The A.I. partner in periodontal treatment and prophylaxis



Project by

ANCA LAURA CONSTANTIN

BUCHAREST, ROMANIA

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#### Introduction

### Some key insights

Periodontal disease continues to be a significant global health concern. Its forms and prevalence may vary among different population groups, as do among different socioeconomic backgrounds, but the clear sum of these statistics is that the burden of periodontal disease is still significant globally, emphasizing the need for effective preventive and therapeutic care.

**As per general data:** A systematic review underscores that between 2011 and 2020, approximately 62% of dentate adults worldwide had periodontitis, with 23,6% experiencing severe periodontitis. (1)

Research dated 2023 on a group between 19-39 years old found that gingivitis was the most prevalent periodontal condition (63,7%), followed by Periodontitis Stage III (22, 6%) (2).

### The patients today

Patients today are drawn to digital solutions in dentistry, related both to treatment, but also to information seeking.

They incline towards it for the ease in access regarding information about treatment, symptoms and preventive care, for the convenience of having a 24 hour access to information, for the personalization that digital tools can incorporate, and right now with the A.I. and digital means improving, they are even more willing to trust digital methods.

The impact of growing online literacy among patients may even shape the relationship they have with their doctor or hygienist, as it was shown that positive responses from healthcare providers to patients' online information inquiries can enhance the patient-healthcare provider relationship, while negative responses may lead to mistrust (3).

However, misinformation is of course common, even more so on platforms that are not created and verified by dentists, directed on clear guidelines and evidence-based information.

Introduction

# Today's patient-digital interaction



Let us talk about our future

# Pointing out to younger generations

Younger individuals are especially sensitive to digitalization, and healthcare makes no exception regarding the need to align with this change in order to take maximum advantage in prevention and treatment.

In order to promote preventive care and health empowerment among the young, incorporating digital platforms, with accurate, personalized, and engaging content could be an effective strategy (4).



Picture empiredental.ca/blog/how-smiling-improves-your-overall-health/

### The Need

Two main needs comprising many issues take common front and meet in the middle, and that is what Perioskoup will cover.

### The patient

The first one is regarding the patient.
What does the patient want?

This one is covering the patient's or the general individual's need for clear, accurate, verified information that could be easily accessed through a digital platform.

It is targeted towards the patient, to improve his general oral hygiene and prevent disease.

It is also targeted towards the periodontal patient who is undergoing a treatment, who has received oral health and oral hygiene recommendations, and who may feel overwhelmed and unmotivated.

The meeting
point is the need
for better oral
health, better oral
hygiene and
improved
prevention
practices

# The dentist/hygienist

This one is regarding the healthcare provider. What does the dentist/ hygienist want?

Shortly put, more time, efficiency and results.

The Need

# We shall get into more detail about the need

The most important aspect that started this idea is of course the need for improved, up to date prevention measures among the general population worldwide, consequently lowering the incidence of periodontal disease.

It is something that we see everyday in practice -patients of all ages, even in their teenage years or in their early 20's cross the doorstep of dental clinics in acute or chronic periodontal conditions- problems having most of the time the roots in the lack or gaps in prophylaxis measures and information and that could most likely be avoided through proper oral hygiene methods.

The need is also to align with the constantly evolving digital literacy and trust that patients are showing, and instead of battling against it, to use it to our advantage, to properly manage it by providing accurate, up-to-date, evidence-based recommendations on a platform that is engaging, interactive, and trust-worthy for the patients, in order to prevent and cure.

In parallel, the second need came out as a general observation from my practice and from my fellow, more experienced colleagues' clinical set-backs, namely the importance of oral hygiene measures that should be recommended and used by the patient at home throughout the course of the periodontal treatment. The importance of the proper implementation and use of these measures is well-known and studied, all throughout initial therapy and pre-/postsurgical procedures. The measures taken by the patient at home can be crucial for the proper outcome and maintenance of periodontal treatment outcomes (5)(6).

#### The Need

There are some clear issues, or set-backs, arising from that:

**One** is related to the **patient**, and that is the overwhelming amount of information, lifestyle changes and oral hygiene methods and devices that are recommended to him. For an unmotivated patient, a patient that has never used or even encountered these before, or even just for a patient who is motivated, but who has a limited amount of attention span and to try to remember everything, it could be decisive to have an at home mean of checking and going again and again over the brushing technique that he has been given, the interdental cleaning devices for each space, the medication, toothpaste, mouthwash, products and the general lifestyle changes that he now has to incorporate.

Patients respond well when they are told exactly what to do and what to use, when they are shown exactly what and how to use each cleaning device for each interdental space for instance, but that is not time effective for the dentist/ hygienist, and moreover, sometimes not effective for the patient. People are becoming less patient, their attention span is limited, and even if they understand what we show them, they might forget it by the time they reach the moment when they actually need to implement it.

This results in the lack or improper implementation of oral hygiene methods and lifestyle recommendations, consequently leading to poor treatment outcomes, belated results and healing, but also to chairside time lost for the **healthcare provider**, as he needs to constantly go over and reinforce them- that being the "positive" result, as unfortunately, the reality is that clinical practice cannot be entirely standardized and regulated, and some may be tempted to skip or give up on oral hygiene enforcement practices and check-ups for the sake of saving time-that is **the other issue**. Having a platform that mediates that and makes it easy, time-effective for the dentist/ hygienist to provide information and easier for the patient to incorporate, that fills these communication gaps, could be beneficial both for the patient and for the healthcare provider.

