

A Work Project, presented as part of the requirements for the
Award of a Master's Degree in Finance/Management from the Nova School of Business and Economics.

CONSULTING PROJECT FOR JOSÉ DE MELLO SAÚDE:

ENHANCING REMOTE MEDICAL CARE IN THE PORTUGUESE MARKET

Work project carried out under the supervision of:
Professor Constança Monteiro Casquinho

03-01-2020

JOÃO MARIA DE HERÉDIA DE SOUSA MENDES | N° 23861
MARIA LUÍSA FURTADO DE MENDONÇA LANCASTRE | N° 23769
MADALENA CACHÃO COLLARES PEREIRA | N° 34401
MARIA MONTEIRO SIMÕES | N° 23852

Abstract: The following report has the objective of assessing the remote healthcare market and defining how José de Mello Saúde can sustain its leadership position by establishing a remote clinical relationship with its clients. For that purpose, a market assessment was conducted, followed by an extensive analysis of the clients' demand and of the healthcare professionals' willingness to provide remote clinical services. Finally, the team focused its attention on the recommendation of three services, which are the Teleconsultation, the Clinical Contact Centre and the Direct Contact to Doctor. In the end, some limitations and future challenges were also analysed.

Key words: Healthcare market, José de Mello Saúde, Leadership position, Remote clinical relationship

The Consulting Lab is a mutually beneficial partnership between a set of companies such as José de Mello Saúde and Nova SBE's students. The main goal of this field lab is to provide students with a real-life consulting experience before entering into the job market.

OVERVIEW

- Consulting Labs' Master Thesis offer students the opportunity to experience the consulting environment and develop a real-life project. The team was asked to develop a project for José de Mello Saúde, the private healthcare leader in Portugal, with the aim of **developing the basis for a remote clinical relationship with its clients**. In this way, the company could be able to boost innovation and meet customers' needs in a quicker and cost-effective way.
- During a period of 4 months, the team had the possibility to **work in JMS's facilities** in Carnaxide, being able to develop and strengthen a close **relationship with the client** by having always in mind the continuous process of **syndication**. In fact, working alongside the client and its internal teams, was key for the project's success.
- In addition, the supervision of Professor Constança Casquinho, a remarkable expert in the consulting industry, was essential to guarantee a professional and right execution of the project. The team believes that this project achieved the expected results, hence **adding value to the company**.

OBJECTIVES

- To **get an idea of the consulting environment** by participating in a real project, where students have the opportunity to engage and work with a real client and learn from its experience and work methodologies;
- To **apply the theoretical and practical concepts** learned through the Master's experience to a real-life project;
- To **develop** and improve a broad range of **soft** – team-work, syndication, presentation skills - **and hard skills** – deep knowledge of the healthcare industry and its market trends;
- To **bring value to the company** and innovative ideas after understanding the clients' needs and expectations;
- To **immerse in the company's corporate culture** and **business strategy**.

ADVISORS



Dr. Rui Diniz | Vice-President of the Executive Committee
Dra. Catarina Gouveia | Executive Committee Member
Dra. Ana Allen Lima | Marketing Manager
Dr. José Vera | Information Systems Manager
Dra. Edla Pires | Marketing Team
Dra. Mafalda Sampaio | Customer Service Department
Dra. Madalena Clara | Innovation Team



Prof.^a Constança Monteiro Casquinho

TEAM



João Sousa Mendes



Luísa Lancastre



Madalena Collares Pereira



Maria Simões

ACKNOWLEDGEMENTS

To Professor Constança Casquinho, for the constant motivation, 24/7 support and for sharing her tremendous expertise as a consultant.

To Dr. Rui Diniz and Dra. Catarina Gouveia, for all the shared knowledge and amazing feedback on Steerings, which enabled the team to add more value to the project.

To Dra. Ana Lima and Dra. Edla Pires, for inviting us to join the Marketing Team during the course of the project and for all the endless brainstorming meetings, which were crucial to the development of the project.

To Dr. José Vera and Dra. Mafalda Sampaio, for their endless guidance and support, which were key for the project's implementation.

To the members of the Commercial and the Strategic Planning Teams, for all the information and time provided.

To all the interviewed doctors, nurses and patients, for their valuable inputs and promptness to contribute to the project.

- CC – Contact Centre
- CCC – Clinical Contact Centre
- CCNSBE – Clinic CUF Nova SBE
- DGS – The Directorate-General of Health
- DPIA – Data Protection Impact Assessment
- DPO – Data Protection Officer
- FO – Front Office of Hospitals/ Clinics
- FTE – Full Time Equivalent (40 working hours/week)
- GDPR – General Data Protection Regulation
- GP – General Practitioner
- HCC – Hospital CUF Cascais
- HCD – Hospital CUF Descobertas
- HCIS – Hospital CUF Infante Santo
- HCTV – Hospital CUF Torres Vedras
- HCV – Hospital CUF Viseu
- INE – Portuguese National Institute of Statistic
- ISD – Information Systems Direction
- JMS – José de Mello Saúde
- MAC – Assistant CUF doctor
- KPIs – Key Performance Indicators
- SNS – Portuguese National Health Service
- SLA – Service Level Agreement
- WHO – World Health Organization

- **ADSE** – Portuguese public healthcare subsystem.
- **Clinical Contact Centre** – Contact centre composed by nurses and administrative staff that are delivering remote support to patients.
- **Follow-up** – Outbound contact made by a nurse to check patient’s health condition after a medical intervention.
- **In-bound contact** – Incoming call from patients to the Contact Centre.
- **In-depth interviews** – Qualitative research technique that involves conducting a semi-structured one-to-one interview in order to explore respondents’ feelings and thoughts on a particular idea/situation.
- **MAC** – General and family medicine or internal medicine specialist who knows patients’ medical history and monitors their health condition.
- **Mobile health** – The use of mobile technologies and devices to improve healthcare delivery and support.
- **Monitoring** – Use of information and communication technologies to monitor patients’ health condition. Patient inserts/informs about his/her vital parameters, allowing nurses to follow and supervise patient’s health status.
- **Outbound contact** – Contact centre’s operators call to patients.
- **Persona** – Fictional character created to represent the ideal customers from a specific segment.
- **Teleconsultation** – Healthcare appointment carried out remotely, i.e. doctor communicates through videoconference with the patient.
- **Telemedicine** – The use of information and communication technologies to improve patients’ health condition by enabling a greater access to care and medical information, outside of the medical facilities (WHO, 2010).
- **Triage** – Process of examining sick or injured people, usually done by nurses in order to sort patients based on their need for immediate medical treatment. Also, patients can use digital tools for first self-diagnosis.

COMPANY – JOSÉ DE MELLO SAÚDE

- José de Mello Saúde is a subsidiary of José de Mello Group and it is the **largest private healthcare provider** in Portugal. With over **70 years of accumulated know-how** regarding the Portuguese healthcare market, the group built its first hospital in 1945 with the purpose of serving the employees and relatives. The company develops its activity through a **strong network** composed by nine hospitals and nine outpatient clinics.
- JMS's mission is to provide healthcare services according to the **highest knowledge standards**, through the development of intellectual capital, in a **continuous search for the best**.

ABOUT THE PROJECT

- José de Mello Saúde is trying to keep up with the competition by embracing the new technological trends in consumer digital preferences and by meeting customers' needs. With the objective of being more efficient and competitive, JMS proposed the team to develop the basis for a **remote clinical relationship with its clients** based on **3 ambition levels**:
 1. **Optimize infrastructures** and systematize existing outbound services;
 2. Reinforce **nurses' added value** by offering inbound services;
 3. Innovate and facilitate the **services provided by doctors** through remote interactions.
- The **scope of the project** changed from the initial ambition levels to the development of 3 projects inserted only in the first (**Clinical Contact Center**) and third ambition levels (**Teleconsultation** and **Direct Contact to Doctor**).

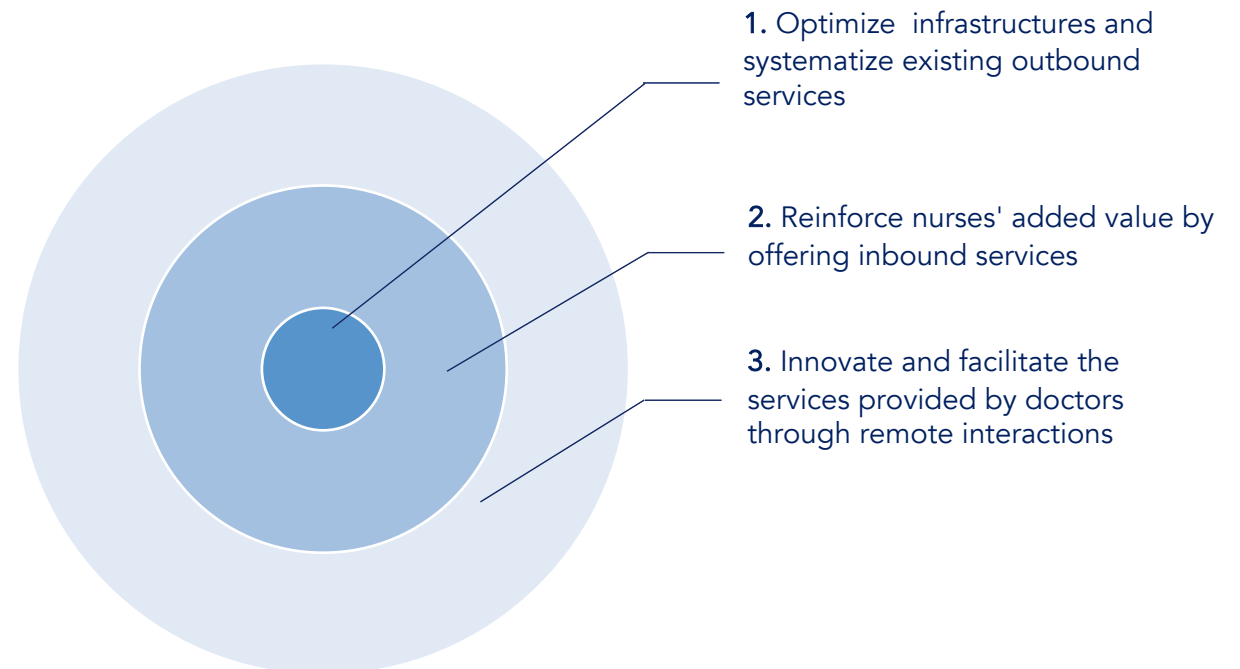


Figure 1 – Ambition levels

Key Take-Aways

INTERNAL ANALYSIS

- JMS is **well-positioned to take the Telemedicine projects forward**, namely because of its value-based growth strategy, its already existing infrastructures and its long-lasting client-focused approach. In addition, **CUF clients are already looking for remote clinical services**, as 42.2% of all tickets created in the CC are related to medical support and there is a strong preference for My CUF when it comes to exams' delivery. Therefore, JMS has already taken some steps in this direction by developing some pilot projects and internal programmes in this area.

