross Margin %					70%	70%	709
Operating Expenses*	750 €	750 €	750 €	750 €			
EBITDA*	195 €	1,613 €	2,321 €	11,771 €	15,900 €	57,480 €	190,536
EBITDA Margin %					59%	67%	699
Investment & Financing*	3,375 €	506 €	658 €	2.683 €	7.223 €	12.960 €	41,472
Cash* (At End of Period)	-3,180 €	1,106 €	1,663 €	9,088 €	8,678 €	44.520 €	149.064
* in 000s	3,100 0	.,.50 0	.,	2,200 0	32%	52%	549

Figure 8: Financial model results for Scenario 2

Overall, these business case results verify that there is a lot of potential in the market to launch Wikicai with the new business model. Results show cash margins greater than 40% since the second year of business, assuming that every year, thanks to launches in new universities, the growth rate will be at least around 200%. Having such high margins and profits empowers the team to keep working on the business model and the development of the new platform and ensures that if any problem surges in the way, there is room in the back to respond.

IV. CONCLUSIONS and NEXT STEPS

First, this project shows the great effort and initiative applied by Wikicai's founder since the business was launched back at 2017. During these years, the website has evolved and developed a lot, and has been very resilient to changes, problems and external criticisms. In this matter, Wikicai will keep on working hard towards achieving the best experience for students, who are the at the end the most important stakeholders of the project. The feedback received from the students builds a great satisfaction and increases motivation to keep pushing forward in this journey.

Analyzing in detail Wikicai's journey, the change of business model in 2019 was key to sustain the platform development and growth. There was a need of revenues at the time to keep Wikicai alive, and the solution was perfect for the problem. However, the current situation of Wikicai's founder and the rising importance of online education makes it a great time to evolve again Wikicai's business and bring back free access to the platform to let any student utilize the content available. As there are a few players in the market, and to differentiate with them, Wikicai will bet on the best user experience and the best high-quality content possible, trying to outstand with personalized integration of the degree's syllabuses on the website.

As next steps, this project has given a great start on project management requirements to implement the new strategic plan of Wikicai, however, like any other entrepreneurship journey, motivation and hard work is the foundation for success and Wikicai's management team has a lot of both.

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APPENDIX I - IP TRACKING SYSTEM CODE

```
import wixData from 'wix-data';
import wixUsers from 'wix-users';
import { getJSON } from 'wix-fetch';
import wixLocation from 'wix-location';
export function getIpAddress() {
    return
getJSON("https://api.ipify.org/?format=j
son&callback=")
        .then(json => {
            return json.ip;
        })
        .catch(err => {
            console.log(err);
        })
$w.onReady(function () {
    let user = wixUsers.currentUser;
    let idusuario = user.id; //
    let isLoggedIn = user.loggedIn;
    var cambiosip
    getIpAddress().then((ip) => {
        user.getEmail()
            .then((email) \Rightarrow {
                let userEmail = email;
// "user@something.com"
                wixData.query("Users")
                     .eq("idusuario",
idusuario)
                     .find()
                     .then((results) => {
(results.totalCount > 0) {
                                 if
(results.items[0].ip === ip) {
                                 } else {
                                     let
toUpdate = {
" id": userEmail,
"idusuario": idusuario,
"ip": ip,
"email": userEmail,
"cambiosip": cambiosip + 1,
```

```
let
options = {
"suppressAuth": true,
"suppressHooks": true
                                      };
wixData.update("Users", toUpdate, options)
.then((results1) => {
let item = results1;
                                          })
.catch((err) => {
let errorMsg = err;
                                          });
wixLocation.to("/anti-sharing");
wixUsers.logout()
                                 }
                             } else {
//logging in for first time
                                 let toInsert
= {
                                      " id":
userEmail,
"idusuario": idusuario,
                                      "ip":
ip,
                                      "email":
userEmail,
"cambiosip": "0",
                                 };
wixData.insert("Users", toInsert)
.then((result1) => {
                                          let
item = result1; //see item below
                                      })
.catch((err) => {
                                          let
errorMsq = err;
                                      });
```