### **The Solution**

Merging the above mentioned needs with the changes in patient preferences and behaviour, by working with the growing importance of technology and digital innovation, having a **comprehensive app** that can be engaging for the patient, overseen and regulated by healthcare providers, that would be trusted by the public and that would also assist physicians in their treatment is a solid ground for starting to change oral hygiene behaviour and subsequently make significant strides towards the eradication of periodontal disease, and not only- caries and oral cancer prevention could prove to be an additional outcome.

#### Who would benefit from the implementation of such an app?

01

#### **Patients**

First and foremost, obviously the patients/ general public. We will dive into the details of this app hereinafter, but it's important to understand that the main beneficiary will be the population, by lowering the rate of periodontal disease and overall improving the general health, level of information and quality of life.

02

#### Healthcare providers

By gaining chair-side time, efficiency, improved outcomes of treatment, enhancing patient trust and patient-physician/ hygienist relationship.

03

#### **Governmental authorities**

An ancillary benefit is of course the improvement of oral and general health prevention among populations, aiding the already established prevention policies.

04

#### **Dental supply companies**

It is important to underscore the fact that as a consequence of enhancing oral hygiene methods, companies will also gain visibility, sales and overall usage of their products.

### **About Perioskoup**

**Perioskoup**'s purpose is to become a **comprehensive**, **interactive**, **Al operated app** that would mediate the above mentioned issues and solve the so- mentioned problems.

The general concept is quite simple, but there in simplicity usually lie the actual big changes.

Summarizing, it comes in as an **aid and mediator between the healthcare provider** and the **patient** undergoing a periodontal treatment or who simply comes for check-ups and preventive treatment.

#### **About Perioskoup**

The way that this would **work and integrate digital and A.I. assistance** is the following:

Medical data upload

After seeing the patient and deciding on a treatment plan/ checkups/postoperative care measures the clinician creates the file of the patient, which is secured and available only for him and the

healthcare provider

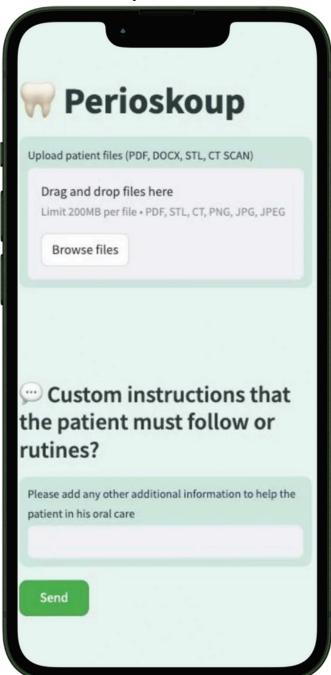
In here the clinician may upload anything, from the

general health data dental chart data

imagistic investigations: radiographs, CT scans, intraoral scan files

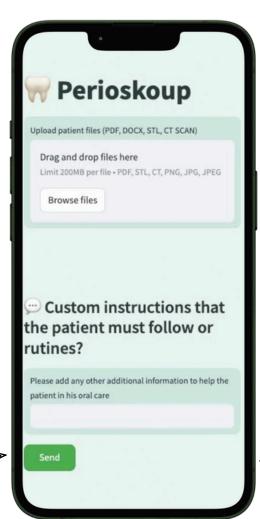
photographs

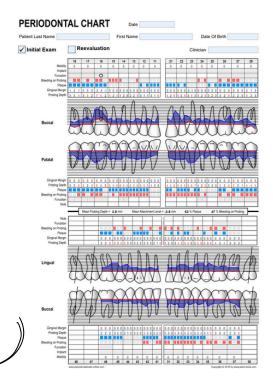
periodontal charts
treatment plans
the recommendations
he chooses for the
patient's oral hygiene/
postoperative care

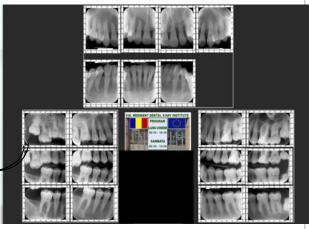


#### **About Perioskoup**











#### **About Perioskoup**

#### At home care and assistance

The patient now has a **personalized digital tool** at his disposal. He can ask anything regarding his case and recommendations. **The Al registered everything and it can be trained to respond exactly as if it were the patient's actual personalized clinician.** 

It is more likely that the patient will adhere to at home instructions if he knows exactly what and how to do it. Imagine he forgets how to use a certain technique or recommendation: it's as if he would have his dentist/ hygienist at home 24/7 to remind him, making him more likely to actually implement them and to do it correctly. The Al registered everything about that specific patient's conditions, so it can respond in accordance to that specific patient's needs, treatment plan, and it can make correlations with his general health conditions that the patient may not even think of (e.g. diabetes, cardiovascular disease).

Perioskoup is trained by the healthcare provider to respond to the patient just as if it were that specific patient's clinician.

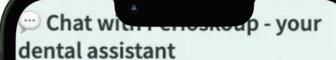
Pay attention here, though:

It can be trained to respond just like the patient's clinician meaning it may be also trained to recognize and know its limits.

When the patient asks something that may need a clinician's in person evaluation, it may be trained to tell the patient to ask that during his next appointment.