DEMAND & SCOPE REDEFINITION

- Based on the insights gathered from **10 in-depth interviews**, the team created and characterized **five personas** considering the following criteria: age, priorities, technology level and lifestyle. These personas are representative of the possible users of JMS's remote clinical services.
- Customers' expectations are becoming harder to meet, so JMS should customise solutions to each segment according to their individual specificities as they tend to behave differently in face of remote clinical services.
- An **online survey** was conducted to **486 people**. **73%** of all surveyed people demonstrated **interest in using remote clinical services**. However, they are only willing to pay for these services when partially covered by insurers. Moreover, **63% of competitors' clients** confirmed that they **would use CUF's remote clinical services** if provided.
- At the moment, **customers are mainly looking for Direct Contact to Doctor and Follow-up services**.
- From a wide list of remote clinical services, within the 3 ambition levels, the team was advised to study the feasibility of 3 specific projects (**Teleconsultation, Clinical Contact Centre and Direct Contact to Doctor**), taking into account 2 criteria: expected impact and easiness of implementation.

EXTERNAL ANALYSIS

- The global Telemedicine market is vastly growing. In 2019, this market was valued at **\$30,5B** and, by 2021, it is expected that it will be valued at \$ 41,2 bn, representing an implied **CAGR of 16,2%**. In terms of geographical distribution, **North America** accounts for the **major share** of the global Telemedicine market, while **Asia Pacific** stands out as the region with the **highest growing** Telemedicine rate.
- The key trends that are shaping the healthcare market are the increasing **ageing population**, the increasing **prevalence of chronic diseases**, the **busier** and more **health-conscious lifestyles** and patient's higher preference for **digital solutions**. Telemedicine has appeared as the solution to all these changing trends and, therefore, this practice is at the top of the agendas of all healthcare providers.
- The Portuguese healthcare market is also experiencing the same trends, however the **health literacy levels** in Portugal are very low, which probably will **delay the adoption of Telemedicine**.
- The healthcare industry has also experienced the **entrance of new players**, both nationally and internationally. These new players are mostly **insurance firms** and **technology platforms**, which are now focusing on providing remote clinical services. Traditional hospitals are also embracing this trend as they realised the potential of this market.
- In Portugal, some of the traditional players are **Luz Saúde, Cruz Vermelha** and **SNS**, whereas non-traditional players are, for example, **Multicare** (insurance firm) and **Knok** (technological platform).
- The **teleconsultation** is the **most predominant service** both national and internationally. Additionally, non-traditional players mostly offer teleconsultation and triage services.

Key Take-Aways

TELECONSULTATION

- **Eleven interviews to doctors** from the most appropriate areas of specialization for teleconsultation were conducted. Both **GPs** and **dermatologists** mentioned that teleconsultations should be concentrated in a **specific slot** and the price should not differ. In addition, they consider the service feasible **only for subsequent consultations**. As there is **no consensus among anaesthesiologists**, a **pilot in dermatology** seems to be the most suitable, as most of the doctors already have an online relationship with their patients.
- People value a dermatology teleconsultation service, being **65% the average degree of interest** of the in-person survey.
- The team suggests a **1-year pilot testing in HCD** as it is the #1 hospital in the dermatology specialty and contains a team of enthusiastic doctors opened to embrace this project.
- In terms of IT, JMS could partner with a teleconsultation platform or with a videoconference software.
- Only **3 doctors will be chosen** for the pilot. Each doctor will have, on average, a **1h weekly slot** but, at the beginning, slots should be spread over time to guarantee that doctors have enough clients and a reasonable number of teleconsultations per slot.
- In a scenario where the pilot at the HCD runs well and the dermatology teleconsultation service is extended to all CUF's units, the **market size**, in the steady state, would be **199 970 clients** (CUF and non-CUF).
- Through a break-even analysis, one can state that partnering with a teleconsultation platform is not financially viable. However, the implied teleconsultations of the **videoconference scenario** are an **achievable target** considering the 3 doctors' potential demand. As a result, the team proposes JMS to opt for a videoconference software partnership.
- **Videoconference Google Hangouts** appears as the most appropriate option as it is already used by JMS and HCD's computers already have it embedded.
- In terms of the location for the teleconsultation, the pilot should be run in an **empty room** of the hospital to take advantage of this space – free consultation rooms and easier to conciliate doctors' agenda.
- Finally, the team listed some **KPIs** that will be determinant to assess whether the project is achieving the key goals and to make the **decision go/no go**.

CLINICAL CONTACT CENTRE

- Today JMS is **spending approximately 174 089€** in outbound contacts (preparation and follow-up contacts), which are not centralized neither being performed at 100%.
- Nurses are willing to provide outbound contacts in a **centralized CC**, as long as **shifts are rotational** and **once a week**. They highlighted the importance of **splitting the types of contacts** according to each nurse's specialization.
- The team proposes the implementation of the **CCC in Viseu** due to its cost advantage compared to Lisbon and resourcefulness (enough space and nurses). In order to test this project, the team proposes a **6-month pilot testing**, which will count with 5 nurses, working 2 shifts of 4 hours once a week. These nurses will be responsible for conducting follow-up contacts of **adults' emergency**.
- **If the pilot is successful**, the CCC will count with 56 nurses (~12 FTEs) and 28 CC operators (~6 FTEs) covering **404 729 contacts annually**. CC operators will be responsible for conducting preparation contacts, except for preparation of anaesthesia consultations. Nurses will take on the preparation of anaesthesia consultations and all the follow-up contacts. Moreover, **nurses will be divided in 5 groups**: maternal and obstetric health, surgery, medical health, paediatric health and exams/biopsies.
- In terms of financials, the **pilot** will have an estimated **cost of 43 555€** and little to no gains are expected. In the **steady-state**, the CCC will have an estimated **cost of 382 579€** and **direct gains** of at least **447 325€** per annum. Costs are mainly related to occupied positions and salaries, while direct gains are mainly related to the decrease in exams and surgeries cancelations and the increase of anaesthesia consultations due to the creation of a preparation contact.
- In the **long-term**, JMS may also be positively impacted by **indirect gains**. The team expects that the CCC will increase the customer loyalty and decrease the churn rate, potentially leading to 4,7M€ in gains.
- The team also defined some **KPIs** in terms of quality control and operating efficiency so that all activities are performed at the highest standards.

Key Take-Aways

DIRECT CONTACT TO DOCTOR

- In 05/19, **42,2%** of tickets generated in JMS's CC required **doctors' attention**. These tickets take a very long time to arrive and most of them get lost in the doctors' offices, resulting in **missing** or **delayed** answers for the patients.
- The team proposed **3** different services which would create a quicker and more reliable doctor-patient remote interaction: a premium support line to talk with **GP/paediatricians**, a premium support to talk with **specialists** via My CUF and a premium support to talk with **specialists backed up by junior GPs** via My CUF.
- Interviewed doctors **rejected** all the options and the **main reasons** were schedule limits, the impossibility of providing immediate responses and the patients' incentive to contact constantly.
- Even so, the team thought it was useful to get the patients' opinion and, in this way, to run a survey. The main findings are that patients **highly value** a direct contact to doctor service and are **willing to pay** for it.
- Due to the impossibility of creating a direct contact to doctor service, the team proposes a more **agile** and **cost-effective** solution to the current flow of tickets in operation. This solution comes down to **directly sending all of the medical contacts which do not replace a consultation to the doctors' e-mails**, instead of printing them, and **allocating an administrative staff** (connecting link) to **monitor this activity**.

FUTURE CHALLENGES

- In the future, JMS is expected to face some challenges related to increasing competition, doctor's objection to Telemedicine, changing legal environment, increasing technology-based healthcare and globalization. As to better address and adapt to these challenges the team proposes to JMS:
 - **(Competition)** to focus on offering differentiative services based on quality and exceptional patient experience and also to develop partnerships with other providers in order to cut off competition;
 - **(Doctor's reluctance to the use of Telemedicine)** to incentivize Telemedicine activity by providing doctors, which are part of this practice, with better conditions;
 - **(Legal)** to be cautious about legal changes by keeping up with legal procedures and evolutions;
 - **(Technology)** to redesign all current systems so that new technologies can easily be integrated and be ready to operate in a short period of time;
 - **(Globalization)** to extend digital services to other languages and to offer a more diverse array of remote clinical services, especially focused on serving Portuguese nationals living or visiting abroad.

LIMITATIONS

- During the course of the project the team faced some limitations which may have affected the results and conclusions presented.
- When it comes to the **sample representation** of the clients' interviews, they were only conducted in Lisbon and did not include the under 16 age group, which makes the used data **not representative of the total Portuguese population**. When it comes to doctors' interviews, due to their restricted time agendas, it was only possible to approach 11 doctors. The team used these interviews as the general doctors' world, which may not be necessarily true.
- In terms of the **players' and technical providers' analysis**, the team faced **lack of available information** and **linguistic barriers**, which restricted the group analysis.
- Regarding the **final recommendation**, the team was not able to accurately quantify some revenues and costs due to lack of internal information. Furthermore, the original scope of the direct contact to doctor's project was redefined as interviewed doctors rejected all the proposed services.