Perioskoup is meant to be a partner, a mediator during the treatment, between the clinician and patient, to save chairside time for the clinician and to make the patient more likely to adhere to the treatment and recommendations, nowhere to substitute completely the clinical evaluation or the clinician's expertise.

#### **About Perioskoup**



Describe your problem or ask your question:

I forgot how I was supposed to do the toothbrushing a

#### Ask Al

Perioskoup: No worries—it's important to get back on track, and I'm here to help!

For toothbrushing, we recommend the Bass Modified Brushing Technique. Here's a quick reminder on how to do it:

- Hold your toothbrush at a 45-degree angle to the gums.
- Gently place the bristles at the gum line where the tooth and gum meet.
- Use small, circular motions to gently brush the gum line and teeth. Focus on a few teeth at a time.
- Brush each section of your mouth: outside, inside, and chewing surfaces of all the teeth.
- Don't forget to also brush your tongue to help freshen your breath.

Take your time to brush for **about 2 minutes** in total, making sure to cover all areas of your mouth. If you feel any discomfort, reduce the pressure and try being as gentle as possible.

Let me know if you have any questions about this chnique or need additional tips! Perioskoup specifically
recommended the Bass modified
technique
because that is what the clinician
recommended for this specific

The AI may learn from pictures

patient.

and scans that the patient has some sensitive/

inflamed papilae for example, and it can specifically direct the patient to take care in those specific places.

#### **About Perioskoup**



🤠 Patient: Hi, Skoup

Patient: Hi, Skoup

Perioskoup: Hello! How are you doing today? If there's anything specific you'd like to discuss or ask about your dental care, feel free to let me know. I'm here to help!

Patient: I forgot how I was supposed to do the toothbrushing and for how long.

Perioskoup: No worries—it's important to get back on track, and I'm here to help!

For toothbrushing, we recommend the Bass Modified Brushing Technique. Here's a quick reminder on how to do it:

- Hold your toothbrush at a 45-degree angle to the gums.
- Gently place the bristles at the gum line where the tooth and gum meet.
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Take your time to brush for **about 2 minutes** in total, making sure to cover all areas of your mouth. If you feel any discomfort, reduce the pressure and try

Chat history is kept and can only be seen by the patient

#### **About Perioskoup**

### Chat with the p - your dental assistant

Describe your problem or ask your question:

My gums bleed sometimes, what could it be?

Ask Al

Perioskoup: Bleeding gums can be a common issue and are often a sign of gum inflammation or gingivitis, which is often caused by plaque build-up along the gumline. Given your conditions, such as diabetes and smoking, these factors can increase your risk and contribute to the problem.

Here's what you can do to help manage this:

- Brushing Technique: Use the Bass Modified Brushing Technique with gentle, small circular motions to clean effectively without irritating your gums.
- Interdental Cleaning: Incorporate the use of an interdental brush, specifically size 07, for cleaning between your upper left central and lateral incisor. This helps reach areas that your toothbrush might miss.
- Mouthwash Routine: Use a mouthwash recommended for gum health as part of your daily routine.
- Regular Dental Check-ups: Keep up with dental visits
   for professional cleanings and to address any

Perioskoup made the correlation with the patient's smoking habit and diabetes from his medical files, without the patient specifically asking that.

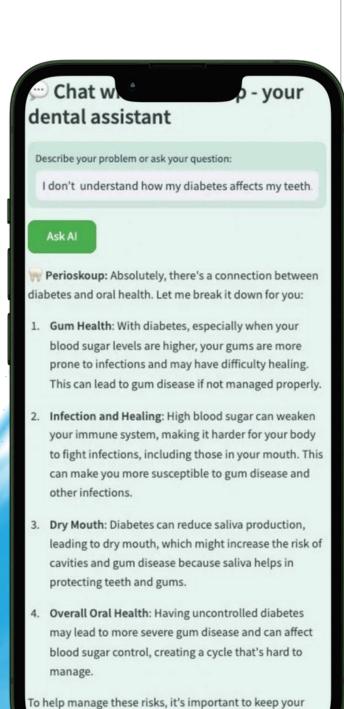
Most patients wouldn't make the correlation and know to look into

Most patients wouldn't make the correlation and know to look into these conditions, so it may redirect them towards asking other questions and watching their ovearall health in a holistic way.

#### **About Perioskoup**

The patient can look then into more detail, he can ask of course more information, general information and Perioskoup may also provide lifestyle changes and tips to help manage his overall general and oral health.

Everything is connected.



labetes well-controlled, along with a consistent oral care

#### **About Perioskoup**

#### Next steps already?

Technology is advancing at light-speed, and we have to stay informed and keep up with it. *Microsoft* has just launched, March 3rd, the *Microsoft Dragon Copilot*, the first AI assistant for clinical workflow that brings together the trusted natural language voice dictation capabilities of DMO with the ambient listening capabilities of DAX, finetuned generative AI and healthcare-adapted safeguards (7).

By taking advantage of the *multilanguage ambient note creation*, automated tasks and multilanguage support, personalized formatting, natural language dictation capabilities, speech memos, editing, customized texts, templates, Al prompts capabilities we may be able to integrate this as well into the clinical workflow, with *Perioskoup*, by enabling the clinician to automatically register the Periodontal Charts, for instance, by voice-action, making it more time efficient and reliable.

Currently available in the U.S. and Canada, it is spreading in Europe too, from U.K., to France and the Netherlands, and in the future we may be able to include even more options into *Perioskoup*, making it an essential tool both in treatment and management of periodontal patients, but also in increasing awareness and supporting preventive measures.

Al can be trained to respond in any language as well, so it is easy to incorporate the app on an international scale.

#### **About Perioskoup**

### The name?

Let us quickly go over and break down the reasoning behind the choice of the name. **Why Perioskoup**?

The name is composed of *perio*- quite straightforward-related to *periodontium/ periodontology* 

and -skoup- from the greek  $\sigma \kappa o u \pi i \zeta \omega$  (skoupizo), meaning to sweep; wipe; clean. We are essentially sort of sweeping and cleaning the oral cavity, are we not?

Regardless of the meaning behind it, it sounds different so it **raises curiosity**, it is **short**, **attention-grabbing**, **friendly** and **easy to remember**. All of these details are important when trying to develop and make people get use out of a product. It's not only about the product itself most of the time, it's also about making it engaging and creating a story and meaning around it. That holds true for everything in life, after all; and the idea is to bring humanity, personality to it, creating a **bond and reliance between the patient and the healthcare providers**, **supply companies**, **and system**, overall. People look for connection and trust.



### The Market

The market is **wide-spread**: from young **patients** in their teenage years to older individuals, as more and more of them are making use out of technology and know how to use it. Patients want to be **involved**: in prevention, in choosing treatment alternatives. **Moreover**, they are attracted by the possibility of avoiding other costly dental treatments.

By **engaging** them into the outcome of their oral health they gain a **sense of trust** and **feeling of control**-this is **addressing the market**, by speculating basic human needs.

**Healthcare providers** are included as well here, as the **A.I. function helps them gain time**, **efficiency**, and builds a bridge between them and their patients.

All areas of dentistry are integrating digital solutions for **saving chair-side time**, make treatment outcomes more **predictable**, and the periodontology field, with respect to the preventive segment, should make no exception.

It can also help the clinician whose practice in not targeted towards periodontal care, encouraging them to make proper, personalized oral hygiene recommendations, by providing an easy digital tool for that.

Additionally, it may **target and engage dental suppliers** to get **involved** and gain **visibility** both among the public and healthcare providers.

We may even target **Governmental Healthcare Organizations**, to **assist** them in raising **oral prophylaxis measures and campaigns**.









GOVERNMENTAL ORGANIZATIONS

HEALTHCARE PROVIDERS

The Market

### Competitors

What are we bringing to the customer? And how are we contributing to innovation?

There are many dental apps out there, as a **direct consequence of the increased digital engagement of the population right now**. Very useful apps, some targeted towards the patient (such as apps that connect to the electric toothbrush's system and monitor its use-e.g. **OralB**, **quip**) or that compress some general oral health advice (e.g. **MyDentist**); others are targeted towards the clinician- such as apps that assist in periodontal diagnosis (e.g. **PerioCalc**).

Kriss is targeted towards the healthcare provider, whereas **Perioskoup** is made for the patient and targeted towards both parties. **Dental Companion** is targeted towards the clinics, so is **Dental ChatBot and a number of other chatbots and AI tools that assist dental clinics'** workflow.

Unlike *Kells*, *Perioskoup* is directed towards the specific patient's periodontal treatment, it is a companion along the treatment, assisting the clinician and patient at the same time, so there is space in the market for both.

Perioskoup is the bridge between patients and us, healthcare providers. It targets both parties, it benefits both and unites them. It comprises prevention, A.I. assistance to actively target overall oral hygiene in a personalized, engaging way, it helps the clinician monitor and get involved in the patient's oral hygiene evolution and it gets dental suppliers involved, too.



Picture provided by Canva design template

### Business plan

- I. Costs
- II. Financing
- III. Cost for customer and monetization
- IV. S.W.O.T analysis
- V. Spreading the word



Imagine a world where patients can get instant, personalised dental advice right from their phones. No waiting times, no confusion—just clear, actionable guidance. That's the future we are building.

But let's be real—building this isn't easy. It takes expertise, time, and money.

#### I. Costs

There are two options here: to **do it in-house or partner with an AI tech agency**. If we go **in-house**, we're looking at **over €500,000** a year just for **maintenance**. That's before even starting the development, which would cost even more. Plus, we would have to deal with **hiring**, **training**, **and managing a team**, which would take **additional costs and time**, which overall nowadays translates also in additional costs.

#### **Development Cost Breakdown**

The initial development cost is estimated between €319,500 and €477,000, reflecting the high complexity of integrating AI into a healthcare application. Here's a detailed breakdown:

Component	Cost Range (EUR)	Explanation
App Development (iOS & Android)	€135,000 - €180,000	Developing native apps for both platforms, potentially using cross- platform frameworks like React Native for cost efficiency.
Al Chatbot Development	€90,000 - €135,000	Includes NLP, ML, and possibly LLMs for personalized responses, with costs higher due to healthcare specificity.
API Development	€40,500 - €67,500	Secure API for clinic data and chatbot interactions, aligning with healthcare backend development costs.
Knowledge Base System	€27,000 - €54,000	System for clinics to upload patient data, requiring user-friendly interfaces and security.
Integration and Testing	€27,000 - €40,500	Ensures all components work together, with rigorous testing for security and compliance.