1. Methodology
2. Background
3. Internal Analysis
4. External Analysis
5. Demand
6. Teleconsultation
 1. Viability Analysis
 2. Recommendations
7. Direct Contact to Doctor
 1. Viability Analysis
 2. Recommendations
8. Clinical Contact Centre
 1. Viability Analysis
 2. Recommendations
9. Challenges
10. Limitations
11. Individual Reports
12. References





1. METHODOLOGY

The project was divided in three main phases: Diagnosis, Analysis and Recommendations. The first one consists in a contextual research of the internal and external environment.

During the project, the team was **fully dedicated** to the so-called process of **syndication**. In this way, the team had **weekly meetings** with several internal teams and **three committees** in order to **bring the client on board** about the progress of the project and to make sure that the **added value was being created and expectations were being met**.

1. DIAGNOSIS

1. Internal Analysis

Objectives: Analyse internal environment to understand how JMS's strengths can be applied to remote clinical services.

Methodology: Analysis of previous financial performance and study JMS's current resources and capabilities that can be used to leverage its position in the Telemedicine market. All analysis include online research (JMS's annual report and website) complemented with internal documents.

Components:

- **Overview & financial performance:** Get an overall picture of the company and analyse JMS's financial performance in order to assess company's health and get an idea of the expected future prospects of the company.
- **Available resources and assets:** Identify JMS's current resources and assets, to deeply understand the company's position to embrace a Telemedicine project.
- **Window of opportunities:** Analyse JMS's infrastructures and internal programmes, to understand how clients are looking for remote clinical services.

2. External Analysis

Objectives: Study the external environment to identify the opportunities and threats that JMS might find.

Methodology: Understand the global Telemedicine market, identify national and worldwide trends, as well as perform a national and international benchmark. All analysis include online research and also, contacts to players in order to ask non-available information).

Components:

- **Market evolution:** Get an overall picture of the global Telemedicine market as it helps to forecast the future prospect of the market.
- **Market trends:** Point out the key trends that have been influencing the Telemedicine market and how they are impacting the companies.
- **Pestel:** Assess the macro factors that might impact JMS and find its current opportunities and challenges.
- **International benchmark:** Identify the key global players and conduct an extensive analysis, in order to see how healthcare providers are serving the market and all the remote clinical services offered.
- **National players:** Identify the main players and deeply analyse them, to comprehend the Portuguese market, which will be the focus of the project, and understand the main services offered, service conditions and the advantages of the implemented services.

The second phase aims to find out the most feasible services that JMS should implement, based on an analysis of the clients' demand and on the health providers' (doctors and nurses) willingness to provide these services.

For the analysis phase, a **design thinking approach**¹ was used. This method aims to understand users and develop innovative ideas to prototype and test. This approach consists of 5 phases: **empathize** (research all the parties involved' needs through interviews), **define** (state users' needs via personas definition and analysis of health providers' beliefs and pain points), **ideate** (identify innovative solutions through brainstorming sessions), **prototype** and **test** (via questionnaires to clients).

2. ANALYSIS

Objectives: Assess clients' demand and health providers' willingness to provide remote clinical services, as well as to find the best possible and feasible services to JMS implement.

1. Demand

Methodology: Performance of qualitative research and creation of personas, as well as quantitative research and choice of the most appropriate remote clinical services.

Components:

- **Qualitative research:** Perform in-depth interviews to define groups of customers willing to use remote clinical services.
- **Personas:** Define potential user types of JMS's clinical services to better understand how the different segments differ on needs/expectations.
- **Quantitative research:** Quantify clients' demand for specific remote clinical services, in order to choose the most suitable services to implement.

2. Teleconsultations

Methodology: Performance of qualitative research both to doctors and clients, as well as choice of the most appropriate speciality to test this service.

Components:

- **Doctors' interviews:** Perform interviews to doctors to understand their willingness to give teleconsultations.
- **Clients' interviews:** Conduct online and in-person surveys to test if there is demand for dermatology teleconsultations.

3. Direct Contact to Doctor

Methodology: Performance of qualitative research both to doctors and clients.

Components:

- **Doctors' interviews:** Perform interviews to doctors to understand their willingness to receive contacts related to patients' doubts and requests.
- **Clients' interviews:** Conduct online survey to test if there is demand for a service of direct contact do doctor.

The CCC, the last topic of the analysis phase, also based its conclusions on the performance of interviews both to nurses and clients. The third and last phase of this project, recommendation, includes a list of useful outlines for each project.

2. ANALYSIS

4. Clinical Contact Centre

Methodology: Performance of qualitative research to nurses, as well as analysis of the outbound contacts that are already made at units.

Components:

- **Current situation:** Estimate the total number of outbound contacts based on the data gathering by the marketing team.
- **Nurses' interviews:** Perform interviews to nurses to understand their openness to do these services in a CCC and their perception of this service.

3. RECOMMENDATIONS

1. Teleconsultations

Objectives: Provide feasible recommendations for this service, present a P&L as well as an implementation plan that includes all the necessary activities.

Methodology:

- **Pilot:** Structure and design a detailed prototype of the pilot in dermatology. Decisions regarding doctors' and space allocation were discussed with HCD's internal team.
- **Operation:** Conduct an extensive analysis of the potential partnerships, as well as present the workflow of activities considering two scenarios (teleconsultation platform and videoconference software), in order to assess the respective list of all requirements. All analysis were elaborated with the support of the ISD team, Legal and DPO department.
- **Demand & Supply:** Quantify the potential demand for the pilot in order to assess if the supply (doctors allocated to the pilot) is enough to meet the potential demand. Also, estimate the market size of dermatology teleconsultations.
- **P&L:** Perform a break-even analysis considering two scenarios (teleconsultation platform and videoconference software) with the aim of understanding whether this solution brings financial and operational benefits for JMS. All the costs were provided by internal teams (ISD, marketing and commercial department).
- **KPIs:** List the performance indicators that will be determinant to assess the results of the project. The KPIs' targets were defined with the support of JMS's internal teams or through a benchmark analysis.
- **Implementation plan:** Create a detailed implementation plan, to give an overall picture of the activities included and the respective time required to put each step into practice.

The third and last phase of this project includes a final list of useful recommendations for each project: Teleconsultation, Direct Contact to Doctor and Clinical Contact Centre.

3. RECOMMENDATIONS

2. Direct Contact to Doctor

Objectives: Deliver a useful recommendation to improve the efficiency of the current service.

Methodology: Design a short-term solution with the support of ISD and Customer Service Department.

3. Clinical Contact Centre

Objectives: Present useful and feasible recommendations for the pilot and for the long-run, as well as two implementation plans that include all the necessary activities.

Methodology:

- **Pilot/steady state:** Design a pilot for a specific group of outbound contacts as well as structure the future contacts for the steady state. These analysis were elaborated along with some nurses as well as with the marketing team taking into account the customers' pain points. Additionally, the group spoke with the Strategic Planning and HR teams.
- **Workflow:** Design a mapping journey that was validated by the head of CC department.
- **Financials:** List the key costs and benefits related with the pilot and the steady state, to assess the viability of the project. For the indirect gains and marketing costs, the team discussed with the marketing department. For the direct gains and costs, the group had the support of nurses, CC and quality department.
- **KPIs:** List the performance indicators that will be determinant to assess the results of the project. The KPIs' targets were defined with the support of JMS's internal teams or through a benchmark analysis.
- **Implementation plan:** Create two extensive implementation plans, to give an overall picture of the activities included and the respective time required to put each step into practice.

QUALITATIVE AND QUANTITATIVE RESEARCH METHODS

The team's investigation regarding the possibility of JMS establishing a clinical remote relationship with clients was supported by both empirical and analytical research methods.

INDUSTRY EXPERTS' INTERVIEWS

- **13 CUF doctors:**
 - 2 Anaesthesiologists
 - 6 GPs
 - 2 Dermatologists
 - 2 Paediatricians
 - 1 Orthopaedists
- **9 Non-CUF doctors:**
 - 2 Anaesthesiologists
 - 3 GPs
 - 2 Dermatologists
 - 1 Paediatrician
 - 1 Gynaecologist
- **4 CUF nurses:**
 - 1 Audit Nurse (HCIS)
 - 1 Hospitalization Nurse (HCIS)
 - 1 Gastro Nurse (HCIS)
 - 1 Head of Nurses (HCC)
- Professor João Maia (Dermatology Coordinator of HCD);
- Sandra Gameiro (HCD Production Department);
- Joana Góis (HCC Production Department);
- Ex and actual directors of CUF's Contact Centre (Gonçalo Teixeira and Luís Espanhol).

CLIENTS' INTERVIEWS

- **10** in-depth interviews were conducted to test customer's willingness to use remote clinical services;
- **526** people answered an online survey regarding the degree of interest for specific remote clinical services;
- **116** people answered an in-person questionnaire, in the dermatology waiting rooms of HCD and HCC in order to quantify the potential demand for the teleconsultation pilot in dermatology;
- **140** people answered an online survey in order to assess their interest regarding the teleconsultation in dermatology and the direct contact to doctor services.

BRAINSTORMING SESSIONS

- **Weekly sessions** with JMS's departments:
 - Marketing Team
 - ISD Team
 - Customer Service Department
- Definition of priorities and the 3 use cases with the client;
- Discussion of teleconsultation workflows and systems;
- Perception of the main gains and costs of outbound contacts' centralization;
- Discussion regarding the feasibility of a direct contact to doctor service.

FIELD RESEARCH

- Visit to CUF's Contact Centre in Moscavide;
- Visit to hospital units:
 - HCC
 - HCIS
 - CCNSBE
 - HCD
- Visit CUF's ISD in Bobadela.
- Internal documents shared by JMS teams

WEB RESEARCH

- Studies from Consulting firms (Deloitte, McKinsey, Accenture, etc);
- INE and EU studies and publications;
- Media articles regarding healthcare sector and Telemedicine;
- Hospitals' websites;
- Analysis of JMS's annual report and website;
- Players' websites.



2. BACKGROUND

The project intends to investigate if there is a business opportunity for JMS in creating and developing a remote clinical relationship with its clients.

To properly assess the challenge proposed by JMS to the team and to figuring out how to address it, a **SCQA framework** (Situation, Complication, Question and Answer) was applied.

SITUATION

- **Mobile health** emerges as a key for transformation in the healthcare industry.
- Global healthcare providers are increasingly embracing digital trends and **heavily investing in Telemedicine**.
- Regarding Portuguese competition, **new players**, such as insurance companies and technology platforms, have been joining traditional hospitals in providing **healthcare services outside medical facilities**.
- **JMS has been taken some steps towards remote clinical services** by developing some pilot projects and internal programmes.

COMPLICATION

- There is a group of doctors and other health practitioners who might be **reluctant to use Telemedicine**;
- Safety concerns regarding patient's data sharing as patients fear that their **personal information** might be **disclosed** to third parties due to the exposed data on online networks and platforms;
- **Portuguese laws mostly support** the practice of Telemedicine, however, there are some rules to be cautious about;
- Healthcare is becoming increasingly digital however, Portugal is facing **population ageing** and some people might not have the necessary **digital literacy** to use these technologies. Moreover, many people stated that human involvement is the most important factor when it comes to healthcare.

QUESTION that JMS wants to address

Should JMS establish a remote clinical relationship with clients?

ANSWER: yes

WHY?

- JMS has a **strong and credible positioning** in the Portuguese market, as it is the largest private healthcare provider;
- A Telemedicine project is **perfectly aligned** with one of **JMS's core values**, i.e. innovation;
- Despite the current competition, there is **still space for JMS to enter** in this market;
- 73% of 486 surveyed people demonstrated **interest in using remote clinical services offered by CUF**;
- Remote clinical services are easily built upon **JMS's solid infrastructures**.

HOW?

There are three business opportunities from where JMS can create a well-defined a remote clinical relationship with clients. The company may **optimize infrastructures and systematize existing outbound services**, reinforce nurses' added value by **offering inbound services** and innovate and facilitate the **services provided by doctors through remote interactions**.

A Work Project, presented as part of the requirements for the
Award of a Master's Degree in Finance from the Nova School of Business and Economics.

CONSULTING PROJECT FOR JOSÉ DE MELLO SAÚDE:

ENHANCING REMOTE MEDICAL CARE IN THE PORTUGUESE MARKET

A CRITICAL PERSPECTIVE ON THE CLINICAL REMOTE SERVICES

Work project carried out under the supervision of:
Professor Constança Monteiro Casquinho

03-01-2020

MADALENA CACHÃO COLLARES PEREIRA | N° 34401

Abstract: The following report presents a critical perspective on how José de Mello can enhance its leadership position in the Portuguese market through clinical remote services. A market assessment was conducted to understand the habits and needs of different segments and to shortlist the most adequate and feasible remote clinical services. Aiming to assess the financial viability of the teleconsultation service, a financial and operational analysis was conducted and then, the team provided José de Mello Saúde with valuable recommendation on service implementation and technology partner.

Key words: José de Mello Saúde, Teleconsultation, Financial viability, Partner.



5. DEMAND

To understand the habits and needs of different segments, 10 people were interviewed and the conclusions of those interviews were validated through a quantitative online questionnaire done to 526 people.

QUALITATIVE RESEARCH

Ten face-to-face in-depth interviews (Appendix 2) were conducted to test customers' willingness to use remote clinical services, as well as to identify possible barriers to the adoption of these services. One can conclude that different segments value different things and they also have different needs.

STRUCTURE:

1. Target selection;
2. Direct Method – individual non-directive interview to a relevant sample.

SAMPLE DETAILS:

Gender

Female: 40%
Male: 60%

Regular CUF Clients

Yes: 70%
No: 30%

Age

16-24: 20%
25-44: 20%
45-64: 40%
>64: 20%

Technological Level

High: 60%
Low: 40%

KEY FINDINGS

1. Willingness to use remote clinical services
2. Main drivers of usage
3. Barriers to adoptions and utilization

OUTCOME: Personas

QUANTITATIVE RESEARCH

The qualitative research clearly confirmed that people believe in the benefits that remote clinical services can bring. Therefore, an **online survey** (Appendix 3) was submitted to reconfirm people's willingness to use remote clinical services and then quantify the degree of interest for specific services.

From 526 surveys answered, it was considered as **valid only 486 responses**.

STRUCTURE:

1. Choice of a convenient sample (more than 30 respondents as advised by the Marketing Team);
2. Pre-testing questionnaire (test first with internal team and with close friends/family);
3. Value-added clinical services questionnaire.

SAMPLE DETAILS:

Gender

Female: 67%
Male: 33%

Location

Urban: 96%
Rural: 4%

Household monthly income level*

Low: 20%
Medium: 56%
High: 14%
Prefer not to say: 10%

Age

16-24: 20%
25-44: 23%
45-64: 46%
>64: 11%

CUF Clients

Yes: 71%
No: 29%

*Low = < 1 200€; Medium= [1 200€; 5 000€]; High = > 5 000€

KEY FINDINGS

1. Willingness to use remote clinical services
2. Degree of interest for specific services
3. Barriers to adoptions and utilization

OUTCOME: Demand of each service

Based on the insights gathered from in-depth interviews, it was possible to characterise five personas considering the following criteria: age, priorities, technology level and lifestyle. These personas are representative of the possible users of JMS's remote clinical services.



Young People

Age: 16-24
Priorities: Sociability
Technology: Masters of technology
Lifestyle: Connected



Recently Married

Age: 25-44
Priorities: Success
Technology: Embracers of technology
Lifestyle: Entrepreneurs

Modern Adults

Age: 45-64
Priorities: Work
Technology: Digitally literate
Lifestyle: Busy



Conservative Adults

Age: 45-64
Priorities: Family
Technology: Disregarders of technology
Lifestyle: Relationship-based



Senior People

Age: +64
Priorities: Community
Technology: Strangers to technology
Lifestyle: Retired



Customers' expectations are becoming harder to meet, so JMS should customise solutions to each segment according to their individual specificities as they tend to behave differently in face of remote clinical services.






Type of customer	Tech saviness	Demands for	Position (remote clinical services)	Barriers to adoption/utilization
Young people (16-24)		<ul style="list-style-type: none"> Efficient services Accessible prices 	<ul style="list-style-type: none"> Desire for more out- of-the-box services 	"There is a lack of knowledge about the remote clinical services already offered by some hospitals"
Recently married (25-44)		<ul style="list-style-type: none"> Convenient processes Trusted professionals 	<ul style="list-style-type: none"> Open for these services 	"There is no openness from doctors to offer remote direct contact. Whenever I need to talk to the doctor, I have to speak first with an administrative, which delays the process."
Modern adults (45-64)		<ul style="list-style-type: none"> Safe services Fast services 	<ul style="list-style-type: none"> Perceived as a good opportunity 	" Existing solutions offered by some providers are not credible enough . I wish I could enjoy these services. "
Conservative Adults (45-64)		<ul style="list-style-type: none"> Personal relationship Quality services 	<ul style="list-style-type: none"> Sceptical 	"A computer system cannot properly evaluate a patient. I would only rely on a diagnosis made at distance in situations of minor diseases ."
Senior People (+64)		<ul style="list-style-type: none"> Comfort Easy access 	<ul style="list-style-type: none"> Desire for more user-friendly interfaces 	"I have some difficulties in using technology ."

Table 3 – Personas summary

MAIN FINDINGS

- **Young people** look for efficient and accessible services when choosing their healthcare provider. They also value the possibility to use modern technology to support their health.
- **Recently married people** value convenience and pay close attention to the reputation of the healthcare providers. They are receptive to modern technology, specially when it helps making their life easier.
- **Modern adults** believe in the benefits that remote clinical services can bring, such as time efficiency. However, they are still not totally confident of the reliability of the current services offered in the market.
- **Conservative adults** perceive quality of health services to be extremely related with the depth of the relationship with the healthcare provider. They fear that technology may damage the future healthcare system, as they associate technology with impersonality.
- Though **senior people** want to feel comfortable, they prioritize convenience and proximity when choosing the medical facility. Regarding digital solutions, they are not used to it as they do not have technological knowledge.

73% of all surveyed people demonstrated interest in using remote clinical services. However, they are only willing to pay for these services when partially covered by insurers.

QUESTIONNAIRE HIGHLIGHTS

- From 486 surveyed people:
 - 210 are regular CUF Clients
 - 354 are willing to use remote clinical services provided by JMS (73%)
- 181 out of 210 regular CUF clients would use CUF remote clinical services if provided;
- 63% of competitors' clients would use CUF's remote clinical services if provided;
- Of those interested in this service, 75% would pay for these services, however 82% of them would require the cost to be partially covered;
- Main reasons to reject remote clinical services: 43% feel that they lose the close relationship with doctors; 28% do not trust in the quality of these services; 13% are unaware of these services (16% already use these services or stated other reason).

The table below gives an overview of the level of interest for specific remote clinical services. JMS, as a leading healthcare provider, should meet the demand for remote clinical services. At the moment, customers are mainly looking for Direct Contact to Doctor and Follow-up services.

Age Group	#Clients	Average Level Technology	Preference for Remote Health Support	Degree of Interest (>5)				
				Teleconsultation	Follow-up	Monitoring	Symptom Analysis and Diagnose	Direct Contact to Doctor
Young people	99	4,5 /5	55%	57%	76%	71%	68%	76%
Recently Married	114	4,2 /5	61%	52%	62%	60%	53%	61%
Modern Adults	145	4,3 /5	50%	47%	61%	59%	56%	68%
Conservative Adults	80	2,7 /5	46%	33%	35%	36%	34%	46%
Senior People	48	3,4 /5	40%	31%	46%	48%	46%	54%
Total Average Degree of Interest				44%	56%	55%	51%	61%

Table 4 – Survey results

MAIN FINDINGS

- As expected, the older the people the lower the acceptance rate for remote health support.
- There is a consistency among all segments regarding the least preferred remote services: Teleconsultation.
- The segment with the lowest/highest level of technology is also the one which shows the lowest/highest adoption rate to every remote services.
- Direct Contact to Doctor represents the service with the highest total average degree of interest.