All data is kindly provided by the tech agency Smart Consulting Al

#### **Estimated Annual Cost**

For a maintenance-focused team (reduced from initial development):

#### • Team Composition:

• 2 Full-Stack Developers: €65,000 each = €130,000

1 AI/ML Engineer: €90,000 = €90,000
1 Project Manager: €75,000 = €75,000
1 QA Engineer: €55,000 = €55,000

Total Salaries: €350,000
 Overhead (25%): €87,500

Total Annual Team Cost: €437,500
Plus Operational Costs: €68,510
Total Annual Cost: €506,010

For initial development, a larger team (e.g., 3 developers, 2 Al engineers) could cost €518,750 for the first year, as calculated earlier, making in-house development even more expensive upfront.

#### Comparison Over Time

Over 5 years, outsourcing costs €1,012,500, while in-house costs €1,743,750, saving €731,250 with outsourcing, as detailed in the calculations above. This is based on a midpoint development cost of €400.000 and standard maintenance fees.

Annual Maintenance Cost: €63,900 to €95,400 (20% of €319,500 to €477,000).

#### What's Included:

- · Regular software updates and bug fixes.
- · Security patches to ensure compliance with GDPR and HIPAA.
- Performance optimization and compatibility with new OS versions.
- · Al model retraining and improvement, e.g., quarterly updates to maintain accuracy.
- User support via email and phone for end-users and clinic staff.
- Monitoring and logging for proactive issue detection.
- · Backup and disaster recovery plans.

#### **Operational Costs**

Operational costs are necessary to keep the app running and include:

Component	Cost Range (EUR)	Explanation
Cloud Hosting	€1,080 - €5,400	Mid-tier plans on AWS or Azure, depending on usage, based on Al App Development Costs Guide.
Al API Costs	€10,800 - €54,000	Depends on chatbot usage, estimated at \$1,000-\$5,000/month, from Cost to Build Al Chatbot.
App Store Fees	~ <b>€</b> 110	Apple Developer Program (€99/year) and Google Play (€25 one-time).
Other Costs (Security, Monitoring)	€4,500 - €9,000	Includes security monitoring and compliance checks, from Healthcare App Development Cost.

Business Plan I.Costs

### **The Solution for Perioskoup**

I had the opportunity to meet an **uprising AI and general tech specialized team** and to discuss the perspectives of **Perioskoup**. Their general prices for developing the app range from €319,500 to €477,000, with annual maintenance at €63,900 to €95,400. The benefits of it would be:

Cost Savings: over €700,000 over five years compared to in-house.

**Expertise:** a team that knows Al and general tech inside out.

**Speed**: the **launch** of the app would be faster and so the **growth** of the business. **Peace of Mind**: they handle everything—**development**, **maintenance**, **operations**.

That's a fraction of the cost, for sure, but let's be honest, we are just looking at numbers. That can be called a business potential analysis, business fantasy, but not a plan, and certainly nowhere near an action plan, so we have come up with a more feasible solution. **To partner up with equal shares.** 

If Perioskoup had wings to fly, it had to grow some feet to ground as well.





https://smart-consulting.ai/

Business Plan I.Costs

# The reality Growing together

I have met this team formed of two fellow romanian tech engineers, one of which based in the UK, through a mutual acquaintance by complete chance whilst I was searching for a feasible solution to build Perioskoup.

Maybe by chance, but I think it was just as it was meant to be, because the two of them are just starting out their company together and they were also on the hunt for ideas, projects, business fields and opportunities to just launch on the market as an AI tech business and to grow their company.

The three of us are all eager to create, build and grow.

We have discussed the idea, put together my healthcare expertise with their tech, AI and business administration knowledge and contoured the app as I have presented above.

Now that we are a team, the general cost for development will drop dramatically, as the team would develop the software and the cost would only entail the monthly operational fees of the app to cover- which in the beginning would be *up to 1000 euro/month*- host/store fees.

Lowering so much the initial costs of course is incredible, it makes starting up a lot easier and provides comfort. But it provides something else, something that perfectly mirrors Perioskoup's philosophy- **team work**, **partnership**, **trust**. It enables **Perioskoup** to have both the **healthcare** and the **Al tech expertise** at its **core**. Something that no subcontractor built company could offer- because that is the underlying principle guiding the business approach of what could be called *skin in the game(8)*-when both parties involved at its core have the same gains and lost perspectives- something shifts: the involvement, the growth, the dedication, the accountability.

All business parties win.

Just like all Perioskoup beneficiary parties do.

#### **Business Plan**

### **II. Financing**

We have touched on **how to get it started** and how we got **most of the initial** costs out of the way.

But some **financial boost** along the way could certainly help to make the business **scalable**. Some examples of investors who may find interest in this field could be:

#### I. Healthcare Venture Capital

Venture Capital firms specializing in healthcare and wellness are typically very interested in innovative solutions that improve health outcomes and reduce healthcare costs, especially in areas like preventive care (e.g. HealthCap,Venrock HealthCare, Sequoia Capital-Healthcare arm).

#### **II. Angel investors**

Investors that look for innovative ideas that they are passionate about- and Perioskoup provides healthcare, social impact and tech to attract them.

#### **III. Corporate Investors**

Corporations specialized in dental care, dental supply companies can have a lot to gain from this product, so their interest to invest in it can be of great importance.



#### Business Plan II.Financing

#### IV. Government grants and Health-focused foundations

Governments and non-profit organizations are increasingly supporting preventative care initiatives through grants and funding programs, that can reduce the burden of disease and healthcare costs (e.g. NIH, CDC, WHO).

#### V. European Union Funding Opportunities

There are several funding programs that can accustom Perioskoup- that entails all healthcare, technology, AI, innovation and preventative fields. Perioskoup is lined with the EU standards and goals, so it may have the potential to gather EU funds (e.g. EU4Health Programme, European Regional Development Fund, European Innovation Council, Digital Europe Programme).



**Business Plan** 

# III. Cost for customer and monetization

The goal of Perioskoup is **to make the use of the app free for the patients**-it is developed first of all **for them**, and **business-wise**, it is more likely thay the app will actually be **used** that way.

So where does the money come from to sustain it?

#### It's always best to have more resources:

- I. Dental clinics subscription model
- II. Dental companies affiliate product partnerships
- III. In-app commercials



#### **Business Plan**

#### III. Cost for customer and monetization

#### I. Dental clinics subscription model

**Following** other Apps monetization models (e.g. iStoma, Smilecloud, MedSoft,)-clinics will pay a monthly/yearly subscription following a 30-day free trial.

By adding a digital tool like this, clinics not only lower chairside time, gain time and increased results, but may also engage over time with more patients, as they add something different to their treatment and features that may offer. The app can be adapted to be used by general practitioners too, to engage patients in good oral hygiene and prevention practices, spreading its use.

#### **Subscription Model for Perioskoup**

Description: Clinics pay a recurring monthly or annual fee to access the platform, which includes the API, app for their patients, and the ability to manage their knowledge base.

#### Pricing Structure:

- Tiered pricing based on clinic size (number of patients):
- Small clinic (up to 100 patients): €50/month
- Medium clinic (101-500 patients): €100/month
- Large clinic (501-1000 patients): €200/month
- Extra large (1001+ patients): Custom pricing

Initial setup fee of €500 per clinic for onboarding and integration.

**Rationale**: This model aligns with the app's value proposition for clinics, which benefits from enhanced patient engagement and loyalty. It ensures a steady revenue stream and is scalable as more clinics adopt the platform. Similar Al dental apps, such as VideaHealth: The Dental Al Trusted by Dentists and DSOs and KELLS: Al-powered Personal Dental Companion, use subscription models, supporting this approach.

**Free Trial**: Offering a 30-day free trial can encourage adoption by allowing clinics to test the platform's benefits before committing.

#### **Business Plan**

#### III. Cost for customer and monetization

#### **Free App for Patients**

Description: Patients can download and use the app for free, accessing personalized advice based on their clinic's knowledge base.

**Rationale**: Keeping the app free for patients maximizes usage, which benefits clinics by improving patient satisfaction and engagement. This aligns with the strategy of driving clinic subscriptions, as clinics can offer the app as a value-added service. Research from How to Monetize Mobile Healthcare Apps - Health Works Collective (<a href="https://www.healthworkscollective.com/monetize-mobile-healthcare-apps/">https://www.healthworkscollective.com/monetize-mobile-healthcare-apps/</a>) suggests patients often prefer free basic features, supporting this approach.

#### **Optional Premium Features for Clinics**

Description: Offer advanced features at an additional cost, such as: Analytics and reporting on patient engagement (e.g., €50/month). Integration with other clinic management software (priced based on complexity).

**Rationale**: Larger clinics or those seeking deeper insights may be willing to pay extra, enhancing revenue potential. This is supported by Mobile app monetization strategy: 9 models to choose from, which highlights upselling as a viable strategy.

#### **Revenue Potential and Cost Considerations**

Revenue Example: With 100 clinics subscribing at an average of  $\le$ 100/month, monthly revenue is  $\le$ 10,000, or  $\le$ 120,000 annually. This exceeds estimated maintenance costs ( $\le$ 63,900- $\le$ 95,400 annually, or  $\le$ 5,325- $\le$ 7,950/month), leaving room for profit, as calculated in previous analyses.

**Scalability**: As more clinics join, revenue grows without significant additional costs, making it sustainable. Tiered pricing ensures larger clinics contribute more, reflecting their greater usage.

**Initial Setup Fee**: The €500 setup fee per clinic provides upfront revenue, aiding cash flow, especially in early stages.

#### **Business Plan**

#### III. Cost for customer and monetization

#### Revenue and pricing breakdown

Number of Users	Price (€)	
0 – 50 users	250 €	
51 – 100 users	450 €	
101 – 250 users	1000 €	
> 250 users	Custom	

#### ★ Calculation Explanation:

The pricing was calculated considering an average equivalent cost of 5 € per user for the first range. Out of this, 2 € represents operational costs and 3 € is estimated profit per user.

#### P Impact Explanation:

The calculated impact represents the potential cost savings per user, based on time saved from consultations:

- Minimum savings (20€ per user per month):
   Equivalent to saving 20 minutes from a 1-hour consultation, assuming the consultation costs 60€ per hour.
- Maximum savings (60€ per user per month):
   Equivalent to avoiding three consultations per month per user.

This range reflects the efficiency and reduced consultation needs brought by the app.