PROJECT REDEFINITION



There are 3 ambition levels from where JMS can enhance customers' satisfaction and clinical excellence. The company should create a well-defined remote clinical relationship with clients through Teleconsultations, CCC and Direct Contact to Doctor service.

BOARD'S FEEDBACK:

From a wide list of remote clinical services, within the 3 ambition levels, **the team was advised to study the feasibility of 3 specific projects** (Teleconsultation, Clinical Contact Centre and Direct Contact to Doctor), taking into account 2 criteria: expected impact and easiness of implementation.

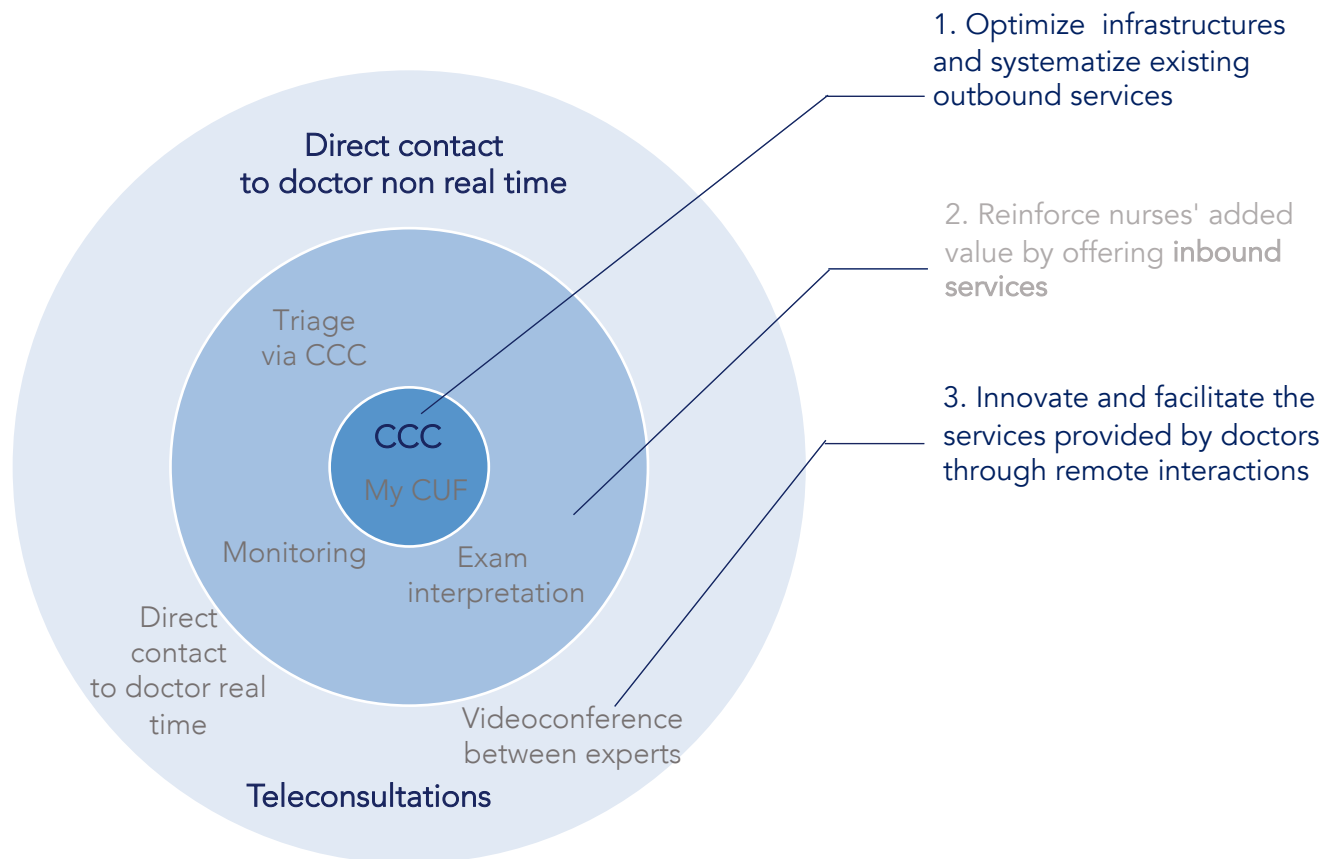
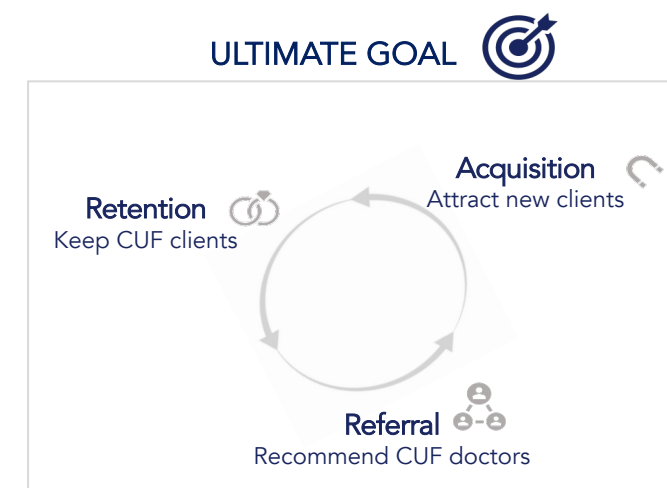


Figure 5 – Scope redefinition





6. TELECONSULTATION (PART II)



6. TELECONSULTATION
6.2. RECOMMENDATIONS
Demand & Supply

From 27 740 dermatology clients, 6 457 are potential clients, considering the percentages of interest retrieved from the survey, and only 1 937 are eligible clients. As a result, potential teleconsultations are 990, representing 6% of the total subsequent consultations of 2018.

Assumptions

- **Subsequent clients:** 40% of total clients.
- **Percentage of interest:** Weighted average between the percentage of interest of the online and hospital surveys.
- Clients who live more than 50 km from HCD, were considered to have a higher percentage of interest, as the opportunity cost is greater than the ones who live close to the hospital.
- The team spoke with a dermatologist who said that it would be reasonable to assume **30% of the total clients as eligible** for teleconsultations.
- **Potential Teleconsultations:** Only considered people who said that they would do 1 more or 2 more dermatology consultations if this service existed. People who answer the same, it was assumed that they would continue to have in-person consultations. In this way, there is no cannibalization.

Potential Demand Estimation - HCD							
Place of residence	Number of Clients (2018)	# Subsequent Clients	% of interest	Potential Clients	Potential Eligible Clients	Potential Teleconsultations	# Potential Teleconsultations w/o Cannibalisation
- less than 50 km	24 086	9 718		5 536	1 661	848	848
<16y	3 549	1 432	N/A	N/A	N/A	N/A	N/A
16-24 y	2 560	1 033	68%	702	211	126	126
25-44y	8 879	3 583	68%	2 436	731	453	453
45-64y	6 284	2 536	82%	2 079	624	268	268
>64	2 814	1 135	28%	318	95	0	0
- more than 50 km	3 654	1 474		922	277	142	142
<16y	412	166	N/A	N/A	N/A	N/A	N/A
16-24 y	431	174	70%	122	37	22	22
25-44y	1 464	591	70%	413	124	77	77
45-64y	923	372	90%	335	101	43	43
>64	424	171	30%	51	15	0	0
Total	27 740	11 193		6 457	1 937	990	990

% #teleconsultations/total subsequent consultations

Table 17 – Potential demand HCD

6%

Limitations:

- **Disregarded clients:** 433 (no information regarding place of residence or age);
- **Potential Clients:** Not considering people with less than 16 years old since they were not interviewed.

SENSITIVITY ANALYSIS

Since this analysis is a **very conservative analysis**, as a result of the above assumptions, a **sensitivity analysis was conducted** to show which percentage of eligible clients or which percentage of consultations that will turn into teleconsultations (for all the people who answered the same) must obey in order to the project be considered attractive enough. Considering the initial scenario, an increase in the percentage of consultations that will turn into teleconsultations (for all the people who answered the same), would cause important changes in the final result.

		% of consultations that will turn into teleconsultations							
		990	0%	10%	20%	30%	40%	50%	60%
% eligible clients	10%	330	396	462	527	593	659	725	
	15%	495	594	692	791	890	988	1087	
	20%	660	792	923	1055	1186	1318	1450	
	25%	825	989	1154	1318	1483	1647	1812	
	30%	990	1187	1385	1582	1780	1977	2174	
	35%	1155	1385	1615	1846	2076	2306	2537	
	40%	1320	1583	1846	2109	2373	2636	2899	

As recommended, three doctors will be chosen to participate in the pilot. In terms of agenda, each doctor will have a time slot of 1h/week, on average, but in the beginning, slots should be spread over time so that a considerable number of teleconsultations will be attained.

- Assumptions**
- Subsequent consultations / Total consultations = 52%
 - Considering a ratio of Teleconsultations / Total consultations = 6%
 - Average consultation time: 20 min
 - Doctors work 48 weeks/year

Doctor	#Consultations 2019*	# Subsequent Consultations 2019*	#Teleconsultations	Hours spent		
				Yearly	Weekly	15 days
Doctor A	5 092	2 669	169	56	1,17	2,35
Doctor B	4 110	2 155	136	45	0,95	1,90
Doctor C	2 893	1 517	96	32	0,67	1,33
Doctor D	2 783	1 459	92	31	0,64	1,28
Doctor E	2 658	1 393	88	29	0,61	1,23
Doctor F	2 544	1 334	84	28	0,59	1,17
Doctor G	2 302	1 207	76	25	0,53	1,06
Doctor H	2 215	1 161	74	25	0,51	1,02
Doctor I	2 191	1 149	73	24	0,51	1,01
Doctor J	1 609	843	53	18	0,37	0,74
Doctor K	1 608	843	53	18	0,37	0,74
Doctor L	1 462	766	49	16	0,34	0,67
Doctor M	1 441	755	48	16	0,33	0,66
Doctor N	1 369	718	45	15	0,32	0,63
Doctor O	1 298	680	43	14	0,30	0,60
Doctor P	1 036	543	34	11	0,24	0,48
Doctor Q	763	400	25	8	0,18	0,35
Doctor R	651	341	22	7	0,15	0,30
Doctor S	424	222	14	5	0,10	0,20
Doctor T	405	212	13	4	0,09	0,19
Doctor U	217	114	7	2	0,05	0,10

*As of 16 December, 2019

Table 18 – Dermatology consultations per HCD doctor

Doctors' Allocation & Agenda

- 3 doctors available 1 hour per week** (as recommended by HCD's dermatology personnel).
- Note:** it is assumed a linear distribution of teleconsultations throughout the year. However, there will be **low traction in the beginning** and doctors will not have enough teleconsultations to fill the weekly slot.
- Suggestion:** In the beginning, instead of starting with 1-hour weekly slots, or 2-hour slots every 15 days, doctors should start with **slots spread over time** to ensure that they reach a significant number of teleconsultations per slot. Slots should be placed right after periods that doctors are at the unit (e.g. early in the morning; from 13h-14h; late in the afternoon).
- Assistant's job:** Try to **gather all teleconsultations** so that there are no breaks between these appointments and the slot is filled. If, by chance, the slot is not fully occupied, the assistant should notify the doctor in the day before.
- Choice of doctors - 2 available options:**
 - 1 top performer doctor and 2 in middle range:** easier to convince junior doctors with lighter agendas; senior doctor expected to attract more clients quicker; limitations on agenda of the senior doctors;
 - 3 medium range doctors:** more flexible agendas; less concentrated clients in a single doctor so lower potential demand.

On average each doctor would give 62 teleconsultations yearly, and therefore 3 medium doctors would provide **186 consultations**.

The teleconsultation market size, in steady-state, is expected to be 199 970 clients. This number includes interested CUF clients, as well as interested non-CUF clients.

In a scenario where the pilot at the HCD runs well and the dermatology teleconsultation service is extended to all CUF units, JMS could reach a potential demand of 199 970 clients (CUF and non-CUF) in the long-run.

Considerations (Appendix 9)

- Portuguese population: 10M;
- % Portuguese population covered by JMS: 70%¹;
- % Portuguese people with health insurance: 40%¹;
- % Portuguese population that consults a dermatologist: 38% ($30\%^2 * (1+2,5\%)^{10}$) – since the source is from 10 years ago, the team assumed a CAGR equal to the % increase of dermatology CUF clients (2017-2018);
- % interest : 61%³;
- % eligible clients: 30%.

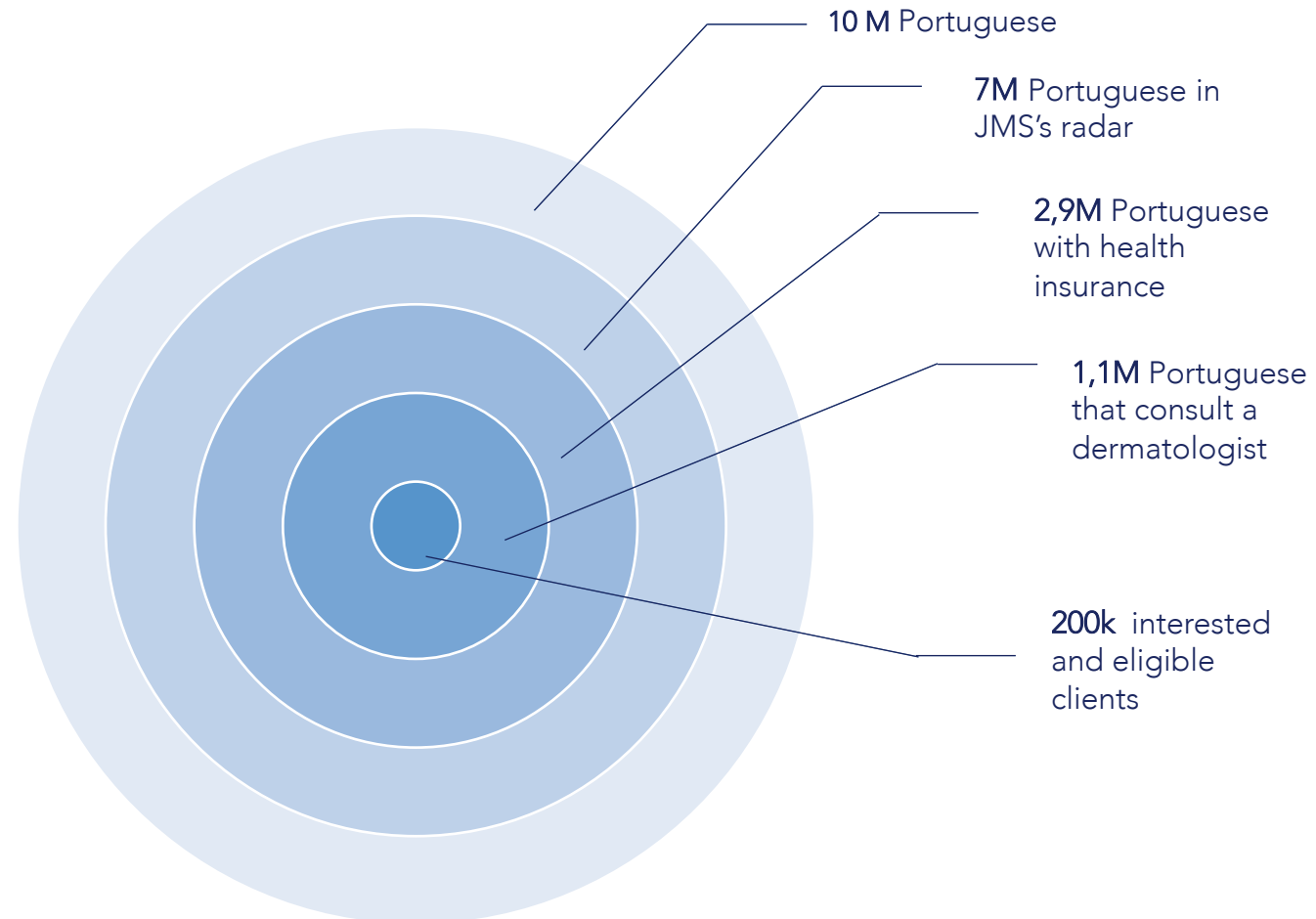


Figure 8 – Market size



6. TELECONSULTATION
6.2. RECOMMENDATIONS
P&L

The 2 scenarios below show the conditions under the existence of a business case. The first scenario is not feasible considering the estimated demand. On the other hand, the implied teleconsultations of the videoconference scenario are an achievable target.

Considerations

- Average revenue per client: 45,34€
- Doctor's fee: 30,38€
- Variable costs per unit (platform): 33,45€
- Contribution margin (platform): 11,89€
- Variable costs per unit (videoconference): 30,68€
- Contribution margin (videoconference): 14,66€

COSTS DESCRIPTION



- **IT:**
- **Network requirements and image quality:** Dedicated channel to ensure communication stability, with a fixed cost of 100€ per month (required for both videoconference and teleconsultation platforms);
- **Platform:** A license with a fixed component of 900€ per month and a variable cost of 2,25€ + IVA for each teleconsultation (as proposed by Knok last year). The set-up has an initial fixed cost of 17,5k€ (some companies charge 10k€ and others charge 25k€ – it was assumed an average);
- The project may incur in **additional costs** after reviewed by technical assistance team. In addition, other costs that are not being addressed in the business case may be required during the pilot.
- **Equipment:** Includes a chair, a dustbin, a desk, a computer, a keyboard, speakers, a web camera, a frame placed behind the doctor saying "Hospital CUF Descobertas" and two monitors, which will cost around 1 500€ (considering equipping the room from the scratch).
- **Trainings:** 1% of doctors' wages.
- **Wages:** Teleconsultation unit price assumed to be the same as in-person consultation.



BREAK-EVEN ANALYSIS

$$\text{Revenues} = \text{Costs}$$

$$\text{Break - even Point in \#teleconsultations} = \frac{\text{Fixed Costs}}{\text{Contribution Margin}}$$

P&L (Scenario 1 - Plataforma)		P&L (Scenario 2 - Videoconference software)	
Revenues	118 200 €	Revenues	8 351 €
Costs	118 200 €	Costs	8 351 €
Fixed	31 000 €	Fixed	2 700 €
Equipment	1 500 €	Equipment	1 500 €
IT	29 500 €	IT	1 200 €
Variable	87 200 €	Variable	5 651 €
IT	7 214 €	IT	0 €
Trainings	792 €	Trainings	56 €
Wages	79 194 €	Wages	5 595 €
Profit	0 €	Profit	0 €
#Implied_Teleconsultations	2 607	#Implied_Teleconsultations	184
% Additional teleconsultations*	14% 	% Additional teleconsultations*	1% 
* #additional consultation / #total subsequent consultation Table 19 - P&L considering a teleconsultation platform		* #additional consultation / #total subsequent consultation Table 20 - P&L considering a videoconference software	

- The value of 1 500€ represents the maximum cost that JMS needs to incur to have a teleconsultation room. However, if a dermatology office is used, the cost will be considerably lower. Therefore, the number of implied teleconsultations required to cover the total costs will also be lower.
- The **first scenario is not feasible**, since it is not possible to reach the number of teleconsultations required, considering the estimated demand. However, in the scenario that considers the **adoption of a videoconference software**, 3 doctors have **enough potential clients to reach the target** of implied teleconsultations.



6. TELECONSULTATION
6.2. RECOMMENDATIONS
Final Outline

Videoconference Hangouts software is regarded as the most appropriate at this phase when no integration is required. Moreover, the pilot should be run in an empty room of the hospital to take advantage of this space.