Number of Users	Estimated Monthly Savings (€)	Estimated Annual Savings (€	
0 – 50 users	1,000 € - 3,000 €	12,000 € - 36,000 €	
51 – 100 users	1,020 € - 6,000 €	12,240 € - 72,000 €	
101 – 250 users	2,020 € - 15,000 €	24,240 € - 180,000 €	
> 250 users Custom Calculation		Custom Calculation	

Business Plan

III. Cost for customer and monetization

#### II. Dental companies affiliate product partnerships

Seizing the model of paid partnerships- the AI may recommend a certain product or brand to a patient (e.g. to the question what electric toothbrush do you recommend?, the first example may be OralB iO). This can increase visibility and sales, hence the opportunities of dental suppliers to invest in it.

#### III. In app commercials

Dental suppliers and companies may pay to have their commercials appear in the app-on the basis that their products would become visible both for the patients and healthcare providers-on a platform on which the engagement for oral health is extremely high.

#### IV. Premium features subscription

Additional revenue may come from making a premium subscription for the patients as well. Our key point, stated earlier, that the app is first of all for the patient and should be free for him stands still. **Knowledge should always remain free**.

But following the model of apps like *Duolingo*, as **knowledge remains free**, we can add a subscription model for patients who **don't want to get interrupted by commercials.** 

And speaking of *Duolingo*, there is a great *TedTalk* given by its developer, in which he calls the app, to paraphrase him, a *Robin Hood of knowledge*. *Taking money from people who have it in order to provide knowledge to those who don't*.

Let us try to make Perioskoup the Robin Hood of oral care and prevention.

Strengths

Weaknesses

**Business Plan** 

Opportunities

Threats

### IV. S.W.O.T Analysis

Before going into business it's always a good idea to make a S.W.O.T. analysis and objectively visualize the strengths and opportunities for growth in order to take advantage of them, but more importantly to predict the possible threats and weaknesses, in order to be prepared for them.

We have tackled the strengths and benefits of Perioskoup for sure in this presentation, so we will mainly focus here on the possible shortcomings that we may face.

### **Strengths**

The app tackles issues and needs of different beneficiaries: patients, healthcare providers, medical supply companies, and by extension governmental organizations.

### Weaknesses As any other dia

As any other digital subscription, it adds additional costs for clinics-that could be deducted by increasing slightly the service costs, but as a result making the patient pay more for the treatment. There we could try to add a clause in the subscription model for clinics of capping the subsequent price increase for the patient if they choose to do so.

Business Plan

IV. S.W.O.T Analysis

### 03

#### **Opportunities**

AI can speak any language, so it's a great opportunity to gain visibility in any country of the world and for a widespread public. Moreover, as it works in the Periodontology field, it could be trained to accommodate the necessities of other dental specializations in the future and to add on to its features to assist both the clinician in his diagnostic and treatment management and the patient on his journey to an overall healthy oral cavity.

### 04

#### **Threats**

One threat that pops up is the fact that as the project might be growing and would need more people in tech assistance, finding and training more AI specialized tech engineers could be a challenge.

But possibly the most important aspect that we have to prepare for is of course the GDPR, data security and medical files security of the patient. We are uploading medical files, diagnostics, treatments and imagistic investigations of the patient on the app. And data security is a top priority for Perioskoup for which we have come up with solutions, namely:

- to not upload personal data informationthe patient will log in using a token
- 2. anonymous medical data, questions and diagnosis.
  - 3. SOC 2 compliance enforcement

Business Plan

IV. S.W.O.T Analysis

### What is SOC 2 compliance?

I am nowhere near a tech engineer either, that's why it's important that I have partnered up with two very good ones, therefore I owe them the credit for all the technical insights. So what is SOC 2 and do we really need it?

**SOC 2 (System and Organization Controls 2)** compliance is a set of standards designed to help organizations securely manage and protect data, particularly when they handle sensitive customer information. It's most commonly relevant for service organizations that store or process data on behalf of their customers, like SaaS (Software as a Service) companies, cloud providers, or other tech firms.

#### SOC 2 compliance is based on five "Trust Service Criteria" (TSC):

**Security** – Protection against unauthorized access (both physical and logical).

**Availability** – Ensuring the system is available for operation and use as agreed upon or required.

**Processing Integrity** – Ensuring that systems process data accurately, completely, and in a timely manner.

**Confidentiality** – Protecting sensitive data from unauthorized disclosure.

**Privacy** – Handling personal information according to the organization's privacy policies and applicable laws. To become SOC 2 compliant, companies must undergo an audit by a third-party firm. There are two types of SOC 2 reports:

**Type I**: This assesses the design of an organization's controls at a specific point in time.

**Type II:** This assesses how effectively those controls are operating over a period (typically 6 months or more).

SOC 2 compliance is important because it demonstrates to customers and partners that an organization is serious about data security and privacy, helping to build trust and ensure that best practices are followed in managing sensitive information.

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What is SOC 2 compliance?



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Third- party companies like *Vanta* for instance make this process easy to incorporate.

Though the reality is that legally, if we keep the data anonymous we don't need the SOC 2 compliance, we are prepared to apply if there's a need to do so, to keep Perioskoup as safe as possible.

#### Do You Need SOC 2 or ISO 27001?

- Legal Necessity: No, if the data remains anonymized and you don't process identifiable information. Neither standard is legally mandated for anonymized data alone, as privacy laws don't apply.
- Client Expectations: Possibly, depending on your market. In North America, SOC 2 is often a vendor requirement for SaaS-like services, even with anonymized data, due to its focus on operational security (e.g., availability, processing integrity). In Europe or globally, ISO 27001 might be preferred for its international credibility.
- Business Value: Yes, optionally, for trust and competitiveness. A SOC 2 report or ISO 27001 certification signals robust security practices, which could differentiate you from competitors, especially if clinics use your app as a selling point to patients.