POTENTIAL PARTNERSHIPS

Teleconsultation Platforms Vs. Videoconference Software (Appendix 6.1/6.2)



- Videoconference softwares are **cheaper solutions** as there are open sources systems or in some cases, premium plans for an affordable fee. The **high degree of customisation** (company logo, cover image and colours to match brand identity) is another advantage when compared to teleconsultation platforms. In addition, it is **easier** and quicker to implement.
- Although teleconsultation platforms are not a financially viable option for the pilot, an analysis of the main benefits and features of this solution was performed as it might help JMS in the future.
- These platforms offer a **wider range of features** which improves the customer experience and reduces JMS's internal workload. Moreover, they usually provide a **superior image quality** ensuring a high level of clinical security and better diagnosis. There is also a greater **technical support** during the set-up, launch and control of the service.

AVAILABLE SPACE

Empty room Vs. Doctors' offices Vs. Room available in a specific slot

- The use of an empty room of the hospital **frees consultation rooms**, so other consultations can be offered at the same time. Also, doctors from other hospitals can perform teleconsultations there. However, with this alternative, doctors are not in the same location as in face-to-face appointments, so they need to move from their consultation room to provide teleconsultations.
- Equipping all the doctors' offices allocated to the project allows them to **easily conciliate face-to-face consultations** with teleconsultations so they would not need to move to another room. However, doctors from other hospitals will not be able to perform teleconsultations at HCD without a dedicated room for that purpose.
- The occupation of a consultation room available in a specific slot of the week only requires the **equipment and maintenance of one room** with a web camera, sound system and a monitor, which is less expensive. However, a single room would not satisfy doctors with overlapping agendas as the teleconsultation room is only available in a pre-defined period.

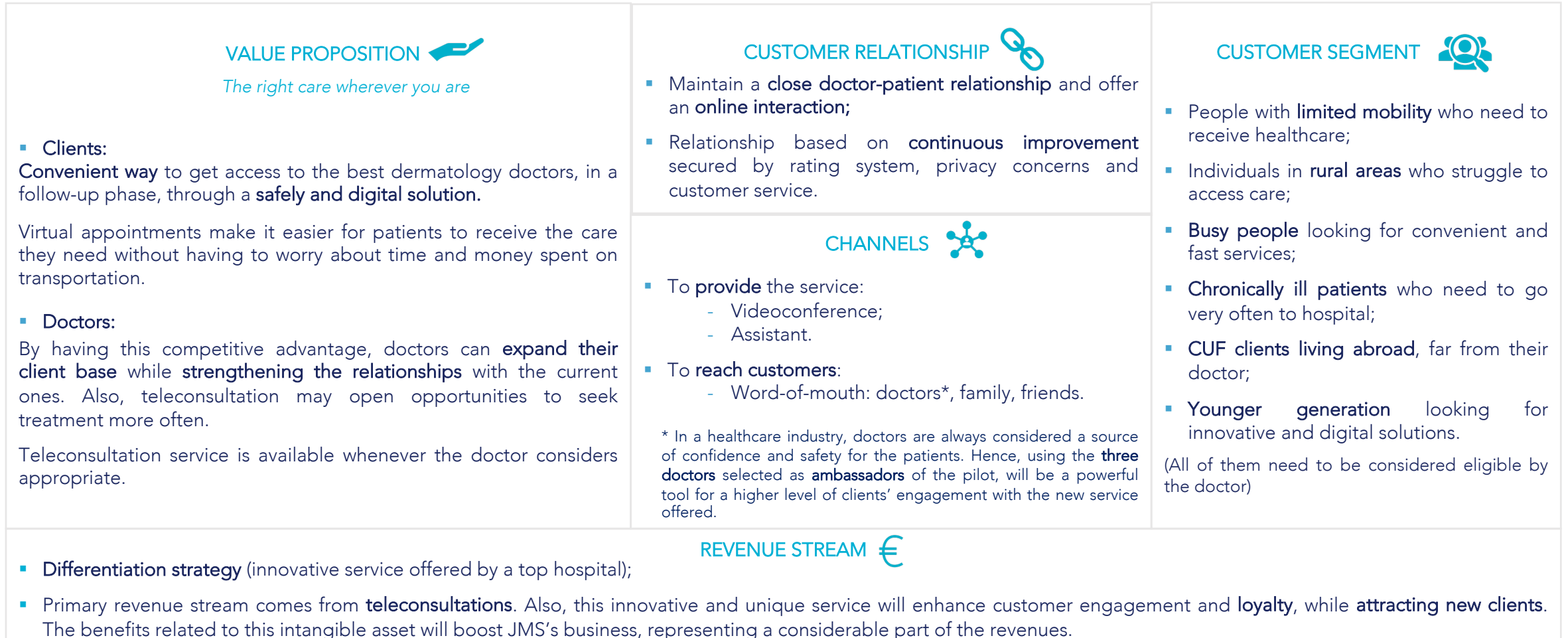
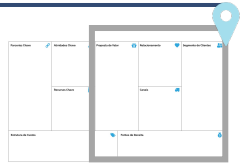
- Regarding the two potential partnerships, easiness of implementation and expected impact were the criteria used to **choose videoconference software** rather than a teleconsultation platform, since the latter is only worth if integration is required and, therefore, it is not a feasible option for the pilot.
- **Videoconference Hangouts software** is the best option for teleconsultations as it offers **safer data processing** with assured internal security and is already used by JMS.
- Regarding the space to run the pilot, an **empty room of the hospital** seems to be the most suitable solution, since it is easier to conciliate doctors' agendas and it is available to be used by other CUF's doctors.



6. TELECONSULTATION
6.2. RECOMMENDATIONS
Business Model Canvas

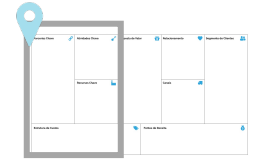
BUSINESS MODEL CANVAS - PILOT (1/2)




Teleconsultations create real value both to clients and doctors. On the clients' side, this service mainly benefits people with high time and transportation costs. On the doctors' side, they can expand their client base and enhance their customer relationship.



BUSINESS MODEL CANVAS - PILOT (2/2)

Before the pilot's implementation, there are some key activities that JMS must develop. Moreover, for the project's success it will be crucial to have the right resources and partners, that will translate in costs.



<p>KEY PARTNERS </p> <ul style="list-style-type: none"> ▪ Videoconference software that offers all the technology needed to run a pilot in dermatology when no integration is required. The team proposes the Hangouts software*; ▪ Insurance companies that are available to partially pay teleconsultations. 	<p>KEY ACTIVITIES </p> <ul style="list-style-type: none"> ▪ Evaluate all the free features offered by the technical partner and decide if it is necessary to pay for the premium plan; ▪ Ensure legal and privacy issues (e.g. complete a DPIA and request approval from the DPO team); ▪ Negotiate with insurance companies regarding the co-payment agreement; ▪ Define the eligibility criteria in more detail; ▪ Choose three doctors to be allocated to the project and set their agendas; ▪ Select an HCD assistant to be allocated to the pilot; ▪ Select an empty room of the hospital and equip it; ▪ Provide doctors with the necessary training and educate clients for the use of this service; ▪ Test the pilot with internal JMS's employees ("Alpha Testing"). Afterwards, test the pilot with a limited number of "real patients" in order to obtain feedback on the service quality ("Beta Testing").
<p>*Software already used in JMS with assured internal security and compatible with the computers of the hospitals.</p>	<p>KEY RESOURCES </p> <ul style="list-style-type: none"> ▪ Physical: Empty room in HCD fully equipped to Telemedicine (two TV screens, sound and audio system). ▪ Intellectual: Core system, videoconference software. ▪ Human: Doctors, assistant, experts on Telemedicine training, alpha testers, beta testers.

COST STRUCTURE 

- **Fixed Costs:** IT (network requirements and image quality) and equipment;
- **Variable Costs:** Trainings of medical team, doctor's wages, utilities and maintenance (disregarded as it was not possible to obtain an accurate value).

Note: In the long-term, JMS should consider additional costs:

- **Marketing and communication plan:** Offline advertising (posters, brochures, outdoors, radio, press, magazine + Vida- CUF magazine); Online advertising (Facebook; display and Google Adds; CUF's website and intranet)
- **Workshops:** JMS should advertise the teleconsultation service for doctors during workshops. In this events, the company must communicate the benefits of the teleconsultation as well as the reasons why doctors should use this differentiating service.



6. TELECONSULTATION
6.2. RECOMMENDATIONS
KPIs

KPIs (1/2)

The KPIs will be determinant to assess if the project is achieving the key goals and results. After measuring these performance indicators, the company can make the decision go/no go.

Consider:	<ul style="list-style-type: none"> ▪ KPI's should be quarterly revised and updated according to service and demand level improvements; ▪ It is crucial to provide to both doctors and JMS's board a monthly dashboard report of the KPIs, in order to assess if the teleconsultation service is achieving the pre-defined metrics.
------------------	--

Type	Indicator	Description	Formula	Target*
Demand	Adoption Rate	The adoption rate indicates the pace at which the eligible pool of clients start using the service . This KPI measures clients' level of interest regarding teleconsultation and helps JMS to evaluate if this service is achieving value. By tracking this performance indicator, the company could adapt and improve its strategy. At the beginning, it is expected a lower adoption rate of teleconsultations as clients may be resistant to this new digital solution.	$\frac{\#New\ clients\ that\ scheduled\ a\ teleconsultation}{\#Elegible\ clients}$	<ul style="list-style-type: none"> ▪ Increasing every month (excluding seasonality)
	Teleconsultation Rate	Teleconsultation rate measures the weight of teleconsultations on overall number of consultations. It is crucial that the number of performed teleconsultations correspond, at least, to the number of consultations needed to reach the break-even point.	$\frac{\#Teleconsultations\ in\ dermatology}{Total\ of\ dermatology\ consultations}$	<ul style="list-style-type: none"> ▪ Increasing every month
Quality	Net Promoter Score (NPS)	Customers should be asked to rate how likely they are to recommend the company and the service to a friend , on a scale from 0 ("highly unlikely") to 10 ("extremely likely"). Clients that give a rate of 6 or below are named Detractors, a score of 7 or 8 are called Passives, and a target of 9 or 10 are considered Promoters. This KPI is focused on measuring customer loyalty and it is used as an effective tool to improve customer experience.	$\frac{\#Promoters - \#Detractors}{Total\ number\ of\ responses}$	<ul style="list-style-type: none"> ▪ >55%¹
	Repeat Users ²	This performance indicator determines the average percentage of the number of subsequent teleconsultations generated based on the first tele-appointment , per patient. Hence, it indicates that patients are having a good experience as their problems are being addressed.	$\frac{\#Clients\ who\ scheduled\ subs.\ teleconsultations}{\#Clients\ who\ had\ first\ teleconsultations}$	<ul style="list-style-type: none"> ▪ Same % as in-person repetition rate

*Note: The targets were defined with the support of JMS's internal teams or were based on a benchmark analysis

Table 21 - KPIs

¹CUF's NPS average score | ²The repeat users' KPI should only start to be reported 7 months after the beginning of the project since, on average, a patient schedules a new consultation after 7 months.