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You likely don't *need* SOC 2 or ISO 27001 for legal compliance with anonymized data, but pursuing one could be strategic:

- Assess Client Needs: Ask your client (the dentists/clinics) if they require either standard.
   Many won't care if data is anonymized, but some might expect SOC 2 in the US or ISO 27001 elsewhere.
- Start with SOC 2 Type 1: If targeting North America, it's quicker, cheaper, and widely accepted, covering security and availability relevant even for anonymized workflows.
- 3. **Consider Future Scope**: If you might handle identifiable data later, ISO 27001's broader ISMS could be a better long-term investment.
- Basic Security Anyway: Implement core controls (e.g., secure API, authentication) regardless of certification, as trust hinges on perceived reliability.

An unexpected detail: anonymized data can still carry ethical or contractual weight—clinics might want assurances you won't attempt re-identification, making a lightweight compliance step like SOC 2 Type 1 a smart middle ground.

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And yes, it comes with **additional costs**, so we are keeping that in mind as we think of the **investment and business plan**, if we may need to do it.

#### **Practical Considerations**

- SOC 2: A Type 1 report (point-in-time) is faster (45 days, ~€10,000-€20,000) and might suffice for initial client reassurance in the US. Type 2 (6-12 months, higher cost) offers more depth but may be overkill for anonymized data.
- ISO 27001: Certification (2 months to 2 years, €15,000-€40,000) is more rigorous and timeconsuming, better for long-term global expansion but less urgent for your current scope.
- Risks: Even anonymized data can pose risks if mishandled (e.g., re-identification attempts by third parties). Basic security (e.g., encryption, access controls) is wise, and compliance could formalize this.

**Business Plan** 

V. Spreading the word

Developing and launching is great. But how do we make the app visible and determine people to actually use it?

There are a couple of ways to do that:



More and more people are engaged and active on social media platforms- this can be used as an advantage to reach out to healthcare professionals, patients and supply companies.

#### II. Trainer network model and ambassadors

Utilizing the model of other apps such as *Smilecloud*, by engaging and training a couple of key, regional healthcare providers, they may act not only as ambassadors and promoters of the app, but also by trainers, to help other colleagues get hold of and utilize the app with their patients.

#### III. Increasing visibility through organizations

Health related organizations such as *EFP* or *WHO* may help make the project visible. It may also provide credibility and confidence, both to the healthcare community and to the patient.

#### IV. Spreading the word through congresses and courses

Another good way of reaching out to the healthcare community are events, such as a congress, as is *Europerio*, but also through courses, as more and more clinicians are sharing their experience and knowledge through such means and platforms. If they use it, like it and see its potential they may increase its visibility through their platforms.

### Some final thoughts

An end point to periodontal disease or a starting point for us, dental professionals?

Let us get a little personal. After all, this is what *Perioskoup* is proclaiming- giving life and humanity through a digital tool.

This project finds its roots in a realisation that struck me as a dentist, as I find myself just in the beginning of my career. I have just finished University last year and I am currently undergoing my Periodontology Postgraduate Programme, during which naturally, I want to learn and work as much as possible, driven by a fiery enthusiasm that embeds all of us, newcomers. And frankly, I am able to see many patients with different pathologies, given most of the time as a consequence of the lack of knowledge, misinformation and preventive care gaps that exist among the system.

Naturally, I spent time wishing to have many patients to treat, to see as much as possible, to work as much as possible- entirely understandable and relatable- but isn't wishing to have so many patients to treat, almost equivalent to indirectly wishing that more people just like us would suffer from periodontal disease, in order to see those patients?

And what sort of wish is that?

There will never be a shortage of need for dental care. As essayist and risk analyst N. N. Taleb very pragmatically tackled the issue, dentistry is and will always be an *antifragile* profession. It doesn't bend, nor does it get affected easily by big breakthroughs or unexpected events(9)- which lets us wander around ideas, whilst providing for us a safe and robust landscape to build and improve on.

My wish right now is that us, dental professionals, would assist to further help preventive care systems and patients. Prevention will, after all, be always the foundation for any steady medical system. And it establishes trust

That's not a new concept at all- history is there for a reason- not to jump back in it, but to look back on it and learn. Remember the "health officers" or the "plague doctors"? They were sheltered by communities and assigned to prevent the spread of plague and various other diseases. Their role was to protect people from getting sick. If the community did get sick, it was often seen as a failure on the part of the doctors, and they would be expelled from the community. The reasoning was that if they had done their job properly, diseases should have been prevented-they would lose people's trust.

Yes, that is an extreme and taken out of its context example, but let's take a step back in order to gain some other perspective out of it regarding a doctor's duties- and we now more than ever have the means and channels to do it.

Our profession and privileges come with the duty to cure, but maybe even more importantly nowadays, given the advancement of medical and digital technology, they entail the duty to prevent and inform.

As I have stated before, yet again, it is also about the meaning and story behind a product. It needs substance. This holds true for everything.

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The main resource and to whom I owe the credits the most maybe, are the patients and the set backs we encountered in practice.



### **THANKYOU**