KPIs (2/2)

Measuring and analysing a few indicators can be a way to look for possible improvements in terms of the overall quality of the service and also operating efficiency.

Type	Indicator	Description	Formula	Target*
Quality	Average Waiting Time	The average patient waiting time refers to the time that elapses between the schedule date and the teleconsultation . This KPI should be lower during the launch stage of the pilot once the adoption rate of this new service is lower.	$\frac{\text{Hours between the schedule date and the teleconsultation}}{\text{Total number of teleconsultations held}}$	▪ <1 month ¹
	Doctor's Response Time	The response time represents the length of time the patient waits until the doctor connects to the virtual visit . The lower the doctor's response time, the better the client's experience.	$\frac{\text{Total amount of time the patient waits for the doctor}}{\text{Total number of teleconsultations held}}$	▪ < or = in-person
	Doctor's Satisfaction	Doctor's Satisfaction evaluates the perception of doctors regarding the new service provided. This KPI measures the successful diagnostics done via teleconsultations by considering the number of patients who were not forward to in-person consultations after a video-appointment.	$\frac{\text{\#Successful diagnosis}}{\text{Total number of teleconsultations}}$	▪ 80% ²
	Relative Duration of Teleconsultations	Relative duration of teleconsultations measures the time a doctor spends on teleconsultations versus the time spent in in-person consultations. Doctor's should spend the same time in both tele and in-person consultations (approximately 20 minutes) in order to offer the highest quality care.	$\frac{\text{Total time on teleconsultations}}{\text{Total time on in – person consultations}}$	▪ 1
Operating Efficiency	System not Operating	Number of hours or days that the teleconsultation system was not able to provide the service due to a technical or operating problems . It is not possible to provide effective teleconsultations without the right connections. This KPI should be as low as possible.	$\frac{\text{Total hours the system is not operating}}{\text{Total hours of teleconsultations}}$	▪ Decreasing every month

Table 22 - KPIs

*Note: The targets were defined with the support of JMS's internal teams or were based on a benchmark analysis

¹Professor João Maia's average waiting time for a consultation = 1 month | ²California Telehealth Resources Centre



6. TELECONSULTATION
6.2. RECOMMENDATIONS
Implementation Plan

The teleconsultation's implementation roadmap can be divided in six phases: Design, Development, Implementation, Start-up, Control and Strategic Planning. The pilot in dermatology will run for 1 year, and after this period JMS should make a decision of go/no go.

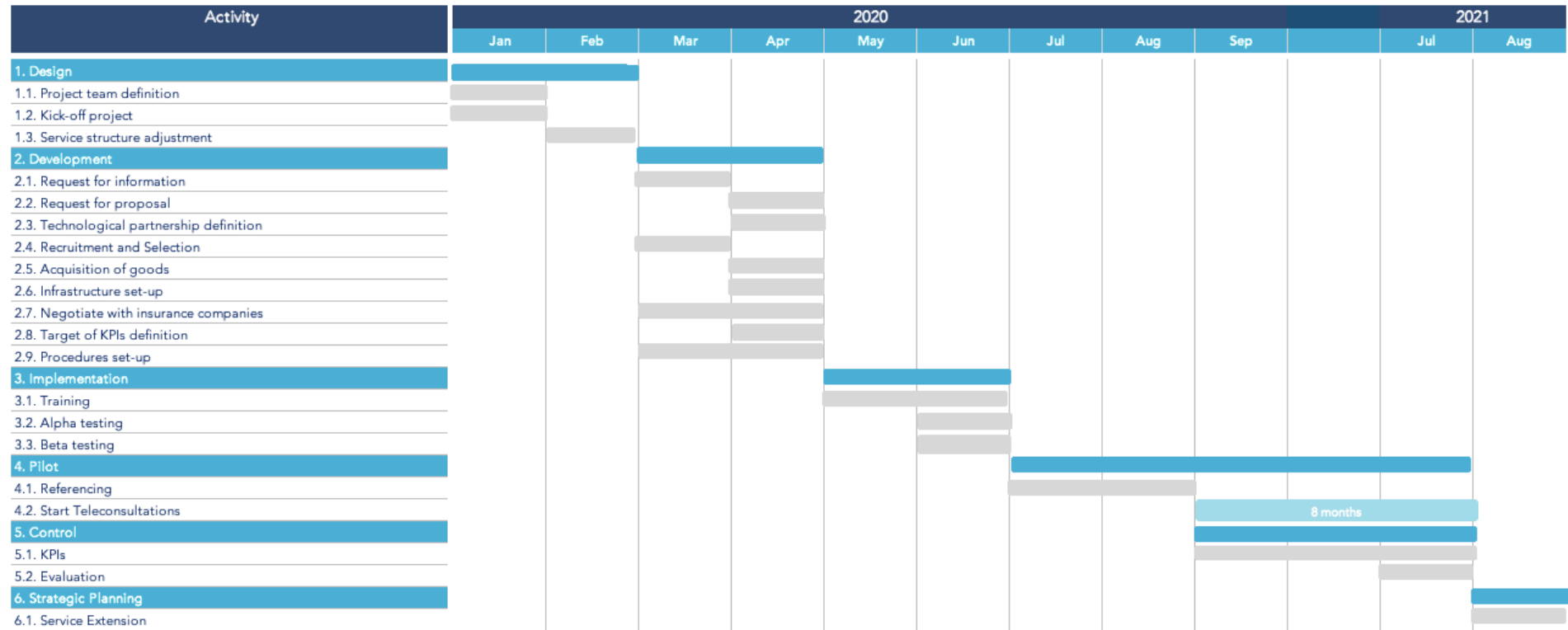


Figure 9 – Implementation plan

Considerations

- For a successful implementation plan of the teleconsultation project, a set of work activities were defined as well as the estimated time for each one and its sequence. The phases included **6 macro activities**.
- Firstly, the project supervisors will choose the definitive **design** to use for the actual execution of the project, making the necessary adjustments.
- During the **development** phase, everything that will be needed to implement the project is arranged. The technological partner is defined, doctors and assistant are selected, materials are ordered, and the set of processes is established.
- Once all the infrastructure and resources are in place, the **implementation** of a training programme to doctors and assistant, and the service testing are crucial in order to start the pilot. In an initial phase the **pilot** will only consist in a referencing period, and then teleconsultations will start running.
- Finally, the **controlling process** oversees all the tasks and metrics necessary to ensure that the project is on schedule in meeting its target. Then, it will be **evaluated** if the project is producing the required results during the months of activity.



11. INDIVIDUAL REPORTS

BELBIN ANALYSIS RESULTS

TOP 3

President: Clearly, a well-organised structure and clear objectives among all the team members, stand for what I believe to be key to achieve success in the project. As a self-disciplined person, with both communication and leadership skills, I have a natural tendency to coordinate people and tasks. Nevertheless, it is crucial to avoid being overbearing.

Monitor: The Monitor role suits me quite well as I truly enjoy to delegate and deal with high amounts of information. In fact, I find it quite easy to provide feedback in an unbiased and constructive way to the team. Additionally and throughout the project, I have always been concerned about our achievements as a team and how the milestones are being met, which also fits the monitor profile.

Strategist: As a task-centred and extroverted person, I totally enjoy being responsible for projects. In fact, I was the project manager during these 4 months. Nonetheless, it is crucial to find a balance between being determined and flexible, in order to avoid over imposing my arguments to the others.

Intellectual: I consider myself as a pragmatic and objective person, rather than a creative and imaginative one. Though I am a critical person that considers many options in the decision-making process, I tend to prefer developing existing ideas than having new ones. It is something that I should definitely work on.

Prospector: I was puzzled by this result. I do recognize that I am not a very creative person. In any case, throughout the project, I have always tried to complement my own ideas with others' (team and internal teams). Moreover, I see myself as a social person with positive attitude who is able to work under pressure and deal well with stress.

Finisher: I was also not expecting this result. Even though I am a relaxed person, I do realize that I am a very perfectionist person always double checking all the details and errors.

BOTTOM 3

PROJECT TAKEAWAYS & KEY LEARNINGS

I am very thankful for the opportunity to experience the consulting environment in one of the biggest Portuguese companies. I am very proud of my work as a consultant and with the project's results, as I truly believe that we added value to the client.

Moreover, this project at JMS provided me with an extremely steep learning curve, not only in what concerns technical skills, which implied studying and understanding overall health industry and its market trends, but also in what respects soft skills, as I believe that I have enhanced both my professional and personal skills such as leadership, team-work, communication and problem solving.

As Professor Constança Casquinho always says, it is crucial for a project's success to engage with the client and to make sure that interests and expectations are aligned. Throughout the project, the team has put special emphasis on the process of syndication, by strategically involving the internal teams and receiving weekly support from them – working with JMS rather than working for JMS.

I have also learned that communication is a powerful skill to the professional world. On the one hand, communication within the group has to be clear and respectful, while on the other hand it is key for it to be concise for the process of syndication and to get the right answers.

Last but not least, in this project I have learned more deeply to deal and work with people that have different working methods. Split the work accordingly to the strengths and weakness of each team member, while working together and helping each other, was key for the optimal project operation.